



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

सं. उक्षेविस/वाणिज्यिक/ 209/ आर पी सी (72)/ 2024

दिनांक: 19 अप्रैल, 2024

सेवा में/To,

एनआरपीसी एवं टीसीसी के सभी सदस्य एवं विशेष आमंत्रित (संलग्न सूचीनुसार)
Members of NRPC & TCC & Special Invitees (As per List)

विषय: उत्तर क्षेत्रीय विद्युत समिति (एनआरपीसी) की 72 वीं और तकनीकी समन्वय समिति (टीसीसी) की 49 वीं बैठक का कार्यवृत्त।

Subject: MoM of 72th Northern Regional Power Committee (NRPC) & 49th Technical Co-ordination Committee (TCC)-reg

महोदय/महोदया,

तकनीकी समन्वयन समिति (टीसीसी) की 49 वीं बैठक दिनांक 29.03.2024 (सुबह 09:30 बजे) एवं उत्तर क्षेत्रीय विद्युत समिति की 72 वीं बैठक दिनांक 30.03.2024 (सुबह 09:30 बजे) को लखनऊ, उत्तर प्रदेश में आयोजित की गयी थी। बैठक का कार्यवृत्त संलग्न है। यह उ.क्षे.वि.स. की वेबसाइट (<http://164.100.60.165/>) पर भी उपलब्ध है।49th meeting of Technical Co-ordination Committee (TCC) was held on 29.03.2024 (09:30 AM) and 72th meeting of Northern Regional Power Committee (NRPC) was held on 30.03.2024 (09:30 AM) at Lucknow, Uttar Pradesh. MoM of the same is attached herewith. The same is also available on NRPC Sectt. Website (<http://164.100.60.165/>).

भवदीय

Yours faithfully

(वी.के. सिंह)

(V.K. Singh)

सदस्य सचिव

Member Secretary

प्रतिलिपि: एमडी, एचवीपीएनएल एवं अध्यक्ष, एनआरपीसी (md@hvpn.org.in)

List of addressee (via mail)				
NRPC Members for FY 2023-24				
S. No.	NRPC Member	Category	Nominated/ Notified/Delegated Member	E-mail
1	Member (GO&D), CEA	Member (Grid Operation & Distribution), Central Electricity Authority (CEA)	Member (GO&D), CEA	member.god@cea.nic.in
2	Member (PS), CEA	Nodal Agency appointed by the Government of India for coordinating cross-border power transactions	Member (PS), CEA	memberscea@nic.in
3	CTUIL	Central Transmission Utility	Chief Operating Officer	pcgarg@powergrid.in
4	PGCIL	Central Government owned Transmission Company	Director (Operations)	tyagir@powergrid.in
5	NLDC	National Load Despatch Centre	Executive Director	scsaxena@grid-india.in
6	NRLDC	Northern Regional Load Despatch Centre	Executive Director	nroy@grid-india.in
7	NTPC	Central Generating Company	Director (Finance)	jaikumar@ntpc.co.in
8	BBMB		Chairman	cmr@bbmb.nic.in
9	THDC		CGM (EM-Design)	rrsemwal@thdc.co.in
10	SJVN		CMD	sectt.cmd@sivn.nic.in
11	NHPC		Director (Technical)	raikumar0610.rkc@gmail.com
12	NPCIL		Director (Finance)	df@npcil.co.in
13	Delhi SLDC		General Manager	gmsldc@delhisldc.org
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15	Rajasthan SLDC		Chief Engineer (LD)	ce.ld@rvpn.co.in
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17	Uttarakhand SLDC		Chief Engineer	anupam_singh@ptcul.org
18	Punjab SLDC	Chief Engineer	ce-sldc@punjabslcdc.org	
19	Himachal Pradesh SLDC	Managing Director	mdhpsldc@gmail.com	
20	DTL	State Transmission Utility	CMD	cmd@dtl.gov.in
21	HVPNL		Managing Director	md@hvpn.org.in
22	RRVNL		CMD	cmd.rvpn@rvpn.co.in
23	UPPTCL		Managing Director	md@upptcl.org
24	PTCUL		Managing Director	md@ptcul.org
25	PSTCL		CMD	cmd@pstcl.org
26	HPPTCL		Managing Director	md.tcl@hpmail.in
27	IPGCL		Managing Director	md.ipgpp@nic.in
28	HPGCL		Managing Director	md@hpgcl.org.in
29	RRVUNL		CMD	cmd@rrvun.com
30	UPRVUNL		Director (Technical)	director_technical@uprvunl.org
31	UJVNL	Managing Director	mdujvnl@ujvnl.com	
32	HPPCL	Managing Director	md@hppcl.in	
33	PSPCL	State Generating Company & State owned Distribution Company	CMD	cmd-pspcl@pspcl.in
34	DHBVN	State owned Distribution Company (alphabetical rotaional basis/nominated by state govt.)	Director (Projects)	directorprojects@dhbvn.org.in
35	Jaipur Vidyut Vitran Nigam Ltd.		Managing Director	md@jvnl.org
36	Madhyanchal Vidyut Vitran Nigam Ltd.		Managing Director	mdmvnl@gmail.com
37	UPCL		Managing Director	md@upcl.org
38	HPSEB		Managing Director	md@hpsb.in
39	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	Head (Commercial & Regulatory)	sanjay.bhargava@tatapower.com
40	Aravali Power Company Pvt. Ltd		CEO	SRBODANKI@NTPC.CO.IN
41	Apraava Energy Private Limited		CEO	rajneesh.setia@apraava.com
42	Talwandi Sabo Power Ltd.		COO	Vibhav.Agarwal@vedanta.co.in
43	Nabha Power Limited		CEO	sk.narang@arsentoubro.com
44	Lanco Anpara Power Ltd		President	sudheer.kothapalli@meilanparapower.com
45	Rosa Power Supply Company Ltd		Station Director	Hirday.tomar@relianceada.com
46	Lalitpur Power Generation Company Ltd		Managing Director	yksbankoti@bajajenergy.com
47	MEJA Urja Nigam Ltd.		CEO	hopmeja@ntpc.co.in
48	Adani Power Rajasthan Limited		COO, Thermal, O&M	jayadeb.nanda@adani.com
49	JSW Energy Ltd. (KWHEP)		Head Regulatory & Power Sales	ivyotiprakash.panda@jsw.in
50	RENEW POWER	IPP having less than 1000 MW installed capacity (alphabetical rotaional basis)	CEO	sumant@renew.com
51	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	Chief Engineer, JKSPDCL/JKPDD	sojppdd@gmail.com / cejkpcl2@gmail.com
52	UT of Ladakh		Chief Engineer, LPDD	cepladakh@gmail.com
53	UT of Chandigarh		Executive Engineer, EWEDC	elop2-chd@nic.in
54	BYPL	Private Distribution Company in region (alphabetical rotaional basis)	CEO	Amarjeet.Sheoran@relianceada.com
55	Bikaner Khetri Transmission Limited	Private transmission licensee (nominated by central govt.)	Vice-President	nihar.raj@adani.com
56	Adani Enterprises	Electricity Trader (nominated by central govt.)	Head Power Sales & Trading	anshul.garg@adani.com
57	Ajmer Vidyut Vitran Nigam Ltd.	Special Invitee	Managing Director	md.avnl@rajasthan.gov.in
Special Invitees:				
RE Holding companies in NR with installed capacity of more than 1000 MW (provsional members as decided in 59th NRPC meeting)				

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM



उत्तर क्षेत्रीय विद्युत समिति
NORTHERN REGIONAL POWER COMMITTEE



Minutes of
The 49th meeting of Technical Coordination
Committee &
The 72th meeting of
Northern Regional Power Committee

Date: 29th & 30th March 2024

Time: 09:30 AM

Venue: Hotel Hyatt Regency
Lucknow, Uttar Pradesh

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM

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MINUTES
OF
49th MEETING OF TECHNICAL COORDINATION SUB-COMMITTEE
&
72th MEETING OF NORTHERN REGIONAL POWER COMMITTEE

Time & Date of TCC meeting: 09:30 Hrs. on 29.03.2024

Time & Date of NRPC meeting: 09.30 Hrs. on 30.03.2024

Proceedings of 49th TCC Meeting

The meeting started with a welcome note by GM, SJVN.

1. Member Secretary, NRPC welcomed all the participants and thanked SJVN for hosting the meeting. He highlighted that NRPC Secretariat has been given a lot of responsibilities under various CERC Regulations. NRPC Secretariat has been discharging its duties for facilitating utilities of Northern Region, however, all decisions are generally taken with consensus among all the stakeholders. He thanked all stakeholders for their support for smooth functioning of Northern Region be it Outage planning, LGBR, Certification of availability, issuance of various energy accounting etc.
2. New IEGC has added a lot of work for RPCs. Now, RPCs are approving protection settings also of element of voltage level 220 kV and above as per modalities decided in 48th PSC meeting.

He highlighted the government push for RE, EV, Hydrogen policy, PSP and reduction of fuel import. Targets for RE, i.e. 500 GW by 2030 is very ambitious and a cause of concern for stability of grid also. Various challenges have been faced in past due to RE integration.

This is high time to deliberate on solutions related to RE integration i.e. requirement of thermal generation flexibility, technologies like PSP, Synchronous condenser, ESS. In present scenario, reducing carbon emission from power plants and associated activities must be on our goal. Particularly, thermal plants need to remain

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viable in present market scenario and should be ready for flexible operation roadmap.

3. Chairperson, TCC welcomed all the participants. He highlighted that the Indian power sector is one of the most diversified in the world. The entire electricity supply chain has undergone a phase of transformation in the process of advancing reforms in the sector. Bharat is the third-largest producer and consumer of electricity worldwide. 100% FDI allowed in the power sector has boosted FDI inflow in this sector. It is evident that RE penetration of the country is unprecedented.

India ranks fourth in the world in Renewable Energy Installed Capacity. More than 44 percent of India's installed capacity comes from non-fossil fuels.

The country has a target of 500 GW of renewable energy capacity by 2030 and it is expected to achieve even earlier than that. The average emission factor is expected to reduce to 0.548 kg CO₂/kWh in the year 2026-27 to 0.430 kg CO₂/kWh by the end of 2031-32. The share of non-fossil based capacity is likely to increase to 57.4% by the end of 2026-27 and may likely to further increase to 68.4% by the end of 2031-32.

Evolution of Power Sector has been a perennial process. New regulations and rules are the essential parts for any development. Recently Tariff regulation for 2024-29 has become effective.

Forums like TCC and NRPC provide the stepping stone for Northern Region utilities, where issues of all stakeholders are discussed and bottlenecks are resolved. He conveyed that several operational and commercial issues for technical recommendation will be discussed in today's meeting. He urged all participants to actively take part and educate the forum when agenda regarding their issues are discussed.

4. Thereafter, agenda for the 48th TCC Meeting was presented & deliberated. The list of participants is attached as **Annexure-P**.

*49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM***Proceedings of 72th NRPC Meeting**

1. CMD, SJVN welcomed all the delegates. She expressed profound pride to host 49th TCC/ 72nd NRPC meeting. She highlighted that Indian power sector scenario is complex, marked by an aging infrastructure, disparities in grid connectivity, and growing energy demands. Traditional sources like coal and gas are declining, while nuclear power faces regulatory hurdles. This calls for a paradigm shift towards renewable energy.

The hydro sector holds immense potential for renewable energy. India's vast hydroelectric resources can provide baseload power, complementing intermittent renewables. However, hydro projects face challenges in financing, environmental impact, and regulatory approval. Sustainable hydro development, with emphasis on run-of-the-river technologies, can contribute significantly to India's renewable energy goals.

India has set ambitious targets for renewable energy deployment, yet integrating variable and intermittent sources like wind and solar into our grid remains a technical and economic hurdle. We must develop innovative solutions for grid stability, energy storage, and demand management to harness the full potential of renewables.

The power sector's future lies in a balanced mix of renewable and non-renewable sources. Emphasizing cleaner, more efficient fossil fuel use, maximizing renewable integration, and leveraging storage and grid flexibility will create a resilient, sustainable, and affordable power system. This will require strong policy frameworks, technological innovation, and concerted efforts from all stakeholders.

Furthermore, she called upon the committee to champion the sustainable development of the hydroelectric sector. Hydro power, with its vast untapped potential, can play a crucial role in balancing the grid and providing baseload capacity. However, it must be developed in a manner that is environmentally and socially responsible, respecting local communities and preserving our natural heritage.

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2. Member Secretary, NRPC highlighted the discussion held in 48th TCC meeting and urged the members to give their inputs for decision on the matter. He also highlighted the works completed in NRPC premises.
3. Chairperson, NRPC thanked SJVN for hosting meeting and giving conducive environment for discussion. He highlighted role of electricity in development of country. He emphasized the need of deliberation on issues cropped up due to advancement of technology. He urged members to contribute to this forum for decision on agenda.

Thereafter, agenda for the 72th NRPC Meeting was presented & deliberated. The list of participants is attached as **Annexure-Q**.

A.1 Approval of MoM of the 48th TCC meeting

- A.1.1 EE (P), NRPC apprised that the minutes of the 48th TCC meeting (held on 17.11.2023) was issued vide letter dtd. 08.12.2023. Comments received from members on minutes of 48th TCC meeting, were discussed in 71st NRPC meeting (held on 29.01.2024) and accordingly minutes of 48th TCC meeting were modified and confirmed in 71st NRPC meeting.

Decision of forum:

TCC and NRPC members noted the same.

A.2 Non-payment of Late Payment Surcharge payable against Energy Supplied from RHPS (Agenda by SJVN)

TCC Deliberation

- A.2.1 SJVN representative apprised that SJVN is supplying Energy to Punjab State Power Corporation Ltd. (PSPCL) from its project "Rampur Hydro Power Station (RHPS)".
- A.2.2 He further added that as per clause 8.4 of mutually signed PPA between SJVN and PSPCL, Payment received from PSPCL shall be adjusted as follows:

Clause 8.4 of PPA is reproduced below:

All Payments received from the Bulk Power Customer shall be appropriated by SJVN for the amounts due in the following order of priority:

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- i) Towards late payment surcharge payable, if any;*
- ii) Towards outstanding Monthly Bills, if any;*
- iii) Towards the Capacity Charges, Energy Charges and any other charges in the current bill(s)*

SJVN had charged LPS to PSPCL as per above clause.

- A.2.3 MOP, GOI had issued Gazette Notification on dated 22.02.2021. As per Clause 5 of the said Notification All payments by a distribution Licensee to a generating company or a trading licensee for power procured from it or by a user of a transmission system to a transmission licensee shall be first adjusted towards Late payment surcharge and thereafter towards monthly charges, starting from the longest overdue bill.
- A.2.4 Subsequent to above notification, all the payments from PSPCL have been adjusted by SJVN first towards Late payment surcharge and thereafter towards monthly charges, starting from the longest overdue bill.
- A.2.5 PSPCL has been making the Late payment surcharge payment calculation without considering terms and conditions of the PPA and disputing the LPS charged by SJVN in PRAAPTI portal without assigning any reason.
- A.2.6 SJVN has been rigorously following with PSPCL for its outstanding payments.
- A.2.7 He requested that PSPCL may be directed to accept the Late Payment surcharge calculation as per the methodology defined in the mutually signed PPA.
- A.2.8 Further, PSPCL may be directed to pay the outstanding amount including LPS on delayed payments to avoid any penal action provided in CERC regulation.
- A.2.9 PSPCL representative stated that recently, one letter has been issued to SJVN intimating resolution of all issues of SJVN.
- A.2.10 SJVN representative stated that issue of outstanding amount including LPS on delayed payments is still unresolved.
- A.2.11 MS, NRPC recommended that as per signed PPA, the matter should be settled by both parties.

NRPC Deliberation

- A.2.12 Forum was in consonance of the deliberation held in TCC meeting

Decision of Forum

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM

Forum directed that Punjab State Power Corporation Ltd. (PSPCL) shall abide by PPA provisions and accordingly resolve the issue with SJVN.

A.3 Non-Opening of Letter of Credit by JKPCL (formally PDD, J & K) for power supplied from NJHPS & RHPS (Agenda by SJVN)

TCC Deliberation

- A.3.1 SJVN representative apprised that as per mutually signed Power Purchase Agreement and MOP, GOI various order/ gazette Notifications (e.g. 28.06.2019, 21.02.2021 and 03.06.2022), beneficiary has to establish Letter of Credit in line with payment security mechanism. The established LC should be confirmed, revolving, irrevocable and in favour of SJVN for an amount equivalent to 105% of average monthly billing of preceding 12 months with appropriate bank as mutually acceptable to both the parties. The LC shall be kept valid at all the time during the validity of the Power Purchase Agreement.
- A.3.2 In spite of repeated reminders, JKPCL had not opened Letter of Credit after 13.11.2019 for power supplied from NJHPS and RHPS. The value of LC for NJHPS and RHPS for F.Y. 2023-24 is Rs. 18.24 Cr per month and 9.64 Cr per month respectively. JKPCL may be advised to submit Letter of Credit of above amount in favour of SJVN at the earliest.
- A.3.3 CGM, NRLDC raised the concern over LC opening for deviation settlement.
- A.3.4 CE, JKPCL informed that matter of LC of all the concerned utilities will get resolved by April, 2024 positively as the matter has been taken up with higher management.
- A.3.5 MS, NRPC highlighted that apart from SJVN, LC issue is also pending for other utilities viz NHPC & NPCIL and a separate DO letter from NRPC had already been sent to J&K Govt. to resolve the LC matter and special meeting was also held in February, 2024 to expedite the same.

NRPC Deliberation

- A.3.6 Forum was in consonance of the deliberation held in TCC meeting and advised JKPCL to expedite opening of LC.

Decision of Forum

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM

J&K was requested to expedite the process for submission of LC to concerned parties.

A.4 Conditional Payment of Energy bills by BRPL (Agenda by SJVN)

TCC Deliberation

A.4.1 SJVN representative apprised that BRPL is mentioning “Without Prejudice” word in their payment intimation letters. This matter was raised in previous NRPC meetings as well.

The agenda regarding the use of word “Without Prejudice” by BRPL was also discussed in 70th NRPC meeting held at Amritsar Punjab on 17/18.11.2023.

As per MOM of 70th NRPC meeting, NRPC Forum suggested BRPL to not use such words (i.e., “Without Prejudice”) if SJVN is not a party to writ.

Further, the same agenda was discussed in 71st NRPC meeting. As per MOM of 71st NRPC meeting, NRPC Forum decided to have a separate meeting with SJVN and Delhi DISCOMs to resolve the same.

A.4.2 EE (C), NRPC stated that a meeting was held on 21.03.2024 at 11:00Hrs. through VC among NTPC, SJVNL, THDCIL, BRPL, BYPL, and NRPC secretariat under the chairmanship of Member Secretary, NRPC wherein BRPL representative informed that BRPL has some concerns with DERC Tariff regulations over under-recovery of its power procurement charges.

A.4.3 In this regard, a writ was filed in the Hon'ble Supreme Court in 2014. Whereas Hon'ble SC has reserved its decision, no order has yet been issued. Subsequently, BRPL's counsel on the matter advised it to give such remarks 'Without Prejudice' in correspondence of bill payments to GENCOs till such time an order is awaited from Hon'ble SC.

A.4.4 BRPL was advised to take revised advice from its counsel since the matter of under-recovery of its power procurement charges pertains to DISCOM customers and not GENCOs.

A.4.5 SJVN representative conveyed that BRPL has not taken any step to resolve this issue. He further mentioned that if BRPL not resolve the above issue, SJVN may consider termination of PPA as payments received from BRPL towards electricity supplied are subject to audit observation due to the use of word “Without Prejudice”

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- A.4.6 BRPL officials were not present in the meeting, however, on behalf of BRPL, BYPL officials represented the case.
- A.4.7 BYPL representative mentioned that BRPL desired to have a meeting bilaterally so that matter gets resolved. For the same a letter dated 27.03.2024 has been sent to SJVN.
- A.4.8 Forum observed that SJVN is not a party in DERC case. Moreover, other DISCOMs of Delhi are having no issues with SJVN. Neither, BRPL has any issue with other generators like NTPC.

NRPC Deliberation

- A.4.9 Forum agreed upon the deliberation held in TCC meeting and suggested both the parties to sit together in order to resolve the issue.

Decision of Forum

Forum recommended both the parties to deliberate and resolve the matter mutually and suggested SJVN that termination of PPA may be considered as last resort.

- A.5 Deemed availability for outage duration for replacement of 220/132 KV, 100MVA ICT at Sitarganj with 220/132KV, 160 MVA Regional spare ICT under (Agenda by POWERGRID)**

TCC Deliberation

- A.5.1 GM, POWERGRID apprised that vide 66th and 67th NRPC meeting, forum agreed for replacement of existing 01 no. 100MVA, 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) for system strengthening & reliability and keeping the replaced 100 MVA, 220/132 ICT as regional spare. The estimated expenditure of Rs 1.25Cr (excluding taxes) towards replacement of ICT and construction of tertiary bay has been agreed and consented in 67th NRPC meeting under ADD-CAP. Copy of relevant excerpts from 66th & 67th MOM is attached herewith at **Annexure-I**.
- A.5.2 He emphasized that replacement work of 220/132 KV, 100MVA ICT at Sitarganj with 220/132kV, 160 MVA, Regional spare ICT involves dismantling of existing ICT along with civil structures and construction of suitable civil structures, shifting, installation, testing & commissioning of 160MVA 220kV ICT in line with the existing bays and tertiary connection to auxiliary transformer, this entire work requires minimum period of 3 to 4 months.

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- A.5.3 In view of the above, POWERGRID, NR-3 requested that outage period for replacement work of existing 01 no. 100MVA, 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) for system strengthening & reliability may be considered as deemed available.
- A.5.4 MS, NRPC suggested POWERGRID to get approval from CERC for the same work under ADDCAP as per tariff regulation.
- A.5.5 TCC, Chairperson also agreed for the same.

NRPC Deliberation

- A.5.6 Forum was in consonance of the deliberation held in TCC meeting.

Decision of Forum

Forum recommended POWERGRID to get the approval of ADDCAP from CERC for replacement of 220/132 KV, 100MVA ICT at Sitarganj with 220/132KV, 160 MVA Regional spare ICT and after approval of CERC, the availability will be considered for deemed availability under system upgradation as per the Tariff Regulation.

- A.6 Approval for Insulator replacement of 500kV HVDC Ballia-Bhiwadi Lines under Deemed Availability (Agenda by POWERGRID)**

TCC Deliberation

- A.6.1** GM, POWERGRID apprised that stability of Northern Grid is vital and a major concern for POWERGRID management. Fog and pollution are major cause of tripping of lines in Northern Region, which may lead to cascading effect of multiple tripping and major failure.
- A.6.2** He added that HVDC lines have inherent tendency to attract the dust particle. Therefore, the pollution deposit is higher on insulators of DC lines as compared to AC Lines and chance of flashover & failure of insulators in DC lines is more in bad weather condition.
- A.6.3** Consequently, number of de-capping of porcelain insulators had occurred in ± 500 kV HVDC Ballia - Bhiwadi transmission lines in Dec'2022 under foggy weather conditions and large no. of tripping/ Auto-reclose has been reported in last few years as per detail below:

Name of the line	Count of OUTAGE/Transient					TOTAL
	2019	2020	2021	2022	2023	

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500KV HVDC BALIA- BHIWADI POLE- I	17	32	29	18	57	153
500KV HVDC BALIA- BHIWADI POLE- II	34	20	33	28	52	167

- A.6.4** Insulator cleaning and replacement with polymer is being carried out in ± 500 kV HVDC Ballia-Bhiwadi at major crossings and polluted stretches on regular basis, but complete insulator replacement with polymer is required to avoid frequent tripping/breakdown, partial Grid failure due to major breakdown of HVDC Ballia-Bhiwadi Lines.
- A.6.5** Procurement of polymer insulators is under process and outage of 10 days will be required for each circuit of HVDC Ballia-Bhiwadi Lines on daily basis (one by one) for replacement of porcelain insulator with CLR polymer insulators.
- A.6.6** The matter for replacement of porcelain insulator with polymer insulator in HVDC Ballia-Bhiwadi Pole-1 & 2 was discussed to avoid frequent tripping/ breakdown and POWERGRID requested that proposed outage of HVDC Ballia-Bhiwadi Pole-1 & 2 may be considered as deemed available in view of system improvement and grid stability. Copy of relevant excerpts from 210th OCC is attached herewith at **Annexure-II.**
- A.6.7** Insulator replacement with polymer insulators has already been approved for Hisar-Bawana & Bawana-Bahadurgarh Lines owned by POWERGRID during meeting taken by Member Secretary, NRPC on 14.11.2008 and MOM dated 25.11.2008 of the meeting is attached herewith at **Annexure-III.**
- A.6.8** Replacement of Porcelain insulator by long rod polymer insulators in 400kV Mandola-Bareilly ckt 1 & 2 was also approved vide 27th TCC & 30th NRPC meeting dated 27-28 Feb'2014. Copy of the same is attached herewith at **Annexure-IV.**
- A.6.9** In view of above and considering the system improvement and grid stability, proposed outage of HVDC Ballia-Bhiwadi Pole-1&2 for approx. 10 days each (one by one on daily basis) may be considered as deemed available in view of system improvement action at POWERGRID's own cost.

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- A.6.10** MS, NRPC opined that this process will not be burdensome for other power utilities in terms of cost bearing and will led to system improvement, as the entire cost of insulator replacement shall be borne by Powergrid.
- A.6.11** EE (P), NRPC mentioned that deemed availability has been given in past for replacement of insulators under ADD CAP approved by CERC. He quoted the minutes of meeting held on 14.11.2008 under chairmanship of MS, NRPC for replacement of porcelain insulators. He also quoted minutes of 27th TCC/ 30th NRPC (27-28 Feb 2014) wherein forum recommended replacement for POWERLINK.
- A.6.12** ED, POWERGRID highlighted that frequent tripping causes the unnecessary stress on the transformer and converters and may lead to large duration outage, Therefore, POWERGRID decided to replace the insulators on its own cost for system improvement and requested for deemed availability for the 10 days outages of each line.
- A.6.13** CGM, NRLDC stated that for an outage to be deemed available under system upgradation, it needs to be checked as per the present CERC regulations.
- A.6.14** GM, CTUIL expressed concerns for allowing outage of the HVDC Ballia-Bhiwadi Pole-1&2, if Sikar -2 is not able to come in near future.
- A.6.15** Forum agreed upon the need for replacement of existing insulator with polymer insulator in above HVDC line for system improvement point of view and entrusted MS, NRPC to examine the case of deemed availability as per the changes happened in CERC regulation.

NRPC Deliberation

Forum agreed upon decisions of TCC.

Decision of Forum

The matter will be reviewed by MS, NRPC as considerable time has passed since last such case and deemed availability will be decided accordingly by MS, NRPC.

- A.7 De-scoping of “Shifting of 25MVAr 220kV Reactor from Dhauliganga to Jauljivi S/s and commissioning as a Bus Reactor at Jauljibi S/s” and Capitalisation of 220kV Reactor Bay at Jauljibi Substation w.e.f. 03.01.2023 (Agenda by POWERGRID).**

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- A.7.1 GM, POWERGRID apprised that the scope of work under Northern Region System Strengthening Scheme-XXXVII (NRSS-XXXVII) is for establishment of 400/220kV Jauljivi GIS (new) Substation inter-alia including the following were agreed in the 36th meeting of NRPC (Copy refer minutes para D 1.3 attached at **Annexure-V**):

Sl. No.	Assets
A	<p>Creation of 400/220kV, 7X105MVA GIS Substation in Jauljivi area under ISTS by LILO of both ckts. of 400kV Dhauliganga-Bareilly (presently charged at 220kV) at 400/220kV Jauljivi(PG) [Incoming line from Dhauliganga shall be charged at 220kV & outgoing to Bareilly shall be charged at 400kV].</p> <p>The 400/220 kV Jauljivi substation to have the following provision:</p> <p><u>400 kV side</u></p> <ul style="list-style-type: none"> a) 7x105 MVA Single Phase ICTs along with ICT bays b) 2 nos. of line bays c) 2X63MVAr switchable line reactors in Bareilly-Jauljivi 400kV D/c at Jauljivi end for providing voltage control under various operating conditions. These 63MVAr line reactors shall be taken up as single-phase units, if required. d) Space provision for 2 future bays <p><u>220 kV side</u></p> <ul style="list-style-type: none"> a) 2 nos. of ICT bays b) 8 nos. of line bays (Pithoragarh-2, Almora-2, Jauljivi-2 & Dhauliganga-2) c) One no. of 220kV sectionaliser d) Shifting of 25 MVAr line reactor already available in 220kV Dhauliganga –Bareilly line at Dhauliganga end, to 400/220kV Jauljivi S/s as a bus reactor at 220kV

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	e) Disconnection of 220 kV LILO of Dhauliganga - Bareilly at Pithoragarh and connection of Pithoragarh line to Jauljivi 400/220 kV S/s at 220kV.
B	Diversion of Dhauliganga-Bareilly 400kV D/c line (operated at 220kV) at Bareilly end from Bareilly(UP) to Bareilly(PG) along with 2 nos. of 400kV bays at Bareilly.

It is to mentioned that all the assets under subject scheme were commissioned in Dec'22/Jan'23 except asset mentioned at SI No. 1.A.d (220kV side) above i.e. *"Shifting of 25 MVAR line reactor already available in 220kV Dhauliganga –Bareilly line at Dhauliganga end, to 400/220kV Jauljivi S/s as a bus reactor at 220kV"* .

- A.7.2 As per scope of work, shifting of 25MVAR 220kV Bus Reactor from Dhauliganga to Jauljibi and commissioning as a Bus Reactor at Jauljibi is to be done, however, it could not be done due to washing out of bridge at Kulagad Nallah (road from Dhauliganga to Jauljibi) on account of flash flood and rolling down of huge stone boulders in the Kulagad Nallah. BRO created a temporary valley bridge at Kulagad which has load limitation and is not suitable to transport 25 MVAR reactor (weighing 40 MT) to Jauljibi from NHPC Dhauliganga.
- A.7.3 Further, he mentioned that NRPC (in its 188th OCC meeting held on 22.10.2021) (Copy attached at **Annexure-VI**) had granted permission to charge the 400/220kV Jauljivi S/s without 25MVAR 220kV Bus Reactor citing no significant impact on the system as the reactor is of 25MVAR only. Finally, 220kV Bus Reactor Bay is charged on 03.01.2023 at no load. BRO vide letter dated 08.02.2024 (Copy attached at **Annexure-VII**) has stated that permanent bridge would take 2-3 years to complete the bridge construction work.
- A.7.4 As intimated by BRO, bridge at Kulagad Nallah (road from Dhauliganga to Jauljibi) would take 2-3 years i.e expected by 2026-27 and as discussed in the 188th OCC meeting, 25 MVAR 220kV Bus Reactor has no significant impact on the system, following were proposed for the approval:
- a. De-scoping of *"Shifting of 25 MVAR 220kV Reactor from Dhauliganga to Jauljivi S/s and commissioning as a Bus Reactor at Jauljivi S/s"*.

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b. Capitalization of 220kV Reactor Bay at Jauljibi Substation w.e.f. 03.01.2023.

A.7.5 CGM, NRLDC suggested that POWERGRID may shift the reactor after the bridge work completion.

A.7.6 MS, NRPC opined that considering above facts proposed descoping by Powergrid may be agreed by forum. However, system conditions may be reviewed at the time of bridge completion. Based on the requirement, reactor may be planned at Jauljivi S/S.

NRPC Deliberation

A.7.7 Forum concurred the discussion held in the TCC meeting.

Decision of Forum

- i. De-scoping of "Shifting of 25 MVAr 220kV Reactor from Dhauliganga to Jauljivi S/s and commissioning as a Bus Reactor at Jauljibi S/s".*
- ii. Capitalization of 220kV Reactor Bay at Jauljibi Substation w.e.f. 03.01.2023.*
- iii. Need of reactor at Jauljibi may be reassessed after completion of bridge construction at Kulagad Nallah by BRO.*

A.8 Construction of Colony at Fatehpur, Sohawal and Shahjahanpur Substation (Agenda by POWERGRID)

TCC Deliberation

A.8.1 GM, POWERGRID apprised that 765/400kV 1500MVA ICT-I & II along with associated bays at Fatehpur Sub-station has been commissioned on 01.04.2012 under "Common Scheme for 765 kV Pooling Station and Network for NR, import by NR from ER and Common Scheme for network for WR and Import by WR from ER and from NER/SR/WR via ER" in Northern, Eastern & Western Region.

A.8.2 With regard to Add cap in case of "765/400kV 1500MVA ICT-I & II along with associated bays", the construction of colony at Fatehpur S/s was not constructed at the location previously due to implementation of National Transmission Asset Management Centre (NTAMC) inter-alia for remote operation of substation and establishment of Maintenance Service Hub (MSH) concept. However, considering the challenges faced in maintenance through MSH, it was felt appropriate to follow the earlier concept of substation maintenance by placing maintenance staff at the substation and that for operation purpose, to place some operation staff in

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substation so that any contingency can be met immediately to avert any major breakdown. Accordingly, residential quarters for Operation & Maintenance staff at Fatehpur S/s are being constructed under instant project scheme in which colony were originally provisioned in DPR. Copy of Affidavit of Petition No. 732/TT/2020 having abstract cost estimate of 765kV Fatehpur substation (New) is enclosed hereto as **Annexure-VIII**. Further, it is submitted that instant project has been discussed and agreed in SCM and RPCs.

A.8.3 Now CERC vide order dated 10.03.2023 against petition no 732/TT/2020 at page 101 & 102 under clause 90 (attached herewith at **Annexure-IX**) has disallowed the Additional Capitalization in construction of colony beyond the cutoff date and directed that *“However, we are not inclined to allow the ACE after the cut-off date at this stage. The Petitioner is directed to discuss the same in the RPC and thereafter approach the Commission along with the details of actual expenditure incurred on construction of colony at the time of truing up of tariff for 2019-24 period for further consideration”*. The construction cost is Rs 5.57 Cr.

A.8.4 He added that similar Direction has also been given by the Hon'ble commission for construction of Colony after the cut-off date at 400kV Sohawal and Shahjahanpur Sub-station under NRTSS Scheme vide order dated 31.05.2022 and 04.12.2023 against Petition No. 625/TT/2020 at page 127 and 128 under cluse 84 and Review Petition No. 35/RP/2022 respectively. Copy of the order is enclosed hereto as **Annexure-X**. The construction cost for Sohawal and Shahjahanpur is Rs 6.05 Cr and Rs 4.57 Cr respectively.

A.8.5 Accordingly, POWERGRID requested to consider the construction of colony after cut-off date at Fatehpur, Sohawal and Shahjahanpur Sub-Station under the respective schemes as per the earlier concept of substation maintenance by placing maintenance staff at the substation and that for operation purpose, to place some operation staff in substation so that any contingency can be met immediately to avert any major breakdown in the system.

A.8.6 CGM, NRLDC mentioned that availability of Manpower at Substation will help in taking swift actions in real-time based on RLDC instruction. Moreover, in case of tripping or other issue, manpower would be available at site for providing exact status to system operator.

A.8.7 MS, NRPC stated that as pe old practice, colony may be constructed at Substations to place maintenance staff. Therefore, proposal may be approved.

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A.8.8 Forum concurred the discussion held in the TCC meeting and decided to give approval for colony construction under ADDCAP.

Decision of Forum

Forum approved the proposal of POWERGRID for ADDCAP for construction of colony after cut-off date at Fatehpur, Sohawal and Shahjahanpur Sub-Station under the respective schemes.

A.9 Restoration of 33kV supply for 400/220kV Saharanpur substation of POWERGRID disconnected by Paschimanchal Vidyut Vitran Nigam Limited (Agenda by POWERGRID)**TCC Deliberation**

A.9.1 EE (P), NRPC apprised that The Paschimanchal *Vidyut Vitran Nigam Limited* and Power Grid Corporation of India Limited have formally signed an agreement dated 16.10.2015 (**Annexure-XI**), ensuring an uninterrupted and independent supply of 33KV to POWERGRID Saharanpur substation under the HV-2 Tariff.

A.9.2 POWERGRID representative added that Executive Engineer, Saharanpur changed the category from HV-2 to HV-1 and send Demand Notice for depositing the electricity dues of Rs. 65,51,788/- (**Annexure-XII**) citing the reason that “there was a typographical error in the agreement”. Further, 33 kV independent feeder of Saharanpur substation of POWERGRID was disconnected in Oct’2022.

A.9.3 The lack of prior communication and the sudden change in the feeder category from HV-2 to HV-1 has caused confusion and disrupted our operations. Uninterrupted auxiliary supply is basic requirement for trouble free operation of any EHV substation. Non-availability of auxiliary supply may lead to outage of 400/220kV Saharanpur substation of POWERGRID.

A.9.4 In view of the above, POWERGRID requested to restore the 33kV supply of 400/220kV Saharanpur substation of POWERGRID at the earliest and resolve any discrepancies or misunderstandings regarding the agreement and billing.

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A.9.5 Director, UPSLDC informed that the Director (Commercial), Paschimanchal Vidyut Vitran Nigam Limited has been apprised the issue. It will be resolved positively within 15 days.

NRPC Deliberation

A.9.6 MS, NRPC advised POWERGRID to get the such matter resolved bilaterally first and in case of no resolution, agenda may be brought in the NRPC meetings.

Decision of Forum

Forum requested both the parties to resolve the issue and directed POWERGRID to pursue the higher management of concerned utility firstly before coming to Forum.

A.10 Redundant Communication for Banala (Parbati Pool) (PG), Parbati-II (NHPC) & Parbati-III (NHPC) stations (Agenda by CTU)

TCC Deliberation

A.10.1 CM, CTUIL apprised that presently data of Parbati-II (NHPC), Parbati – III (NHPC) is routed to NRLDC through leased line/ PLCC. Further Banala (PG) station is connected over single fiber path with Hamirpur.

A.10.2 OPGW cable installation on the following PKTCL (Indigrid) lines were envisaged under Reliable Communication Project of NR (implementing by POWERGRID) for redundant communication of Parbati-II (NHPC), Parbati – III (NHPC) & Banala (PG) stations:

- (i) Parbati-II – Parbati-III
- (ii) Parbati-III – Parbati Pooling (Banala)
- (iii) Parbati Pooling (Banala) – Koldam

A.10.3 However, work could not be completed due to ownership issues. The above lines were constructed by PKTCL under RTM mode. Above lines have mixed ownership of PKTCL & POWERGRID for certain line sections. The above matter discussed in the 2nd & 3rd CPM (CTU Communication Planning Meeting) meeting of northern region and in 23rd TeST meeting of NRPC.

A.10.4 To address these issues a special meeting has been convened by NRPC on 22.12.23 among INDIGRID, NRLDC, CTU, POWERGRID and CEA, minutes of the

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same was released on 21.02.24 (attached at **Annexure-XIII**). As per minutes replacement of earthwire with OPGW was allowed to be executed by transmission licensee owning earthwire after approval of the competent authority inline with CERC order dated 27.12.2023 (attached at **Annexure-XIV**) against petition number 94/MP/2021.

A.10.5 It is to mention that POWERGRID has already installed OPGW for their sections, for PKTCL section OPGW needs to be installed to provide fiber based redundant communication for Banala (PG), Parbati-II (NHPC) & Parbati-III (NHPC) stations.

A.10.6 Details of Sections of PKTCK ownership for the lines mentioned in 1.2 given below:

- (i) Parbati-II (NHPC) – Parbati-III (NHPC) - 9.643 kms.
- (ii) Parbati-III (NHPC) – Parbati Pooling (Banala) (PG) – 3.518 kms.
- (iii) Parbati Pooling (Banala) (PG) – Koldam (NTPC) – 62.636 kms.
- (iv) Parbati-II (NHPC) - Parbati Pooling (Banala) (PG) – 12.838 kms. (for providing ring protection)

A.10.7 For Parbati-II- Parbati Pooling (Banala) line section, OPGW on POWERGRID portion of 0.783 kms. also needs to be installed for completing ring protection between Banala, Parbati-II, Parbati-III.

A.10.8 During discussions in the meeting held on 22.12.23 at NRPC, it was decided that POWERGRID shall install FOTE at Banala, Parbati-II, Parbati-III & Koldam stations under NR Reliable Scheme.

A.10.9 OPGW of both PKTCL & POWERGRID shall be patched to make complete fiber paths.

A.10.10 Further For the Connectivity of Sainj (HPCL) station that is LILO of Parbati- III – Parbati-II line, HPCL to provide OPGW and FOTE (1 no.) and Sainj. Details of OPGW requirement mentioned with different color coding on line diagram attached at **Annexure-XV**.

A.10.11 Accordingly, Summary of Schemes to provide redundant communication to Banala, Parbati-II, Parbati-III stations were presented by CTUIL as below:

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- A. Scheme Name:** Supply and installation of 24 Fibre OPGW on PKTCL lines for providing redundant communication for Banala (Parbati Pool) (PG), Parbati-II (NHPC) & Parbati-III (NHPC) stations.

Scope of scheme - Supply and installation of OPGW (24F) on the following lines owned by PKTCL:

- (i) Parbati-II – Parbati-III - 9.643 kms.
- (ii) Parbati-III – Parbati Pooling (Banala) – 3.518 kms.
- (iii) Parbati Pooling (Banala) – Koldam – 62.636 kms.
- (iv) Parbati-II- Parbati Pooling (Banala) – 12.838 kms.

Total Kms. – 88.635 Kms.

Estimated Cost : **Rs. 5.31 crore (approx.) (excluding taxes and duties)**

Implementation Mode: **RTM**

Implementation Agency – **PKTCL**

Schedule of installation – **18 months from the date of allocation**

Scheme to be put up in NCT for approval after RPC views.

- B. Scheme Name :** Supply and installation of 24 Fibre OPGW & FOTE to provide redundant communication Banala (Parbati Pool) (PG), Parbati-II (NHPC) & Parbati-III (NHPC) stations.

Scope of scheme :

- (a) Supply and installation of OPGW (24F) on Parbati-II- Parbati Pooling (Banala) line (0.783 kms) on POWERGRID portion.
- (b) Supply and installation of 4 nos FOTE (STM-16) at Banala (PG), Parbati-II (NHPC), Parbati-III (NHPC) & Koldam (NTPC) (1 no. at each location)

Estimated Cost : **Rs. 1.24 crore (approx.) (excluding taxes and duties)**

Implementation Mode: **RTM**

Implementation Agency – **POWERGRID**

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Schedule of installation – 18 months from the date of allocation (with matching schedule with Scheme A.)

C. Scheme Name: Supply and installation of 24 Fibre OPGW & FOTE to provide Fiber based connectivity to Sainj (HPCL) station:

Scope of scheme : 1 no. FOTE (STM-16) at Sainj (HPCL) and 2 no. OPGW (24F) (0.395 kms. +0.397 kms.) for both Loop In and Loop Out Portion of Sainj (HPCL).

HPCL/ HPPTCL to install the same under STU schemes.

A.10.12 Chairperson, TCC raised the concern of commercial aspects of fiber sharing post implementation for other than grid operation purposes.

A.10.13 CM, CTUIL highlighted that the financial issues will be decided by utilities as per CERC regulations.

A.10.14 Regarding scheme of Sainj (HPCL), HPPTCL requested that scope of work is quite small (1 no. FOTE and 2 no. OPGW (24F) (0.395 kms. +0.397 kms), therefore it would be convenient if POWERGRID implements scheme for HP also. POWERGRID agreed for same.

NRPC Deliberation

A.10.15 Forum concurred the deliberation held in the TCC meeting.

Decision of Forum

- i. *Forum accorded technical approval for the presented schemes.*
- ii. *Forum directed that any sharing of dark fiber by respective licensee post implementation will be governed by extant CERC regulations. (i.e. commercial aspects)*
- iii. *Further, as per request of HPPTCL for implementation of its part (OPGW & FOTE), it may be carried out by PGCIL on mutually agreed charges.*

A.11 Redundant Communication for Chamera-III (NHPC) & Budhil (GreenCo) (Agenda by CTU)

TCC Deliberation

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A.11.1 CM, CTUIL apprised that Chamera-III & Budhil stations are presently connected via single fiber path to ISTS network. Redundant communication for these stations were deliberated in the 2nd & 3rd CPM of NR, 20th, 23rd & 24th TeST Meeting of NRPC. In the 23rd TeST meeting of NRPC it was decided that to create redundant path for these stations 1 no. STM-16 FOTE is required at Lahal (HPPTCL) and 3 pairs of fibers sharing is required for the following HPPTCL links:

1. Budhil(GreenCo) - Lahal(HP)
2. Lahal (HP) – Chamera PS (ISTS node)

A.11.2 HPPTCL vide letter dtd. 01.02.24 has given consent to NRPC with copy to CTU for 3 pairs of fibers sharing for ULDC data purpose (copy letter is attached at **Annexure-XVI**).

A.11.3 After implementation of above scheme, Chamera-III & Budhil shall have ring protection as below: Chamera PS – Chamera-III – Budhil – Lahal - Chamera PS.

A.11.4 In view of above, he proposed the scheme with details as below:

Scheme Name: Redundant Communication for Chamera-III (NHPC) & Budhil (GreenCo) using 3 pairs of fibers sharing from HPPTCL network.

Scheme Scope: Supply and installation of 1 no. STM-16 FOTE at Lahal (HPPTCL)

Estimated Cost: **Rs. 0.3 crore (approx.) (excluding taxes and duties)**

Implementation Mode: **RTM**

Implementation Agency – **POWERGRID**

Schedule of installation – **6 months from the date of allocation**

A.11.5 He added that scheme to be put up in NCT for approval after RPC views.

A.11.6 POWERGRID representative raised the concern that due to small scope of work, vender is not easily available. Therefore, he demanded extra time to get the work done and mentioned to add this work with other available schemes.

NRPC Deliberation

Forum concurred the discussion held in the TCC meeting

Decision of Forum

- i. *Scheme was technically approved for implementation.*

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- ii. *PGCIL's request to club this scheme with another major scheme for smoother implementation was agreed by forum.*
- iii. *Schedule of work agreed for 18 months.*

A.12 Dual reporting of SCADA Channels (RTU/SAS) to NRLDC and Back up NRLDC (Agenda by CTU)**TCC Deliberation**

- A.12.1 CM, CTUIL representative apprised that presently SCADA data channels are reporting in main and backup mode with main channel to RLDC and backup channel to Backup RLDC. Meeting for Planning of Communication system for Inter-State Transmission system (ISTS) among RLDCs, POWERGRID, CTUIL and CEA was held in Virtual Mode on 05.04.2023. During the meeting, it was discussed and approved by CEA to increase the redundancy in the system both main and backup channels should report to RLDCs as well as back up RLDCs in dual mode considering the criticality of real time grid operations by the RLDCs. Minutes of meeting is attached as **Annexure-XVIIa**.
- A.12.2 For new ISTS stations CTU has started mentioning this requirement in the RFP inputs to TBCB projects based on the CEA's recommendation vide mail dtd. 11.08.2023. For existing ISTS sub stations requirement for additional ethernet ports in RTU/SAS and FOTE were deliberated in the meetings held among POWERGRID, Grid-India, CTU and CEA on dated 09/05/23 and 27/06/23 (Attached at **Annexure-XVIIb**). As per deliberations of the meetings, POWERGRID has to provide the region wise data of additional requirement for equipment/card/port etc in respective FOTE/Gateway/RTU for the implementation of dual redundancy to RLDCs & Backup RLDCs.
- A.12.3 The requirement of additional FOTE/ Ethernet cards was finalised and approved in the 69th, 70th & 71st NRPC and scheme was prepared and sent to NCT for approval by CTU.
- A.12.4 Regarding the expansion SAS gateways/ RTUs ports, POWERGRID has provided additional cost implication as existing SAS gateways ports are not expandable or upgradable. Similarly, new procurement of RTUs shall be required where expansion of ethernet ports is not possible. This cost includes supply, installation and services for installation of new SAS gateways and RTUs. POWERGRID has provided this cost based on inputs received from SAS/RTU OEMs e.g. ABB, GE, Siemens,

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Synergee etc. List of substations sub-region wise i.e. NR-I, NR-II & NR-III are attached at **Annexure-XVIII**.

A.12.5 Summary cost for Northern Region is given below:

Summary of SAS/ RTU upgradation				
Sr. No.			Rate per station (Cr.)	Amount in Crores
1	Total SAS based stations	56	1.5	84.0
2	Total RTU based stations	8	0.3	2.4
Grand Total				86.40

A.12.6 In view of above, he proposed the scheme as below:

Scheme Name: Dual reporting of SCADA Channels (RTU/SAS) to NRLDC and Back up NRLDC

Scope: Upgradation/ Replacement of SAS gateways at 56 no. and RTUs at 8 nos ISTS sub-stations in Northern Region

Estimated Cost: **Rs. 86.40 crore (approx.) (excluding taxes and duties)**

Implementation Mode: **RTM**

Implementation Agency – **POWERGRID**

Schedule of installation – **12 months from the date of allocation**

A.12.7 Further, He added that scheme to be put up in NCT for approval after RPC views.

A.12.8 CGM, NRLDC mentioned that to provide more redundancy of data for grid operation purpose, this arrangement is required.

A.12.9 Director, UPSLDC suggested that main channel may report to both main and backup RLDCs and backup channel may be used only for backup RLDC.

A.12.10 MS, NPC stated that there is need to check the guidelines/Regulations of communication.

A.12.11 EE (C), NRPC raised the concern of less participation of STUs in the TeST meeting.

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A.12.12 MS, NRPC recommended that detailed deliberation is needed to be done in the upcoming TeST meeting after viewing the status of each RPC along with a comprehensive approach to planning.

NRPC Deliberation

Forum was in consonance of deliberation held in the TCC meeting and directed to discuss the matter first in TeST meeting.

Decision of Forum

Due to concerns over list of substations, requirement of dual reporting of SCADA channels to backup RLDC and status of implementation of the same in other regions, the matter was referred to TeST sub-committee of NRPC for deliberation with a comprehensive approach to planning.

A.13 Fibre Sharing on STU links for redundant communication to ISTS Nodes (Agenda by CTU)

TCC Deliberation

A.13.1 CTU/IL representative apprised that as per MOM of 23rd NRPC TeST Meeting CTU/IL was advised to write letters to PTCUL, HPPTCL, JKPTCL & UPPTCL to get consent on 3 pairs of fiber sharing on STUs fiber network to provide redundant communication to following ISTS nodes:

“Narora (NPCIL), Saharanpur (PG), Pithoragarh (PG), Sitarganj (PG), Chamera-III (NHPC), Budhil (GreenCo), Alusteng(PG), Drass(PG), Kargil(PG), Khalasti(PG), Leh(PG)”

A.13.2 HPPTCL has provided their consent to CTU vide letter dtd. 01.02.24, however we have not received consent from PTCUL, JKPTCL & UPPTCL.

A.13.3 This issue was also deliberated in the 24th TeST meeting wherein JKPTCL was not present. PTCUL & UPPTCL were requested to provide their confirmation in line with the HPPTCL letter. It is pertinent to mention that earlier PTCUL has agreed only for bandwidth sharing and not fiber sharing. PTCUL was asked to review their consent for fibre sharing as it would be better for ULDC data communication. PTCUL agreed to confirm the same after discussing with their management. However, we have not received any confirmation in this regard.

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- A.13.4 UPPTCL, PTCUL & JKPTCL were requested to provide their consent for sharing of 3 pairs of fibres from their network so that redundant communication for the important ISTS nodes may be established.
- A.13.5 He mentioned that STU wise fiber sharing requirement has been summarized on **Annexure-XIX**.
- A.13.6 States raised the concern over commercial aspects. UPPTCL asked CTU revenue model for fibre sharing. CTU stated that this fiber sharing is required only for grid operations and no commercial applications shall be used.
- A.13.7 PTCUL representative desired to have a uniform fibre sharing policy for such cases for grid operation.
- A.13.8 MS, NPC informed that Fiber sharing policy is being framed by CEA.
- A.13.9 MS, NRPC highlighted that there is need of fibre sharing for the grid operation and smooth functioning.

NRPC Deliberation

- A.13.10 MD HVPNL and Chairperson NRPC advised that after deliberation in the sub-committee meeting, the agenda may be discussed again. He further added that IT and communication are playing a vital role in the field of Power System. Therefore, meticulous planning is to be done.

Decision of Forum

Agenda was deferred in view of lack of clarity on commercial aspects of fibre sharing for grid operation. Forum also recommended to re-examine the matter considering the CERC and State Regulatory Commission guidelines. Matter may be brought after formulation of fiber sharing policy by CEA.

- A.14 Notification of Procedures on “Centralized supervision for Quick fault detection and restoration of Communication System” and “Maintenance & Testing of Communication System” By CERC in Jan’2024 (Agenda by CTUIL)**

TCC Deliberation

- A.14.1 CTUIL representative apprised that Hon’ble CERC vide order dated 19.01.2024 notified Procedures on “Centralized supervision for Quick fault detection and restoration of Communication System” and “Maintenance & Testing of Communication System”.

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- A.14.2 The Procedure addresses the ISTS Communication System supervision through CSMS which is being implemented through the UNMS scheme in a regional manner. The UNMS project has been implemented in two regions (NER & NR) and shall be shortly implemented in ER, SR-UNMS has been awarded in Jan '24 and WR-UNMS has been tendered in Jan'24. National UNMS shall be implemented subsequently while integrating all regional UNMS.
- A.14.3 STUs/ISTS users are directed to start using the UNMS system as per the existing practices as applicable.
- A.14.4 CTUIL representative also informed that as per the CERC Communication Regulation 2017, and CEA (Technical Standards for Communication System in Power System Operations) Regulations, 2020, day to day operations of UNMS/CSMS for centralised supervision & monitoring of ISTS fall under the jurisdiction of RLDCs. This also includes the collection and submission of performance/availability data of configured communication channels by RLDCs to respective RPC for computation of availability of the communication system. The matter is being taken up with Honb'le CERC.
- A.14.5 CGM, NRLDC emphasized the need to highlight the procedures in the sub-committee meetings to make all aware.

NRPC Deliberation

Forum noted the information.

Decision of Forum

Forum advised to sensitize sub-committee members in next TeST sub-committee meeting of NRPC.

- A.15 Establishment of State-of-the-Art National Unified Network Management System (N-UNMS) in main & backup configuration integrating all the Regional UNMS for ISTS Communication System (Agenda by CTUIL)**

TCC Deliberation

- A.15.1 CTUIL representative apprised that In line with CERC, CEA Regulations and RPC approvals, the Regional UNMS scheme integrating ISTS communication system along with State sector network, is being deployed in each region.

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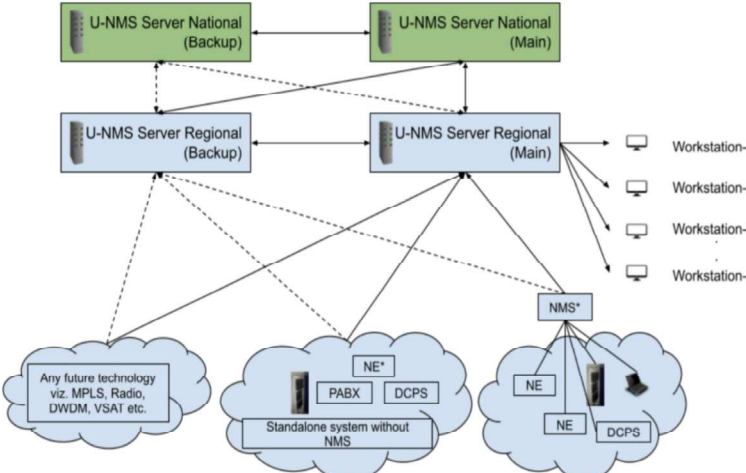
- A.15.2 Further, he mentioned that now, all five (5) Regional UNMS servers shall be integrated in the next layer to the National UNMS server integrating all the regional ones; in main & backup configuration.
- A.15.3 This will facilitate centralized reporting/collection of PAN India communication Network of ISTS as well as State level system including cross border links at National Level. The scope & technical aspect of the National UNMS scheme shall be broadly in line with Technical Specification of Regional UNMS while including features for National aspects, as per the deliberations held in all RPC/NCT forums.
- A.15.4 The scheme for National UNMS was deliberated in all RPC forums earlier during deliberation of respective Regional UNMS projects. Further, the National UNMS scheme was also deliberated in the 14th NPC meeting held on 03.02.2024 in Bangalore.
- A.15.5 CTUIL put up here for views of RPCs before taking up the scheme to NCT forum for final approval.

S. No.	Items	Details
1.	Name of Scheme	Establishment of State-of- the-Art National Unified Network Management System (N-UNMS) in main & backup configuration integrating all the regional UNMSs.
2.	Scope of the scheme	<ul style="list-style-type: none"> ● Supply and Installation of Main & Backup National-UNMS system hardware and software along with associated items at respective UNMS Centres. The new system shall be deployed in such a way that the operation of the existing systems should not be disturbed. ● Supply and Installation of hardware & software for workstation, network switches, firewall & IDPS, Printer, Furniture etc. ● Integration of existing Regional UNMS (In Main & Backup config) with Main and Back up N-UNMS System. One channel of each Regional UNMS to Main and Back up UNMS centre shall be used for redundancy of respective UNMS Centres. ● Development of complete Database, displays and reports either from scratch or by extracting existing database, displays and reports, also for creating integrated national communication system overview and inter regional system

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S. No.	Items	Details
		<p>details for the modules.</p> <ul style="list-style-type: none"> ● Supply of all FCAPS features with advance planning tool. ● Import and Adaption of database & displays made for Regional UNMS system including import of historical data stored in existing servers for integration in new system also for creating national dashboard and inter regional system dashboards for the required system details. ● Auxiliary Power Supply System Comprising of UPS with Battery set along with all necessary distribution board. ● Integration & Testing with any new UNMS coming up during implementation and AMC period of this Project. ● Supply of Spares identified under AMC along with main items to meet the contingency during installation period and during AMC period. ● All cabling, wiring, and interconnections to the items being supplied and to be integrated including power supply. ● The project scope shall include customization of its database, such as configuration of database, scan period and all other database parameters required to integrate existing system successfully. ● Additional Hardware, software and services necessary to ensure compatibility with existing equipment. ● Auditing of Cyber Security implementation by CERT-In listed Auditors during AMC & ensuring its compliance. ● Training of personnel and Users of the System. ● Comprehensive Maintenance of the supplied system for seven (7) years including one (1) year defect liability period as per specification, including integration with future UNMS (if any), Database configurations, Maintaining Spare inventory etc. ● Integration with third party Applications: The N-UNMS Systems being supplied shall have

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S. No.	Items	Details
		<p>provision to exchange data with the existing and or to be purchased third party applications of in standard formats like ODBC, OPC & XML etc.</p> <ul style="list-style-type: none"> ● GI/Aluminium cable trays/trace ways with covers shall be supplied in the project for laying cables so that cable can be protected from rodents. These cable trays/trace ways shall be screwed/ fixed on the floor. ● The system shall have remote console along with connectivity and shall be under AMC for; CEA-PCD & NPC Division, NLDC- Grid India, CTUIL, GA&C- POWERGRID. Additionally, UNMS control room in CTUIL shall be equipped with a 85 Inch TV/Monitor.
3.	Architecture	 <p>The diagram illustrates the proposed U-NMS topology for data flow. It features a hierarchical structure of servers and network elements. At the top level, there are two U-NMS Server National units: a Backup (green box) and a Main (green box). Below them are two U-NMS Server Regional units: a Backup (blue box) and a Main (blue box). The National Main server is connected to both Regional servers. The Regional Main server is connected to three workstations (Workstation-1, Workstation-2, Workstation-3, and Workstation-n). The Regional Main server is also connected to three network clouds. The first cloud contains 'Any future technology viz. MPLS, Radio, DWDM, VSAI etc.'. The second cloud contains 'NE*', 'PABX', and 'DCPS', labeled as a 'Standalone system without NMS'. The third cloud contains 'NE' and 'DCPS', labeled as 'NMS*'. Dashed lines indicate backup connections between the National Backup server and the Regional Backup server, and between the Regional Backup server and the Regional Main server.</p> <p style="text-align: center;">Proposed U-NMS Topology for Data Flow (Typical)</p>
4.	Objective / Justification	<p>i. In line with CERC, CEA Regulations and RPC approvals, the Regional UNMS scheme integrating ISTS communication system along with State sector network, is being deployed in each region. Now, all five (5) Regional UNMS servers shall be integrated in the next layer to the National UNMS server integrating all the regional ones; in main & backup configuration. This will facilitate centralized reporting/collection of PAN India communication Network of ISTS as well as Intra State level system including cross border links at National Level. The scope & technical aspect of the National UNMS scheme shall be broadly in line with Technical</p>

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S. No.	Items	Details
		<p>Specification of Regional UNMS while including features for National aspects, as per the deliberations held in all RPC/NCT forums.</p> <p>ii. The proposed National UNMS (N-UNMS) System shall provide the multi-tiered solution for Network Management System Functions with modules such as Network Resource/Discovery/Inventory, configuration management, Planning, Fault/Alarm Management, Performance Management, Trouble Ticket with application security, reporting, simulation, Artificial Intelligence & Analytics etc and common dashboards also for integrated national network and for inter-regional systems including cross border.</p> <p>iii. The N-UNMS shall also provide a Pan India visualization of power system communication network. This shall facilitate Centralized Supervision and Quick Fault detection and restoration for ISTS Communications systems for National, Inter-Regional and Cross-Border communication system and the network. The N-UNMS shall additionally have advanced planning tool having features for Long, Medium- & Short-Term Planning for preparing planning projections for ISTS Communication System (for National/ Regional/ State) for 2 years, 5 years and 10 years.</p> <p>iv. The proposal of N-UNMS was deliberated in all the RPCs during approval of respective Regional UNMS scheme and the in-principle technical approval has been given by the forum. The relevant extract for NR is attached as Annexure-XX and the Minutes of 15th NCT meeting is also attached as Annexure-XXI.</p>
5.	Estimated Cost	<p>Rs. 101* CRs. (approx.) and 19.07 CRs. AMC charges for 7 years. The cost of national UNMS shall be recovered on POC basis.</p> <p>*Cost has been derived from awarded package of regional UNMS Scheme.</p>
6.	Implementation timeframe	24 Months from date of project allocation based on NCT approval.

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S. No.	Items	Details
7.	Implementation Mode	Through RTM to POWERGRID
8.	Location of National UNMS	Main UNMS at NLDC, Katwaria Sarai, and Backup UNMS at RLDC, Kolkata

- A.15.6 POWERGRID and NRLDC representatives raised the issue regarding space constraint for Main UNMS at NLDC, Katwaria Sarai, and Backup UNMS at RLDC, Kolkata and asked CTUIL to plan well in advance in consultation with respective LDC.
- A.15.7 Chairperson, TCC highlighted that NR-UNMS has already been commissioned with AMC of 7 years. N-UNMS will also be implemented with same tenure of AMC. Since, N-UNMS is still in planning stage, there will be considerable gap in end of AMC period of both UNMS.
- A.15.8 EE (C), NRPC suggested that the AMC period of Regional NMS may be matched with NUNMS AMC.
- A.15.9 MS, NRPC advised that technology and time frame of N-UNMS may be planned such that UNMS of all regions may be synced appropriately.
- A.15.10 CTU representative conveyed that as per CERC tariff regulation 2024-29, depreciation of such systems has been considered as per useful life of 7 years. However, after this period such systems are managed as per industry practice, in line with RPC deliberations at that point of time. CTU representative also submitted that best efforts shall be taken to minimize time for implementation of the National UNMS system and requested for approval of National UNMS to avoid further mismatch of regional & national schemes.

NRPC Deliberation

Forum concurred the deliberation held in the TCC meeting.

Decision of Forum

CTU was advised to explore whether AMC of NR-UNMS can be extended till end of AMC of N-UNMS, so that N-UNMS useful life could be fully utilised in NR. Accordingly, CTU may put agenda in upcoming meeting for approval.

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM**A.16 Capacity Building Programme for Northern Regional Constituents through PSDF****Fund (Agenda by NRPC Secretariat)****TCC Deliberation**

- A.16.1 EE (P), NRPC apprised that DPR for PSDF grant was approved in 71st NRPC meeting held on 29.01.2024 at an estimated cost of INR 7,61,73,720/- (including GST) for three batches of 20 officers each. However, POWERGRID has revised the cost estimate vide their letter dated 26.02.2024.(**Annexure-XXII**)
- A.16.2 Accordingly, revised DPR (**Annexure-XXIII**) was put up for approval at an estimated cost of INR 10,06,89,000/- (including GST) for three batches of 20 officers each.
- A.16.3 EE (P), NRPC also mentioned that CAG audit has observed non-compliance over the training.
- A.16.4 He further added that Programme has been completed in other RPCs and Proposal was already approved in 71st NRPC meeting.
- A.16.5 MS, NPC informed that PSDF fund is not available till Mar 2025.

NRPC Deliberation

Forum was in line with TCC discussion and approved the DPR.

Decision of Forum

Forum approved the revised DPR and recommended for sending DPR to PSDF Nodal Office.

A.17 Regional Level Disaster Management Group (RDMG) of Northern Region (Agenda by NRPC Secretariat)**TCC Deliberation**

- A.17.1 EE (P), NRPC apprised that Central Electricity Authority has prepared a Disaster Management Plan (January 2021) for Power Sector wherein, a four-tier structure has been put in place at Central, Regional, State and Local Unit Level, with intervention and response depending on the severity of the disaster /calamity for effectively dealing with disaster situations in power sector and fulfilling the responsibilities as per section 36 of the Disaster Management Act 2005.

As per above Disaster Management Plan (January 2021), the Regional Level Disaster Management Group (RDMG) has composition as below:

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- a) Member Secretary (RPC) – Chairman
- b) Representative of Secretary in-charge of Rehabilitation and Relief of the affected State of the Region
- c) Representatives of each State Civil Defence
- d) Regional HODs CPSUs (NTPC, NHPC, PGCIL etc.)
- e) CMDs State TRANSCOs/Power Departments
- f) SLDC in charge of each state.
- g) Chief Engineer, Central Water Commission (CWC), for floods related early warnings.
- h) Deputy Director-General, Indian Metrological Department (IMD), for Earthquake, and Cyclone related early warnings.
- i) Group Head, Ocean Information and Forecast Services Group (ISG), for Tsunami related early warnings.
- j) Head of RLDC

A.17.2 The agenda was discussed in 69th NRPC meeting held on 27.09.2023 wherein utilities were sensitized on the structure and role of RDMG. As per decision in the meeting, a letter dated 19.12.2023 (**Annexure-XXIV**) was issued by Member Secretary, NRPC for nomination of members from states.

A.17.3 Nominations received as on dates is attached as **Annexure-XXV**.

A.17.4 MS, NRPC requested all to send the nominations from the concerned entities. Accordingly, first meeting to sensitize the disaster management plan of RDMG group may be held soon. A reminder letter will also be sent in this regard.

NRPC Deliberation

Forum noted the received nominations.

Decision of Forum

Forum recommended that members may kindly pursue the concerned departments to avail the required nominations at the earliest so that the 1st meeting of Regional Level Disaster Management Group (RDMG) of Northern Region may be planned in 3rd or 4th week of April, 2024.

A.18 Non availability of meter data and delay in replacement of Faulty Meters at multiple stations in NR (Agenda by NRPC Secretariat)

TCC Deliberation

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A.18.1 EE (C), NRPC apprised that as per clause 49(12(e) of IEGC 2023:

"Entities in whose premises the IEMs are installed shall be responsible for

- (i) monitoring the healthiness of the CT and PT inputs to the meters,*
- (ii) taking weekly meter readings for the seven-day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility*
- (iii) monitoring and ensuring that the time drift of IEM is within the limits as specified in CEA Metering Regulations 2006 and*
- (iv) promptly intimating the changes in CT and PT ratio to RLDC".*

A.18.2 He added that NRLDC informs about the meter discrepancies to every entity on a weekly basis via e-mail and the weekly discrepancy report is also published on the NRLDC website. However, no response (or) delayed response is received from utilities in resolution of these meter issues.

A.18.3 Details of current ongoing meter related issues which are yet to be resolved has been provided in **Annexure-XXVI**. Entities are requested to provide the reason as to why these issues still being pending even after multiple communications. The delay in replacement of a faulty meter has led to complications in meter data validation and related processes.

A.18.4 The agenda was taken up in 49th Commercial Sub-Committee meeting of NRPC held on 11th March, 2024. As per decision taken in the meeting, following was proposed:

- a. In order to streamline the process of meter replacement, CTU was requested to make a SOP for meter installation and replacement covering timelines, responsibilities for reporting faulty meters, replacement timelines, and standardized charges and payment plans.
- b. STU is urged to promptly address the replacement of faulty meters listed in **Annexure-XXVI** as there was low participation from STUs in 49th CSC meeting.

A.18.5 EE (C), NRPC mentioned that there are large no. faulty meters in BBMB. BBMB is having correspondence with their higher management for early replacement of faulty meters. BBMB informed that based on CTU standardization of charges of meter replacement, BBMB is ready to replace.

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- A.18.6 CGM, POWERGRID highlighted that in spite of timely meter replacement of faulty meters, POWERGRID is not getting payment which causing audit concerns for them continuously.
- A.18.7 HVPNL representative mentioned that there is different price of meter replacement in state with respect to POWERGRID.
- A.18.8 CTUIL representative stressed that aim for meter installation should not be defeated as it reflects in commercial aspects i.e. energy accounting.
- A.18.9 There were concerns about time line mentioned in the SOP drafted by CTUIL.
- A.18.10 MS, NRPC emphasized that SOP needs to redrafted based on views of STUs, POWERGRID and CTUIL along with CEA guidelines.

NRPC Deliberation

Forum agreed with the decision taken in the TCC meeting.

Decision of Forum

Forum decided that Draft SOP for meter installation prepared by CTU will be shared by CTU with all STUs, transmission licensees, and Intra-State generators of NR for seeking comments. Comments to be furnished within 30 days and to be deliberated in a separate meeting with all stakeholders. Recommendations of meeting to be referred to RPC forum for approval of SOP.

A.19 Notification of CERC (Terms and Conditions of Tariff) Regulations, 2024 (Agenda by NRPC Secretariat)

TCC Deliberation

- A.19.1 EE (C), NRPC apprised that CERC has notified the CERC (Terms and Conditions of Tariff) Regulations, 2024 on 15.01.2024 (copy enclosed at **Annexure-XXVII**). These regulations shall come into force on 01.04.2024.
- A.19.2 These regulations shall apply to all cases where tariff for a generating station or a unit thereof and a transmission system or an element thereof is required to be determined by the Commission under section 62 of the Act read with section 79 thereof.
- A.19.3 He further highlighted that it is necessary for all the utilities to go through this regulation notified by CERC.
- A.19.4 Members acknowledged the same and were requested for compliance.

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Forum noted the CERC (Terms and Conditions of Tariff) Regulations, 2024 for compliance.

Decision of Forum

Forum noted the CERC (Terms and Conditions of Tariff) Regulations, 2024 for compliance.

A.20 Unified Accounting Software (UAS) for RPCs (Agenda by NRPC Secretariat)**TCC Deliberation**

A.20.1 EE(C), NRPC apprised that in a meeting held in CEA on 20.11.2023 (MoM enclosed at **Annexure XXVIII.A**) regarding implementation of Unified Accounting Software (UAS) in RPCs under chairmanship of under Member (GO&D), CEA, following decision were taken:

- a) A Unified Accounting Software of all RPCs will be developed.
- b) ERPC shall be the Nodal RPC for implementation of the UAS.
- c) A Joint-Committee shall be formed by NPC with representatives from all RPCs, and GM Division and NPC Division with ToR as follows:
 - i. Hiring of consultant for preparation of DPR.
 - ii. Identifying possible source of funding, i.e. PSDF or RPC funds.
 - iii. Preparation of NIT and other documents related to tendering.
 - iv. Selection of vendor for the UAS.
 - v. Execution of work order and certification of completion of works.
 - vi. Recommend on O&M/ AMC/ownership of project.

A.20.2 In the 14th meeting of NPC held on 03.02.2024 (extract of MoM enclosed at **Annexure XXVIII.B**), following were decided:

- a) Standard Output formats of various Energy Accounts were finalized. The same are enclosed at **Annexure XXVIII.C**. After implementation of Unified Accounting Software, energy accounts will be published in these standardized formats.

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- b) Representation from NTPC and one states from each region also be taken in the Joint-Committee.
- c) ToR of committee shall be modified considering may be revised considering the National Energy Account, provisions of migrating to 5 min scheduling and for carrying out required changes in UAS post implementation of the UAS.
- d) The DPR may be submitted to nodal agency i.e. NLDC for PSDF funding. The cost for hiring of consultant and preparation of DPR will be shared equally by all RPCs.

Members noted the information.

NRPC Deliberation

MS, NRPC apprised the forum that Chairperson, CEA assured in 14th NPC meeting that he will try to arrange required fund for this project from PSDF fund and Unified Accounting Software will be developed.

Decision of Forum

Forum noted the information.

- A.21 Replacement of various size of ACSR conductor (i.e. wolf/ panther/ zebra/ moose) with equivalent HTLS conductor to reduce the overloading of existing transmission lines thereby improving the reliability of power system in Haryana. (Agenda by HVPNL)**

TCC Deliberation

- A.21.1 EE (P) apprised that the HVPNL proposal for 31 No. existing overloaded transmission lines for augmentation with HTLS conductor through PSDF funding was submitted to NRPC to recommend for grant of PSDF.
- A.21.2 The agenda was deliberated in 68th NRPC meeting held on 18.8.2023 (relevant minutes attached as **(Annexure-XXIX)** and decision of the NRPC Forum is reproduced as below:

“Forum accorded in-principal approval to proposal of HVPN for replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor. HVPN was requested to approach CEA for technical evaluation

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and accordingly, DPR for PSDF may be put up for approval of NRPC in upcoming meetings”.

A.21.3 The detailed proposal of 31 No transmission lines for augmentation with HTLS conductor through PSDF funding was submitted to Central Electricity Authority (CEA) vide letter dated 25.08.2023 and additional 66KV D/C Daultabad-Sec 10 Gurugram transmission line vide letter dated 13.09.2023. After detailed deliberations and meeting held on dated 15.09.2023, wherein CTU and Grid India were also present, CEA concurred the proposal for augmentation with HTLS conductor of 28 No transmission lines vide ref No. File no. CEA-PS-11-22(13)/1/2019-PSPA-I Division dt 15.11.2023 (**Annexure-XXX**).

A.21.4 Accordingly, HVPNL proposal for 28 No. existing overloaded transmission lines for augmentation with HTLS conductor through PSDF funding was submitted to NRPC to recommend for grant of PSDF. The agenda was deliberated in 70th NRPC meeting held on 17.11.2023 & 18.11.2023 (relevant minutes attached as (**Annexure- XXXI**) and decision of the NRPC Forum is reproduced as below:

“Forum approved DPR for re-conductoring proposal of 28 nos. of lines to be implemented by PSDF fund.”

A.21.5 Now CEA concurred the proposal for augmentation with HTLS conductor for following additional 03 No transmission lines vide ref No. File no. CEA-PS-11-22(13)/1/2019-PSPA-I Division dt 20.02.2024 (**Annexure-XXXII**).

- i. Replacement of existing conductor ACSR Wolf Conductor of 66 KV D/C line from 220kV s/stn Badshahpur -66 kV S/stn Sohna with HTLS Conductor (600 Amp).
- ii. Augmentation of 132 kV Kaithal-Khanpur Line having Panther ACSR conductor with HTLS conductor equivalent to 0.2 sq" ACSR conductor (600 Amp).
- iii. Augmentation of 220 kV Samaypur-Palli line with Zebra ACSR conductor to HTLS conductor (1200 Amp).

A.21.6 Accordingly Detailed Project Report is placed at **Annexure-XXXIII**.

A.21.7 The replacement of existing ACSR conductors of above mentioned additional 3No transmission lines with equivalent HTLS conductor of higher current carrying

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capacity is the best possible solution to reduce the overloading of existing lines thereby providing reliable power to the consumers of these regions of Haryana.

A.21.8 In view of above facts, it is observed that augmentation of transmission lines is for Power System strengthening & improvement. Therefore, the work is eligible for 100% funding from PSDF and NRPC forum may consider and recommend the proposal for PSDF grant.

A.21.9 HVPNL representative informed that all 31 lines are to be implemented combinedly.

A.21.10 MS, NRPC appreciated that above HVPNL proposal will result in overall system strengthening and requested forum for approval under PSDF fund.

NRPC Deliberation

A.21.11 Forum agreed with the decision taken in the TCC meeting and approved the DPR for re-conductoring proposal of 31 nos. of lines to be implemented by PSDF fund.

Decision of Forum

In concurrence to CEA, Forum approved the DPR for re-conductoring proposal of 31 nos. of lines to be implemented by PSDF fund.

A.22 Issues pertaining to grid operation in Rajasthan state control area (Agenda by NRLDC)

TCC Deliberation

A.22.1 NRLDC representative apprised that a meeting was recently convened at NRPC on 20.02.2024 to review frequent outage of Grid elements in Rajasthan and problems being faced in evacuation of power from RVUNL Power Stations. number of issues were discussed in the meeting and action points were also decided in the meeting.

A.22.2 Some of the major issues which require deliberation at NRPC level are listed below:

a) Frequent tripping of line and maintenance issues due to forest area

During the meeting held on 20.02.2024,

- NRLDC raised concern regarding frequent tripping of transmission lines from RAPP(A) and RAPP(B) and maintenance work being done for these lines by RVPNL. He also enquired about the remedial actions taken in view of

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trippings of KTPS & RAPS generation complex on 05.01.2024 and poisoning out of the nuclear reactors.

- Chief Engineer, SLDC Rajasthan informed that all these lines from RAPS where frequent trippings were observed were passing through forest area of Chambal region and workmen of contractor assigned to carry out the work were dissuaded from carrying out any tree pruning works by the forest rangers.
- SLDC has asked concerned Zonal Chief Engineer to prepare patrolling program which will be monitored by SLDC and may also be monitored through NRPC forum. He assured that actions are being taken at SLDC & STU to level to carry out proper maintenance work of lines in this area.

A.22.3 Even after the meeting, it is being observed that the lines are continuously tripping during night time as shown below.

S. No.	Name of line	Outage Date & Time		Revival Date & Time	
		Date	Time	Date	Time
1	220 KV RAPS_A(NP)- Sakatpura(RS) (RS) Ckt-1	02-03-2024	23:10	02-03-2024	23:42
2		03-03-2024	23:39	04-03-2024	00:26
3		14-03-2024	03:32	14-03-2024	11:43
4	220 KV RAPS_A(NP)- Sakatpura(RS) (RS) Ckt-2	23-02-2024	05:08	23-02-2024	06:15
5		01-03-2024	01:21	01-03-2024	02:17
6		01-03-2024	06:35	01-03-2024	07:50
7		07-03-2024	08:50	07-03-2024	10:02
8	220 KV RAPS_B(NP)- Sakatpura(RS) (RS) Ckt-1	12-03-2024	04:49	12-03-2024	06:23
9		13-03-2024	03:32	13-03-2024	05:03

A.22.4 It was requested that RVPN may expedite their measures and take up the matter with forest officials and carry out maintenance of the lines to avoid frequent tripping.

A.22.5 Rajasthan SLDC representative conveyed that tree pruning is being done in coordination with Forest Rangers and RVPNL. Patrolling is being done. Further, the issue of Bird beet from Vultures has also come to notice which is being addressed.

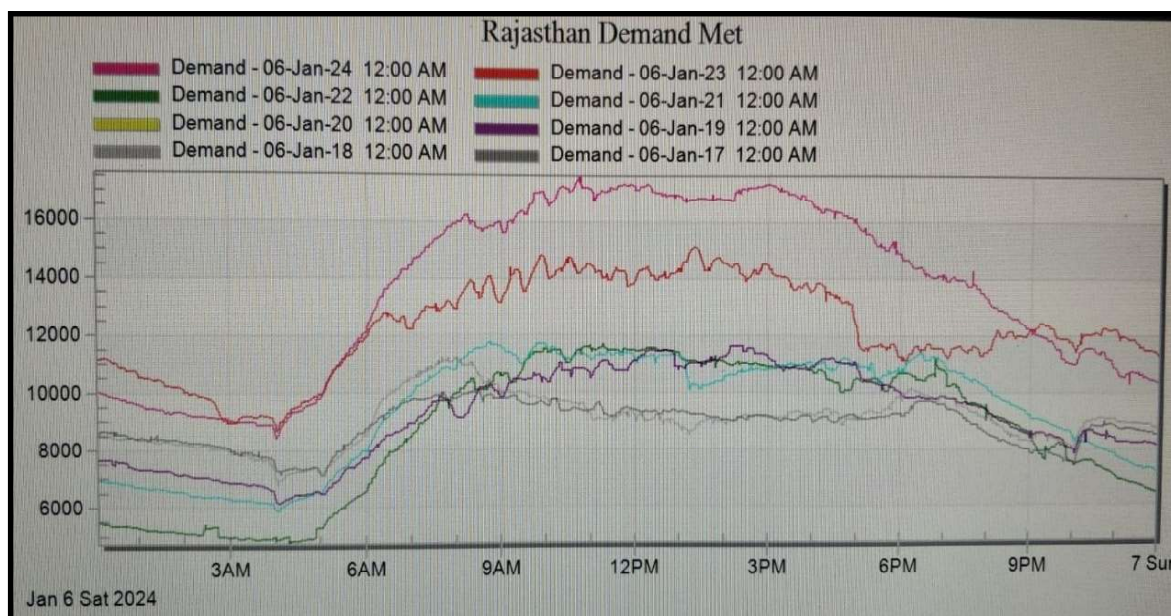
A.22.6 SE(O), NRPC mentioned the comments of inspection report of committee visited Rajasthan. He highlighted that lines are in very poor condition for continuous operation as the summer is approaching. Further, He stated that spacers, conductor health were not in proper condition. He directed Rajasthan to increase the frequency of maintenance activities and precautionary measures.

A.22.7 It was agreed that more patrolling, tree pruning and follow up needs to be taken.

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A.22.8 From the data available at NRLDC, it is being observed that the loading of almost all 400/220kV substations (intrastate) in Rajasthan is beyond their N-1 contingency limit during day-time. Such situation has led to load loss in particular area of N-1 non-compliance apart from possibilities of major grid disturbance in Rajasthan control area.

A.22.9 Moreover, from the data at NRLDC & past discussions in OCC, it is seen that there has been considerable shifting of load in day-time by Rajasthan.



A.22.10 From the graph above, it can be clearly seen that there has been considerable increase in demand of Rajasthan during day time for last 2 years (sample day of 6th Jan chosen) and load is being shifted to daytime which has led to critical operation of Rajasthan grid as 400/220kV ICTs augmentation is yet to take place and pending for last several years.

During the meeting held on 20.02.2024,

- SLDC representative requested that if Govt. directions come for supply from 2 to 3 blocks then temporarily solution can be reached.
- MS(NRPC) stated that Rajasthan may approach their higher officials for allowing supply from 2 to 3 blocks at least at N-1 constrained substations.

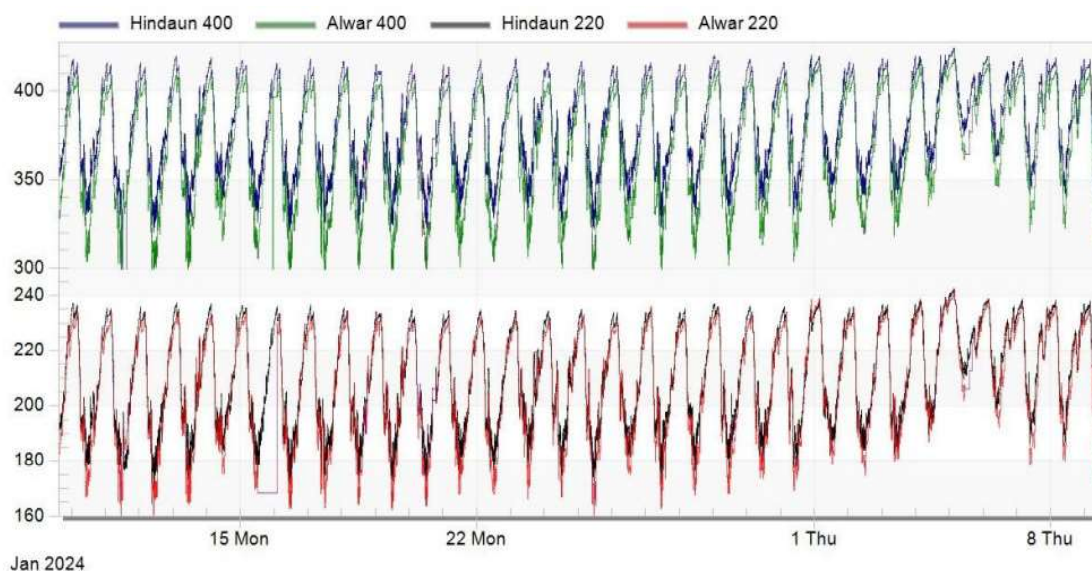
A.22.11 As requested earlier, Rajasthan SLDC was requested to take up the matter with Rajasthan DISCOM, STU and higher management and highlight the critical situation of Rajasthan grid. Further, it is suggested that quick decisions are taken w.r.t. supply hours till capacity augmentation is completed at severely loaded substations.

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- A.22.12 Rajasthan SLDC representative conveyed that as per Government of Rajasthan budget announcement, it has been directed to meet agriculture load in 2 blocks (6 to 12 hrs and 12 to 18 hrs). SPS has been implemented for 6 schemes. Procurement of 11 number of ICT is under process and will take 18 months. Radial load of 400 kv Alwar from Hindaun is being met which is leading to severe low voltage in Alwar and Hindaun.
- A.22.13 Issue of low voltages which will be present during summer months was once again highlighted from NRLDC side.
- A.22.14 Issue of poor state of 400 KV Bhadla(RJ)-Bikaner(RJ) D/C line was highlighted and a committee was formed to analyze its issue and suggest measure to minimize its trippings. The committee has submitted its report. SLDC Rajasthan also stated that estimates for repair of this line has been prepared and will be put up to management for consideration.
- A.22.15 NRLDC representative also highlighted that capacitor banks are needed to be installed.
- A.22.16 It was stated by SLDC Rajasthan that capacitor bank installation through PSDF funding has been rejected due to lack of funds.
- A.22.17 Member Secretary, NPC division of CEA suggested that SLDC Rajasthan can explore RDSS scheme for its funding similarly like Uttarakhand which has done it successfully recently.
- A.22.18 SLDC Rajasthan agreed that the matter will be taken through RDSS after management approval.

c) Generation at Dholpur TPS

- A.22.19 Various letters and emails from NRLDC Control room have been given to Rajasthan SLDC highlighting the low Voltage issues at Hindaun, Alwar and Dholpur and requesting the running of Dholpur units to improve the Voltage profile.
- A.22.20 Same was also discussed and agreed in 48TCC & 70NRPC meeting held on 17-18 Nov 2023, however still Dholpur units are not running in real-time and as a result, very low voltages are being observed in 400kV Hindaun & Alwar.

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A.22.21 NRLDC requested that till the time additional connectivity or upgradation of Dholpur 220kV to 400kV is done, Dholpur generation may be brought on bar by Rajasthan.

A.22.22 SLDC Rajasthan agreed that Dholpur unit will be brought in service due to low voltage issues near Alwar, Hindaun and nearby areas.

A.22.23 Senior management has been apprised about it with the request to approve running of Units in Dholpur soon.

A.22.24 MS, NPC, CEA enquired whether Dholpur unit can be operated through RRAS. SLDC Rajasthan stated that firm linkages are not there for Dholpur.

d) Telemetry issues in Rajasthan state control area

A.22.25 Analog as well as Digital data of from many Rajasthan Stations is not reliable. Matter had been taken up in 24th TEST meeting. Major issues of telemetry data at 400 KV Heerapura, Hindaun, Ratangarh, Bhilwara and Phagi lines have been reported. Furthermore, at some places isolators are open.

During the meeting held on 20.02.2024,

- Chief Engineer SLDC informed that the stations are SAS based and the AMC is to be awarded, the matter has been taken up with STU. He also informed there is OEM issue and location wise different make of SAS are in service i.e. Alstom, ABB, Siemens etc. It was informed that cards are not available and firmware updation is required.

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- RVPNL representative stated that it was yet to be decided if work is to be awarded on proprietary basis or through competitive bidding. It was further informed that they have raised the issue with their management on multiple occasions.

A.22.26 Data availability is of utmost importance in view of visibility of RE pocket in Rajasthan and critical operation of Rajasthan grid. STU and SLDC representatives should sit together to resolve the issue as Control Rooms can work efficiently only when they receive telemetry data.

A.22.27 No AMC at present for SAS based stations and issue is being taken with STU to resolve the issue as stated by SLDC Rajasthan and it is being pursued.

NRPC Deliberation

A.22.28 Forum concurred the deliberation held in the TCC meeting.

A.22.29 MD, HVPNL and Chairperson NRPC asked Rajasthan to hold a meeting in order to resolve all the matter for smooth operation of Grid. MD, RVPNL agreed for the same.

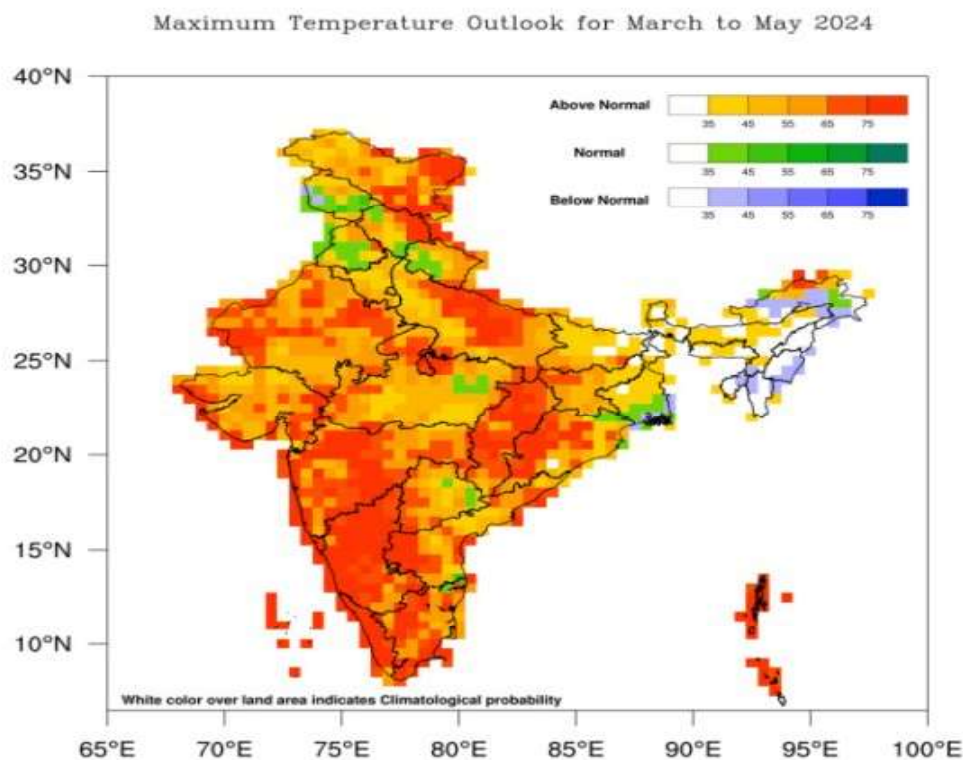
Decision of Forum

Rajasthan was requested to expedite their actions to the issues raised by NRLDC.

A.23 Actions for improvement in grid operation (Statewise) (Agenda by NRLDC)

TCC Deliberation

A.23.1 NRLDC representative apprised that most of the NR states recorded their maximum demand met and maximum energy consumption during the year 2023-24. Moreover, this maximum demand and energy consumption were generally reported in Summer/ monsoon months. With the increase in temperature, demand of Northern Region starts increasing from March onwards every year. IMD (India Meteorological Department) has forecasted above normal heat during Apr-Jun months in upcoming summer months. The IMD has predicted normal to above normal temperatures in most parts of the country as shown below:

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- A.23.2 Summer of Northern region are typically hot and demand is also high during this time, therefore advance actions help in better grid operation. There has been continuous growth over the years. This year already Northern region energy consumption has been higher by 9% & 4% in January & February respectively compared to previous year. With this growth, this year maximum demand met and energy consumption of Northern region is expected to break previous records.
- A.23.3 During the upcoming high demand season, SLDCs may ensure that loading of ICTs and lines are below their N-1 contingency limits. While requisitioning power from various sources, states should take care to limit their scheduled drawl as well as actual drawl in real time within the Available Transfer Capability (ATC) limits assessed by SLDC and NRLDC. SLDCs need to ensure this during real-time operation.
- A.23.4 SLDCs need to make sure that loading of 220kV and below voltage level intrastate lines remain within safe limits during the high demand season.
- A.23.5 State-wise actions that are required to avoid transmission related issues that were encountered during last high demand season and would help in meeting higher demand this year are listed below:

Punjab:

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- 2nd ICT Capacity augmentation at Nakodar from 315MVA to 500MVA
- Minimising outages of Talwandi Saboo thermal generating units
- Avoiding/ Minimising outages of generating units on coal shortage.

Haryana:

- New 500MVA ICT approved at Deepalpur in 4 NRPCTP held on 05.10.2021. ICT commissioning delayed to PPP substation model issues as informed by HVPN. Discussed in number of OCC/NRPC meetings
- Expediting 220kV lines from Panchkula (PG) to Pinjore and Sec-32 Panchkula
- Ensuring availability of Faridabad Gas generating station during high demand season.
- Avoiding too much dependence on exchange for power procurement and plan to meet the deficit.

Uttar Pradesh:

- Although SPS implemented at number of 400/220kV substations such as Azamgarh, Obra, Sarnath, Nehtaur, Gorakhpur etc. Plan to enhance capacity may also be expedited as per forecasted load growth
- Expediting commissioning of additional ICT at Allahabad (PG)
- Commissioning of 400/220kV Sahupuri S/S along with underlying network to be expedited.
- Expediting commissioning of 765/400kV Obra C ICTs and 400kV lines from ObraC
- Avoiding/Minimizing outages of generating units on coal shortage.

Delhi:

- New ICT/ Capacity augmentation at 400/220kV Mundka to be planned by DTL. One ICT under prolonged outage may be revived. One ICT already borrowed from POWERGRID at Mundka by DTL.
- Commissioning of already delayed 400/220kV Gopalpur and Tikri Khurd S/S to be expedited by DTL.

Uttarakhand:

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- Although, SPS implemented at 400/220kV Kashipur, additional ICT to be commissioned as N-1 violations observed during high demand and less gas generation.
- In OCC meetings, NRLDC advised PTCUL to consult POWERGRID regarding finalizing tender documents for ICT to resolve bidding issues at earliest, as PTCUL suggested that no bids are being received for ICT.

A.23.6 Punjab SLDC representative stated that the status of 2nd ICT Capacity augmentation at Nakodar from 315MVA to 500MVA, will be appraised soon to the forum.

A.23.7 New 500MVA ICT approved at Deepalpur in 4 NRPCTP held on 05.10.2021. ICT commissioning delayed to PPP substation model issues as informed by HVPN. Haryana SLDC stated that they have shifted the load and due to multiple issues, Deepalpur New ICT augmentation will take more time to resolve the issues pending.

A.23.8 Haryana SLDC representative stated the 220 KV Panchkula- Pinjore line has come in service.

A.23.9 Commissioning of 400/220kV Sahupuri S/S along with underlying network. Issue related to FTC connection agreement was highlighted by NRLDC and UPSLDC representative assured that it will be submitted soon.

A.23.10 Further, UPSLDC representative stated that Obra 765/4400 KV ICT will be charged soon by April end.

A.23.11 DTL representative informed that 315 MVA ICT under outage at Mundka has already been replaced before last summer peak. 7 nos. 500MVA TRANSFORMER are under procurement for which tender is already floated. However, on due date of opening in March, only one bid was received as such bid submission date has been extended and hopefully some more bidders will participate. The old 315 MVA ICTs taken from PGCIL on loan will be returned once the transformer supply of 500MVA is received against this tender for procurement.

A.23.12 Further, 400kV Substation at Gopalpur is not a green field project and is being established by conversion of existing 220kV/66kV outdoor Substation into GIS in phased manner to create space. In the first phase conversion of 66kV outdoor Substation into 66 kV GIS is already completed and now in the space so created of 66kV outdoor yard, 220kV GIS is proposed and thereafter in the space so created 400kV substation shall be established. The scheme and DPR is under preparation and the tender is proposed to be floated soon.

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A.23.13 SPS implemented at 400/220kV Kashipur, additional ICT to be commissioned as N-1 violations observed during high demand and less gas generation. SLDC Uttarkhand stated that tender has been floated again.

NRPC Deliberation

A.23.14 In line with TCC, NRPC Forum also requested concerned states to expedite the discussed pending work.

Decision of Forum

States were requested to expedite the commissioning of transmission elements highlighted above and advised the concerned officers to take necessary measures for summer preparedness and ensure safe and secure grid operation during upcoming high demand season.

A.24 Integration of PMU installed under Smart Transmission Network & Asset Management System (STNAMS) (Agenda by NRLDC)

TCC Deliberation

A.24.1 NRLDC representative apprised that in reference to the discussion in 62nd NRPC Meeting held on 31.01.2023, where representative of RRVPNL informed that around 8 PMU out of total 25 PMUs under STNAMS project has been commissioned and data of same is updating at RRVPNL STNAMS control centre. It was also informed that there is a provision to integrate the new Phasor data concentrator (PDC) with existing PDC installed at Rajasthan SLDC.

A.24.2 During the meeting RRVPNL representative was requested to expedite the PMU data for better visibility of Rajasthan area as it is very important from grid operation point of view considering recent events in Renewable pocket.

A.24.3 In this regard NRLDC has also requested RRVPNL and SLDC to expedite the integration process vide letter NRLDC/SCADA/2023 dated 14.02.2023.

A.24.4 Subsequently, the issues were discussed in several NRPC & TeST Meetings, including latest in 68th NRPC held on 18.08.2023 & 24th TeST Meeting held on 09.02.2024. During the meeting, RVPN representative stated that the integration of STNAMS PDC with URTDSM PDC installed at Rajasthan SLDC is still pending due to some pending cyber security compliance by RRVPNL. He Further informed that

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issue is being followed up with RRVPNL and it is expected that integration would be completed by March 2024. However, integration of STNAMS PDC is still pending.

A.24.5 Rajasthan representative informed that cyber security has been addressed by Rajasthan STU.

A.24.6 He further added that by 20th April internet connection will be disconnected to address cyber security issue and by April end, 25 PMU will be integrated with SLDC Rajasthan and NRLDC.

NRPC Deliberation:

A.24.7 Forum agreed with deliberations of TCC and requested Rajasthan to expedite.

Decision of Forum

Forum requested Rajasthan to expedite the integration of PMU installed under Smart Transmission Network & Asset Management System.

A.25 RE related Issues in Northern region (Agenda by NRLDC)

TCC Deliberation

A.25.1 NRLDC representative apprised that presently more than 13000MW of renewable generation has been connected in the ISTS network in Western Rajasthan. As deliberated in previous NRPC meetings, number of issues have been observed with increasing RE integration in Western Rajasthan. On many occasions, multiple element tripping including outage of renewable generation has also taken place.

A.25.2 Following issues are being observed w.r.t. performance of RE plants:

- a) It has been requested continuously from NRLDC side to RE plants to perform Power Quality measurement, Harmonic analysis test and Flicker test at Field as per CEA regulation Central Electricity Authority (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2013, Part-II, clause B1, Sub-clause (1), (2), (3) & (4) and submit the Test report for Power Quality measurement, Harmonic analysis, DC injection and Flicker test showing %THD and distortion due to nth Harmonic at Point of Interconnection for Voltage and Current, DC injection and Flicker at POI. Same was also requested vide NRLDC letter dated 04.03.2024.

However, no response is being received from most of the RE plants.

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- b) Significant amount of Reactive MVAR is required for the collector system/IDTs/ ICTs and dedicated line at the time of Peak Solar generation of a RE plant. This leads to MVAR absorption from Pooling station and subsequent low voltage issue in pooling station.

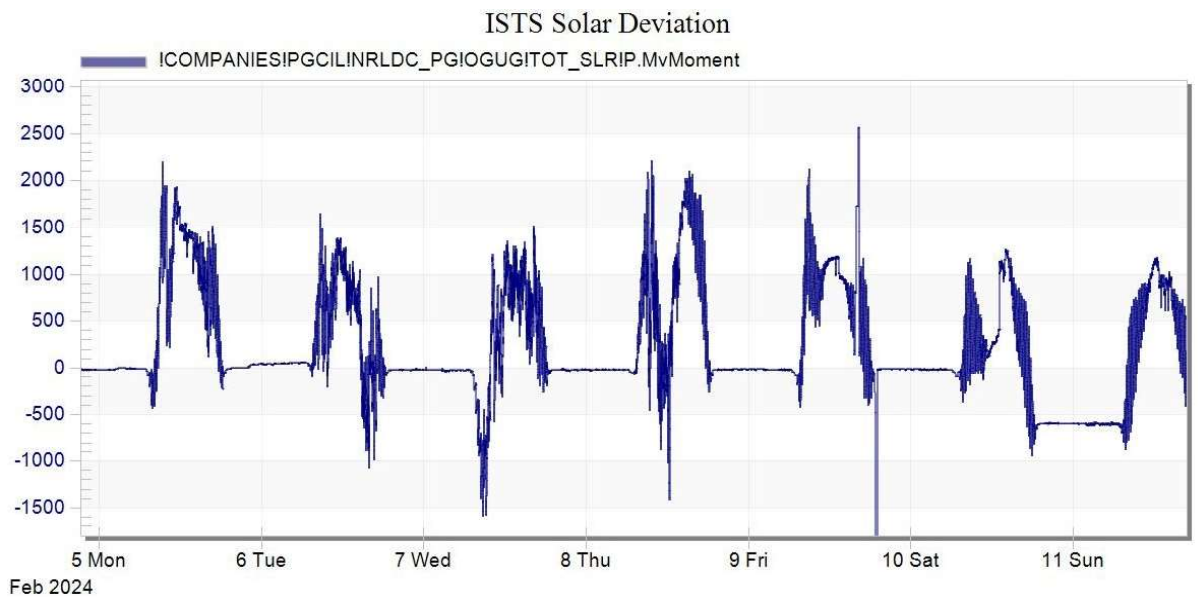
Now RE plants are installing either SVGs (Static VAr generators) or additional Inverters or STATCOMs to provide adequate dynamic reactive support to ensure Voltage stability. This has been ensured from the connectivity stage itself after Working Group 2022 report [https://www.ctuil.in/uploads/assets/168864401979Final%20Report%20of%20the%20Working%20Group%20\(July%202022\).pdf](https://www.ctuil.in/uploads/assets/168864401979Final%20Report%20of%20the%20Working%20Group%20(July%202022).pdf).

Recently, oscillations have been observed due to the introduction of SVG for reactive power support in other regions. Further, the control philosophy of SVG is not known to most of the RE plants.

Operation of additional devices such as SVG/ capacitors etc. also need to be thoroughly studied by RE plants and correct settings needs to be ensured to avoid other issues in the grid.

- c) Common Challenges associated with RE integration are Variability, Balancing Reserves, System Inertia, Predictability, Observability, Net Load Ramp, Reactive power management and Protection coordination etc. On several days it is being observed that RE plants in NR are over injecting during the day time. The aggregate over injection from 12-13GW ISTS RE capacity is coming to be in range of 1000-1500MW.

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Similarly, on the days of cloud cover it is being observed that the plants are continuously under injecting and are also not timely revising their schedules.

All RE plants were requested to strictly generate as per their respective schedule.

- d) Various events of RE generation loss occurred during events of fault in the complex, Non-compliance of LVRT/HVRT requirement at Interconnection point are still being observed. To avoid any generation loss, LVRT/HVRT compliance at POI need to be ensured by RE plant(s). It has been observed that there have been more than 7 events in the last 2-3 months which have led to significant RE generation loss (1500-2000MW), although faults are getting cleared within stipulated time.

As per analysis of PMU data of RE plants, some of the RE plants were found non-compliant w.r.t CEA clause B2(3) and B2(7) (LVRT & HVRT requirement at Interconnection point).

In view of above, RE plants were requested to share the root cause analysis (RCA report) of LVRT/HVRT Non-compliance at POI of their respective plants

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along with DR/EL & inverter logs data showing clearly the cause of generation loss/inverters tripping vide following NRLDC letters.

1. NRLDC letter NRLDC\ RES\TS-108\ dated 22.01.2024
2. NRLDC letter NRLDC\ RES\TS-108\ dated 16.01.2024
3. NRLDC letter NRLDC\ RES\TS-108\656-668 dated 27.12.2023

NRLDC has also written to the RE plants on 1st March'24 that the model submitted during First time charging showed that plants are complying with LVRT/HVRT regulations of CE technical standards for connectivity to the Grid, however same is not being observed in real-time. Accordingly, suitable changes in model may also be provided so that actual behavior of RE plants is represented through simulation tests.

RE plants were specially requested to analyze the past grid events in detail and take corrective actions. Corrective Actions taken to improve performance during fault ride through condition may be subsequently shared with NRLDC/ NRPC. Apart from this, for some of the other plants where PMU data was down, were requested to make sure that PMU healthiness is checked at site and it may be ensured in coordination with NRLDC SCADA team that PMUs are reporting to NRLDC control room.

Response from RE plants regarding corrective actions taken at their end to avoid such instances of LVRT/HVRT non-compliance in future are not being received even after continuous follow-up from NRLDC side.

- e) Few events of High frequency voltage oscillation occurred in RE complex of Northern Regional grid during Aug'23-Feb'24. Issue have been addressed by PMU data analysis, taking identified plants in Fixed-Q mode, taking STATCOM at Fatehgarh-II(PG) in Fixed-Q (Manual mode), changing mode of operation of STATCOMs keeping minimal outage of line in the RE complex.

However, it is important that all RE plants record the data at inverter & PPC level for such events and share with NRLDC. It is being observed

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that even after repeated requests from NRLDC side, very little information is being received at NRLDC.

Further, in view of past experience of frequent outage of lines in RE complex during summer after thunderstorm, there may be requirement of RE curtailment due to inadequate evacuation paths.

Accordingly, in such cases RE plants need to ensure that diligent manpower is made available at control center, so that in case of any instruction from NRLDC, such instructions are quickly acted upon.

Recently a report was also published by Grid-India on RE related issues being observed in grid and is available @ <https://posoco.in/wp-content/uploads/2023/12/Report-on-Events-Involving-Transmission-Grid-Connected-Wind-Solar-Plants.pdf>

- A.25.3 The above agenda was also put up for discussion in 217th OCC meeting held on 15th March 2024, however, the same could not be discussed as the ISTS connected RE plants were not present in the meeting.
- A.25.4 It is to be noted that number of issues are being observed related to RE plants in Northern region during grid operation. For resolution of the issues, separate meetings are also being organized by NRLDC with RE plants, however it is observed that during these meetings, the participation from RE plants is less, there is no submission of data for analysis even after repeated mails/letters/communication. Further, during the meetings, the RE plants are generally not able to respond to the queries from NRLDC and are relying on inverter and PPC OEMs for further inputs.
- A.25.5 In view of the above highlighted issues and the issues being observed in grid operation, it was suggested that ***RE plants may also be asked to attend regular OCC/NRPC meetings after becoming member of NRPC or separate subgroup at NRPC level may be formed for effective discussion and early resolution of issues.***
- A.25.6 MS, NRPC addressed the importance of RE and desired to have better operation for grid management.

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A.25.7 Forum decided that a separate sub-committee may be formed for RE in Northern Region that may meet quarterly.

NRPC Deliberation

A.25.1 Forum agreed on deliberations of TCC.

Decision of Forum:

A separate sub-committee shall be formed for RE in Northern Region. The committee shall meet at least quarterly. Conduct of Business Rules of NRPC may be modified accordingly.

A.26 Implementation of 5-minute IEMs along with AMR system in NR (Agenda by NRLDC)

TCC Deliberation

A.26.1 NRLDC representative apprised that NRLDC has consistently highlighted the ongoing challenges in metering and emphasized the benefits of transitioning to 5-minute metering infrastructure, particularly in preparation for 5-minute scheduling and settlement implementation.

A.26.2 In the 48th Commercial Sub-Committee Meeting, NRLDC had flagged the issue of clarity in CEA regulation regarding requirement of IEMs to "record and send 5 min block data and other specifications as finalized in the JC- Jul 2022" and adaption of newly TS meters which can be calibrated both for 5 min and 15 min recording in IEMs for a seamless transition from 15 min to 5 min scheduling and settlement process.

A.26.3 NRLDC also mentioned issues related with existing AMR infrastructure and need of a robust and completely integrated AMR infrastructure for 5 minute metering.

A.26.4 The forum had acknowledged NRLDC's concerns, recognizing the necessity of robust metering and AMR infrastructure for accurate energy accounting.

A.26.5 Recently, CTU had placed an agenda on "Implementation of 5-min meter along with AMR system from PAN India" in 14th meeting of NPC held on 03.02.2024. The deliberations were as follows:

- i. Grid-India Informed that the provision of migrating to 5 min scheduling was made in their WBES and other application and similar provision need to be made in Unified Accounting software (UAS) of RPCs.

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- ii. CTU representative informed that the proposal of the scheme “5 min Interface Energy Meter along with AMR system” for Southern Region was put up to 17th NCT meeting held on 31st Jan’2024. After deliberation, it was decided that the same scheme shall be worked out for complete PAN India National level.
- iii. Chairperson NPC was of the view that 5 min IEM with AMR system may be implemented for pan India for smoother transition from 15 min to 5 min regime. He further opined that the proposal/DPR for 5 min IEM with AMR system for pan India may be prepared by PGCIL based on the input provided by CTUIL regarding the ISTS metering points in consultation with Grid India. CTU may prepare the roadmap and activities to be done for transition from 15 min to 5 min regime based on the previous studies/ reports in present context. He emphasized that the timeline of the activities may also be prepared and it may be in sync and coordination with each activity for smoother implementation of the project. The PSDF funding may not be possible because limited funds in PSDF. The funding of the project may be decided in the NCT meeting.

A.26.6 Further, as per decision of NPC:

- i. The agenda for 5 min Interface Energy Meters along with AMR system for PAN India (for all five regions) needs deliberations in all RPC. Agenda may be taken up in the upcoming meetings of all RPCs.
- ii. The proposal/DPR for 5 min IEM with AMR system for pan India may be prepared by PGCIL based on the input provided by CTUIL regarding the ISTS metering points in consultation with Grid India.
- iii. CTU may prepare the roadmap and activities to be done for transition from 15 min to 5 min regime based on the previous studies/ reports in present context. The timeline of the activities may also be prepared and it may be in sync and coordination with each activity for smoother implementation of the project.

A.26.7 Forum decided to club this agenda with agenda no. 30 of CTU.**NRPC Deliberation**

NRPC agreed upon the deliberations of TCC.

Decision of Forum

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CTU was advised to refer the case to NPC sub-group (of Communication) to review technical specifications in consultation with states.

A.27 Status of compliance with the directions of CERC order dtd. 14.08.2023 para no. 31 (Petition No. 156/MP/2022) (Agenda by NRLDC)

TCC Deliberation

A.27.1 NRLDC representative apprised that CERC order dtd. 14.08.2023 para no. 31 (Petition No. 156/MP/2022) is quoted below:

*“31. The action plan submitted by the State SLDCs was discussed during the above said meetings with NRLDC during December 2022- January 2023. Subsequent to the meetings, State SLDCs submitted revised action plan. **Considering the submissions of the Petitioner, Respondents and the detailed action plan submitted by NRLDC in discussion with the respective State SLDCs, we direct as follows:***

*(a) The states to expedite work on the implementation of ADMS (Automatic Demand Management Scheme). Till the implementation of ADMS, manual load shedding of radial feeders identified by SLDCs may be done based on instructions of the concerned SLDCs, without any delay during emergency conditions shall be shared with NRLDC. **The Status of the implementation of ADMS shall be updated to the NRLDC on quarterly basis by the respective SLDC.***

*(b) All the Respondent states should have in place better demand forecasting/ estimation systems so that there is minimum deviation from the schedule allocated to each drawing entity. Due to the intermittent nature of renewable sources, accurate Forecasting & Scheduling of renewable energy is required. Therefore, SLDCs needs to improve its current forecasting infrastructure for accurate forecasting of renewable generation. Further, Specialized RE forecasting tools for accurate RE forecasting & Scheduling shall be developed so that variability of RE Generation can be handled in advance by the SLDCs. **States should focus on reduction in forecast error to less than 2% in the day ahead forecast.***

*(c) **Management of the load in such a manner that the demand ramp should be limited to not more than 100 MW.** There should be efficient coordination with*

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generators and staggering of power supply plan of agriculture feeders to be done on regular basis keeping in view the ramp constraints.

(d) Action to be taken to ensure adequate generation resources & maintain balanced portfolio at all the times and avoid over drawl. Long term demand estimation at all time horizons may be carried out and adequate generation may be planned accordingly.

(e) Advance information on coal stock of thermal plants should be available so as to ensure the availability of thermal generating units. Review of coal stock position of thermal plants should be carried out on regular basis and matter should take up with appropriate agencies/authorities well in advance to ensure fuel security for their generators.

.....

(g) Tertiary reserves should be maintained in a decentralized fashion by each state control area for a quantum as assigned by NLDC or NRLDC.

(h) The States should take advance action for managing their demand portfolio and make prior arrangements for procurement of power and ensure portfolio balancing at all times without overdrawing power from the grid.

(i) To take prompt action to control overdrawal on receipt of the Non-Compliance, Alert and Emergency messages from the NRLDC, DISCOMs should ensure immediate compliance of warning messages issued by NRLDC and send a compliance report to NRLDC. The SLDCs shall prepare a standard operating procedure/protocol to be followed by SLDCs & DISCOMs to control the overdrawl immediately.

(j) In case grid frequency fall below the band, all the SLDCs should always be ready for implementation of emergency measures for controlling overdrawls under Low frequency conditions to safeguard the grid. In this regard healthiness and availability of AUFLS (Automatic Under Frequency Load Shedding) and df/dt load shedding must be ensured.

(k) Strictly adhere to the provisions envisaged under the IEGC for safe, reliable and economical operation of the grid and maintain drawal from the grid as per drawal

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schedule and avoid overdrawing from the grid in compliance with prevailing Regulations of the Grid Code and DSM Regulations so as to ensure safety & security of the grid and obviate any possibility of a grid disturbance.

- A.27.2 We direct the respondents to strictly adhere to the Action plan as above. SLDCs are directed to submit the quarterly report to the NRLDC on status of implementation of the action plan. Any modification in action plan keeping in view issues arising while implementation, may be discussed and finalised in RPC.”
- A.27.3 Compliance status report submitted only from UP, Rajasthan, Haryana & Uttarakhand. Status is still pending from Punjab, J&K and Himachal Pradesh.
- A.27.4 Punjab SLDC representative informed that they have submitted the same on 28.03.24.
- A.27.5 J&K SLDC representative stated that they will submit compliance status report in 15 days.
- A.27.6 Himachal SLDC representative conveyed that in next 7 days compliance status report will be submitted.

NRPC Deliberation

NRPC noted the deliberations of TCC.

Decision of Forum

Forum directed J&K and Himachal Pradesh to send the compliance report to NRLDC at the earliest.

- A.28 Exclusion of the quantum of 7MW of Northern Railways from the GNA Quantum of Haryana for the purpose of billing inter-state transmission charges by CTUIL (agenda by HPPC)**

TCC Deliberation

- A.28.1 Haryana SLDC representative apprised that CERC has notified the (Connectivity and General Network Access to the interstate Transmission System) Regulation, 2022 on 07th June 2022. Further, as per notification dated 03rd August 2023, the date of implementation for scheduling & dispatching of electricity based on GNA quantum was notified as 01st October 2023.

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- A.28.2 As per clause 18.1 (e) of the GNA Regulations 2022, SLDCs were required to intimate the segregation of deemed GNA which is reproduced below:

“GNA deemed to have been granted to STU under clause(d) of this Regulation, shall be segregated for each intra-State entity, including distribution licensee, by the respective SLDC, and intimated to STU, Nodal Agency and NLDC within 1 month of publication of details by the Nodal Agency under clause (d) of this Regulation.

Provided that in case an SLDC fails to provide such segregation, the pro rata GNA shall be allocated to each intra-State entity in the ratio of their Long-Term Access and Medium-Term Open Access, as included in the first bill raised in the previous month under the sharing Regulations”

- A.28.3 Accordingly, GRID-INDIA vide letter dated 19.09.2023 requested all STU/SLDCs to furnish the segregation of GNA granted to respective STUs for each intra-state entity to NLDC.
- A.28.4 In response HVPNL vide email dated 30.09.2023 to NRLDC furnished the segregation of GNA granted as under:

Name of entity	Total GNA	GNA within the region	GNA outside the region
Haryana Total GNA	5418	3065	2353
HPPC on behalf of Haryana DISCOMs	5343	3065	2278
Northern Railways	75	0	75

(All figures in MN)

- A.28.5 However, in the GNA bill raised by CTUIL for the billing period October, November December 2023 and January 2024 the share of Northern Railways is considered as 68 MW instead of 75 MW leading to additional financial implication corresponding to 07 MW on Haryana DISCOMs.
- A.28.6 In view of the above, Haryana SLDC representative requested CTUIL for correction of GNA in respect of Haryana DISCOMs and railways & refund the excess amount billed and paid by Haryana DISCOMs at the earliest.

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- A.28.7 CTUIL representative informed that subsequent to notification of GNA regulations by CERC on 19.07.2022, CTUIL has sent multiple reminders (starting with 03/10/22 onwards) to all STUs to provide segregation of GNA as per 18.1. The matter was also deliberated in the 46th commercial subcommittee meeting held on 28.11.2022 to provide above segregation. However, despite multiple reminders, segregation of GNA from HVPN was not received by CTUIL. In view of the above, the segregation of GNA to each intra-State entity was done on pro rata basis of LTA & MTOA as per 18.1 (e) of GNA Regulations.
- A.28.1 CTUIL representative also clarified that in HVPN e-mail dtd 30/09/23 to Grid-India, CTUIL was not marked copy. HVPN also concurred to above, that they sent mail to Grid-India only. Further Grid-India (NRLDC/NLDC) have also not sent HVPN mail to CTUIL. Therefore, CTU have come across this issue very recently only.
- A.28.8 CTUIL representative also stated they have informed CERC on 11/03/24 regarding requests of other SLDC/STUs (like Gujarat, Jharkhand, DVC, Odisha, Rajasthan) for retrospective revision of GNA segregation. The matter is currently pending with CERC.
- A.28.9 Chairperson, TCC advised CTUIL that as it is not a retrospective revision as HVPN intimated Grid-India for segregation in Sep'23 however due to communication gap it didn't reach CTUIL therefore, same may be positively looked into.

NRPC Deliberation

Forum was in consonance of discussion held in TCC meeting.

Decision of Forum

Forum directed CTUIL to resolve the above matter.

A.29 Commissioning work of Tehri PSP and its impact on operation of Tehri HPP and Koteshwar HEP (agenda by THDCIL)

TCC Deliberation

- A.29.1 THDCIL representative apprised that The Civil, EM & HM works of Tehri PSP is in full swing and as per the present pace of work, the likely commissioning date of 1st Unit is July-2024. However, before commissioning of Tehri PSP, the following river joining works are required to be completed:

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- Two nos. baffle walls are required to be constructed to avoid the entry of debris etc in the water conductor system of PSP from TRT side during Pumping Mode of operation. The location of the proposed baffle wall is as below:
 - U/s of HPP TRT from EL.600.00m to El.607.00m.
 - U/s of PSP TRT from EL.597.00m to El.603.00m.
- During operation of HPP & KHEP, the water level is generally above El.603.00m. Hence, the above two nos Baffle wall cannot be constructed without partial & complete shutdown of HPP & KHEP.
- The adjacent rock condition of river valley near U/s of PSP TRT area is filled with loose materials & required to be protected before operation of PSP. Further, the proposed approach road for the treatment (left & right bank) is required upto EL.597.00m. Hence, to take up the work of slope protection with construction of approach road for baffle wall & as well as for slope protection works, the proposed partial & complete shutdown of HPP & KHEP is required.
- The existing Flood protection wall at PSP TRT outfall area (from El.616.00m to El.597.00m) is required to be removed before operation of PSP and subsequently raft at EL. 598.00m and U/s & D/s guide walls upto El.616.00m are required to be constructed.

A.29.2 In order to complete the above work, the following nature of shutdown of Tehri HPP & Koteshwer HEP is required:

- a. Partial Shutdown (THPP & KHEP): 1st April-24 to 14th May-24.
- b. Complete Shutdown (THPP & KHEP): 15th May-24 to 30th Jun-24.

A.29.3 He stated that the schedule of the activities from 1st April-24 to 30th Jun-2024 is placed at **Annexure-XXXIV**. Further, detailed proposed works of Tehri PSP to be carried out is attached as **Annexure-XXXV**.

A.29.4 THDCIL representative informed that they got delayed in raising the matter due to delayed consent from UP Irrigation Department.

A.29.5 UPSLDC and Delhi SLDC (beneficiaries of Tehri), mentioned that they will not be in a condition to allow the asked outage for Tehri.

A.29.6 MS, NRPC highlighted that there is direction issued from MoP for not giving shutdown in summer months due to likely high demand and also due to general election in the country. THDC also not informed CEA/NRPC during preparation of

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LGBR for 2024-25 regarding their plan for proposed shutdown. Moreover, proposal involves long outage of two hydro power plants totaling to 1400 MW and beneficiary States are also not agreed for the proposed shutdown. In view of above, shutdown may not be given at this time.

A.29.7 He suggested THDCIL to apply for outage in monthly OCC meeting.

A.29.8 THDCIL was also suggested to approach MoP for their requirement of shutdown in this summer.

NRPC Deliberation

A.29.9 Forum approved the deliberation held in TCC and denied the desired outage.

Decision of Forum

Forum suggested THDC to apply for outages in monthly OCC meetings so that outage can be provided at the earliest feasible time and also recommended THDC to approach MoP on this matter as commissioning of PSP is also very crucial.

A.30 Supply & Installation of AMR Compatible ISTS Interface Energy Meters along with AMR (Automatic Meter Reading) System under the scheme “5 min Interface Energy Meter along with AMR system”-For all five regions as PAN India level (agenda by CTUIL)

TCC Deliberation

A.30.1 CTUIL representative apprised that a Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the “5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)” for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS. This Technical specification includes:

- All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary

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computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations).

- Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose.

A.30.2 In view of above for making the system future ready for 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above-mentioned project proposal as following:

S.No	Items	Details
1.	Name of Scheme	Supply and installation of AMR compatible 5 min Interface Energy Meter along with AMR Systems- For all five regions NER, ER, NR, WR & SR.as PAN India.
2.	Scope of the scheme	<ol style="list-style-type: none"> 1. Supply of AMR compatible 5 min Interface Energy Meters for all ISTS metering points of All five regions, 2. Installation of new AMR compatible IEMs by replacing existing meters in case of existing points and for newly added metering points. (Replacement work & New Installation work) 3. Supply and installation of AMR systems in dual LAN configuration at central location along with DCU, Ethernet Switch and other accessories at substation end and AMR software along with servers, consoles, historian software, database, printer, firewall, furniture, etc. at RLDC end to receive 5 min load profile data in auto mode. 4. Provision of streaming online instantaneous MW data at a user configurable rate (minimum 1 min) via AMR system for viewing purpose.

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S.No	Items	Details
		<p>5. AMC includes Operations & Maintenance work (including data processing & report generation from AMR) for complete AMR system for 7 years.</p> <p>6. On line Data storage of Raw Data & processed data for three years.</p> <p>The complete scope of IEM & AMR scheme shall be broadly in line with the Technical Specification (Section 1 & 2 of Part 1) circulated by NPC Division, CEA vide letter dtd. 6th July 2022.</p> <p><i>Note: MDP system which is also part of the above TS mentioned shall be implemented by SRLDC/POSOCO and would match the timeline schedule with IEM & AMR project.</i></p>
3.	Objective / Justification	<p>For Indian Power system, commercial settlements of energy generation and consumption are being computed through Availability Based Tariff (ABT) and Deviation Settlement Mechanism (DSM) which are in vogue for energy accounting. Availability Based Tariff was implemented in India in 2002/2003 considering the settlement period as 15-min.</p> <p>Government of India (GoI) has set a Renewable Energy (RE) target of 500 GW by 2030. In the last few years approximately since a decade, the need for implementing 5-minute meters along with AMR system for regional energy accounting and settlement at the Inter State level has been discussed and deliberated in various apex level forums & Committees.</p> <p>A PAN India pilot project on 5-minute metering was implemented as per the directive from Hon'ble CERC in 2018. A report on the pilot project covering</p>

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S.No	Items	Details
		<p>implementation aspects, challenges and suggested way forward has been submitted by POSOCO for perusal of the Hon'ble Commission</p> <p>This issue was discussed in OCC/TCC/RPC meetings at regional level and it was discussed to replace the existing SEMs (15-min Block) with AMR compatible Interface Energy Meters (5-min Block) and implementation of Automated Meter Reading (AMR) and Meter Data Processing (MDP) system for efficient and faster accounting. Moreover, there is a need expressed by States to get streaming online instantaneous MW data at a user configurable rate (minimum 1 min) at SLDCs via AMR system for viewing purpose to manage their drawl.</p> <p>A Joint Committee (JC) comprising the members from each RPC, CEA, CTU/PGCIL & POSOCO has been prepared Technical Specifications (TS) of the "5/15 Minute Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP)" for interstate transmission system at PAN India basis. NPC Division, CEA vide letter dated 6th July 2022 had circulated the final copy of the TS.</p> <p>This Technical specification includes:</p> <ul style="list-style-type: none"> ● All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system for necessary computation to convert 5 min Time Block data to 15 min Time block data (in line with regulations). ● Provision of 1 min instantaneous MW power flow data from IEMs to SLDC, for viewing purpose. <p>CTUIL sent a letter dtd. 27.06.2023 to CERC (attached as Annexure-XXXVI) stating that nodal</p>

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S.No	Items	Details
		<p>agency for AMR system implementation may be identified. CTUIL also informed NPC division, CEA vide letter dtd. 24.07.2023 (attached as Annexure-XXXVII) that JC TS calls for 5 min Time block recording by ISTS IEMs whereas as per CEA metering regulation it is 15 min time block.</p> <p>In this regard, Grid-India NLDC specified to NPC, CEA that 5-minute time block could be considered for procurement of new ISTS IEM, AMR & MDP (attached as Annexure-XXXVIII). Subsequently NPC CEA, coordinated a joint meeting (mail attached as Annexure-XXXIX) amongst the stakeholders comprising of CERC, Grid India (NLDC, RLDCs) & CTUIL, chaired by CEA Regulatory division dated 18th August'23 to check the feasibility for amendment of the CEA metering regulation in line with the ongoing developments and requirements of 5 min time block recording in IEMs.</p> <p>In view of the above mentioned system requirement of 5 min Time Block, while also complying the present regulations for 15 min time block for Scheduling, Accounting, Metering & Settlement; JC TS is being adopted for the above mentioned project proposal.</p>
4.	Deliberations in RPCs	<p>The scheme was discussed in all the RPCs and the status is as below:</p> <p>Scheme is approved in SRPC if 50% fund is available from PSDF(July'23). Scheme is in principle approved in NERPC (June'23) and WRPC (Feb'2023) as well. Funding status to be updated to the forums.</p>

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S.No	Items	Details
.		<p>For NRPC- In 48th Commercial (Jan'24) Sub-Committee, M/s NRPC directed to take up the agenda in next NRPC meeting for approval.</p> <p>For ERPC- A special meeting was proposed in 47th TCC- Nov'22 meeting to deliberate the project in detail in line with the life of the existing AMR system, which is going to be ended on 31st March 2026.</p> <p>Project Cost was informed to all RPCs during Year 2022/23,</p>
5.	Estimated DPR Cost	<p>Rs. 444.87 Cr. excluding AMC & Rs 152.62 Cr. for 7 yr AMC</p> <p>*Costing to be updated considering latest no. of meters and locations at the time of tendering.</p>
6.	Implementation timeframe	Approx. 24 months from gazette Notification.
7.	Implementation Mode	To be deliberated

A.30.3 Grant from PSDF for the FY 24-25 is not available as per MoP order. Accordingly, the funding is also to be deliberated. Earlier 90% of the project cost was allocated for grant.

A.30.4 MS, NPC stated that this scheme is for all ISTS metering points.

A.30.5 Rajasthan representative desired to get the data of such meters for them to send to Urja Vikas who do day ahead calculation of procurement of power and will help to minimize the error.

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- A.30.6 Director, UPSLDC enquired about provision of integration of these meter data with SAMAST Portal. He demanded to have integration of the same with SCADA at least.
- A.30.7 Director, UPSLDC conveyed that the one-minute MW data is to be made available for SLDC preferably through integration with SCADA system.
- A.30.8 Himachal Pradesh representative raised the concern over integration of 1-minute instantaneous meter data with existing system of SLDCs through api and correlating the same with SAMAST meters. That will help in calculation of transmission losses.
- A.30.9 Haryana representative was in the same view of Himachal Pradesh.
- A.30.10 CTUIL representative conveyed that 1-minute instantaneous data will go to the AMR system and then SLDC can view this through secure web browser. Further it was informed that these requirements of Integration are not part of JC Technical Specification for Metering & AMR. The scope for integration/ exchange of data in line with CERC applicable regulations is part of MDP, to be implemented by Grid-India as per JC Technical Specification for MDP.
- A.30.11 MS, NRPC suggested CTUIL to look into the concern of various states and may come into next NRPC meeting.

NRPC Deliberation

- A.30.12 Forum accorded the decision held in TCC meeting and directed CTUIL & RLDC to address the queries of SLDCs and STUs.
- A.30.13 MS, NPC informed that most of members of JC have got transferred and retired. Hence in order to review the TS, NPC sub group members, CTUIL, RLDC may discuss and review the issues for finalization of TS.

Decision of Forum

CTU was advised to refer the case to NPC sub-group (of Communication) to review technical specifications in consultation with states.

A.31 Transmission scheme for evacuation of power from Ratle HEP (850MW) (agenda by CTUIL)**TCC Deliberation**

- A.31.1** GM, CTUIL apprised that System Study for evacuation of power from Ratle HEP (850 MW) was discussed and agreed in 26th CMETS-NR meeting held on 20.12.23. Subsequently, reactive compensation of above scheme was deliberated in recent 28th CMETS-NR meeting held on 27.03.24.

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- A.31.2** The estimated cost is Rs. 1450 Cr. (Approx).
- A.31.3** Further, the detailed transmission scheme for evacuation of power from Rattle HEP (850MW) is attached as **Annexure-XXXX**.
- A.31.4** CTUIL representative mentioned that scheme will also be utilized for other hydro generators in Chenab Valley complex.
- A.31.5** POWERGRID representative mentioned that on Kishenpur– Jalandhar D/c line with 80MVAR line reactor at Jalandhar end, % reactive compensation would be >70%, which is on higher side, as they have encountered resonance issues for higher order reactive compensation (>70%) in some of the 400kV lines. Therefore, 1x63MVAR line reactor at Jalandhar end on above line should be considered with which reactive compensation would be about 56%.
- A.31.6** Grid-India informed that in view of twin configuration of Kishenpur-Jalandhar D/c line (earlier considered Quad in meeting discussion) and request of POWERGRID, line reactor size may be selected as 63MVAR at 400kV Jalandhar end of 400kV Kishenpur– Jalandhar D/c direct line (Twin) formed with bypassing at Samba by both ckts of 400kV Kishenpur – Samba D/c line (Twin) & 400 kV Samba – Jalandhar D/c line (Twin) at Samba. Accordingly, 63MVAR switchable line reactor at Jalandhar end for Kishenpur– Jalandhar D/c direct line (Twin) line may be selected.
- A.31.7** MS, NRPC highlighted that this scheme will enhance the power supply position in valley area also.
- A.31.8** CGM, NRLDC presented the additional comment on the scheme and suggested CTUIL to review the fault level at Jalandhar. CTUIL representative replied that fault level of Jalandhar S/s is about 44kA (designed capacity: 40kA), however present scheme does not influence the fault levels of Jalandhar S/s. Suitable measures will be taken to reduce fault levels (complex wise) of various substations in NR comprehensively separately.
- A.31.9** POWERGRID raised some concerns over the proposal of presented scheme as below:
- I. POWERGRID representative conveyed that PIR may be used in breaker for length greater than 170km. CTUIL representative informed that PIR requirement shall be taken care in the Bid document as per standardised norms for other packages.
 - II. CM, POWERGRID raised issue regarding consideration of total no. of bays. CTUIL stated that all 400kV bays vacated due to bypassing at Kishenpur,

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Samba & Jalandhar S/s is being utilized for new interconnections as part of present scheme.

- III. CM, POWERGRID desired that Bay Equipment and hardware fittings removed due to existing system upgradation may be declared as regional spares so as to recover their Salvage value.

A.31.10 After detailed discussion, Forum accorded the proposal technically.

NRPC Deliberation

Forum concurred the decision of the TCC forum.

Decision of Forum

Forum approved the proposal technically.

A.32 Transmission system for evacuation of power from Fatehgarh/Barmer Complex as part of Rajasthan REZ Ph-IV (Part-4 :3.5GW) (agenda by CTUIL)

TCC Deliberation

A.32.1 GM, CTUIL apprised that transmission system for evacuation of power from Fatehgarh/Barmer Complex as part of Rajasthan REZ Ph-IV (Part-4 :3.5GW) was agreed in 27th CMETS-NR meeting held on 10.01.24. The transmission scheme was discussed and technically approved in the 71st NRPC meeting held on 29.01.24 and recommended to NCT.

A.32.2 Further, Line lengths of some of the transmission lines are modified w.r.t new location of Barmer-I PS and review of line lengths in Gati Shakti portal. Accordingly reactive compensation of some of the lines is also modified. Details in this regard are as under:

S.No.	Agreed Scope as per 27th CMETS-NR	Modified Scope
1	Barmer-I PS – Merta-II 765 kV D/c line along with 240 MVAR switchable line reactor at Barmer-I PS end and 330MVAR switchable line reactor at Merta-II PS end for each circuit of Barmer-I PS – Merta-II 765 kV D/c line (~320 km)	Barmer-I PS – Merta-II 765 kV D/c line along with 330 MVAR switchable line reactor for each circuit at each end of Barmer-I PS – Merta-II 765 kV D/c line (~345 km)

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		110MVAR spare reactor unit at Barmer-I PS (single phase)
2	Dausa - Ghiror 765 kV D/c line along with 240 MVAR switchable line reactor for each circuit at each end of Dausa - Ghiror 765 kV D/c line (~285 km)	Dausa - Ghiror 765 kV D/c line along with 330MVAR switchable line reactor at Ghiror end and 240 MVAR switchable line reactor at Dausa end for each circuit of Dausa - Ghiror 765 kV D/c line (~305 km) 110MVAR spare reactor unit at Ghiror S/s (single phase)

- A.32.3 Further, LILO of one ckt of 765kV Agra (PG) – Fatehpur (PG) 765kV D/c line at Ghiror along with 240 MVAR switchable line reactor at Ghiror S/s end of 765 kV Ghiror -Fatehpur line may be considered as LILO of one ckt of 765kV Agra (PG) – Fatehpur (PG) 2xS/c line at Ghiror along with 240 MVAR switchable line reactor at Ghiror S/s end of 765 kV Ghiror -Fatehpur line.
- A.32.4 The above modifications were agreed in 28th CMETS-NR meeting held on 27.03.24.
- A.32.5 MS, NRPC requested STUs for extensive use of Gati Shakti portal in transmission planning to avoid future requirements of diversion due to other infrastructure projects.
- A.32.6 Forum noted the proposed modifications and approved the same.

NRPC Deliberation

Forum was in consonance of the deliberation held in TCC meeting.

Decision of Forum

Forum approved the modifications in scheme.

B.1 Approval of MoM of the 69th NRPC meeting

- B.1.1 EE (P), NRPC apprised that the minutes of the 71st NRPC meeting (held on 29.01.2024) was issued vide letter dtd. 23.02.2024. Comments received from CTUIL were deliberated and forum approved the MoM with inclusion of CTUIL comments as below:

<i>Agenda of MoM</i>	<i>Text as per MoM Issued</i>	<i>Amended Text</i>
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Issued		
(7) Transmission system for Rajasthan REZ Ph-IV (Part-3 :6GW) & Transmission system for Rajasthan REZ Ph-IV (Part-4 :3.5GW) (agenda by CTUIL)	A.7.27 CTUIL representative conveyed that based on POWERGRID reply, the OPGW installation may be added to this proposed scheme. The OPGW installation works may be made part of scheme as per MOP guidelines dated 09.03.2022 under category-A.	A.7.27 CTUIL representative conveyed that based on POWERGRID reply, the OPGW installation may be proposed as a new scheme. A separate scheme to be made for OPGW installation and to be put up in NCT for approval as per MOP guidelines dated 09.03.2022 under category-B.
b) Rajasthan REZ Ph-IV (Part-4 :3.5GW)	A.7.28 CTUIL representative conveyed that based on POWERGRID reply, the OPGW installation may be considered to this proposed scheme.	A.7.28 After deliberation, forum approved the proposal of CTU.
	A.7.29 After deliberation, forum approved the proposal of CTU.	
	Decision of Forum:	Decision of Forum:
	3. OPGW installation on 765kV Agra (PG) – Fatehpur (PG) D/c line may also be considered part of Ph-IV (Part-4 :3.5GW) scheme.	3.OPGW installation on 765kV Agra (PG) – Fatehpur (PG) 2xS/c line (335 kms.) may be considered as a separate scheme with implementation schedule of 24 months (preferably matching timeframe with Ph-IV (Part-4 :3.5GW) scheme).

B.2 Approval of NRPC forum on decisions of TCC meeting held on 29.03.2024

Deliberation has already been added in agenda no. A.1 to A.32.

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM**B.3 Status of Audit of NRPC Fund Account for FY 2021-22 & FY 2022-23 and Status of Expenditure During FY 2023-24. (Agenda by NRPC Secretariat)**

- B.3.1 EE (P), NRPC apprised that as per the mandate of NRPC by-laws, the audit of NRPC Fund is required to be carried out by the external Audit Firm. Accordingly, Audit works of NRPC Fund for FY 2021-22 & FY 2022-23 was awarded to M/s Agarwal Manoj Nidhi & Associates through GeM. The above Audit was conducted by the above firm and Audit reports is enclosed as **Annexure-XXXXI**.
- B.3.2 As per the above report, no adverse comments/observations received from Audit team.
- B.3.3 The status of expenditure for NRPC Secretariat during the FY 2023-24 (upto Feb, 2024) is attached as **Annexure-XXXXII**.
- B.3.4 MS, NRPC informed that an internal audit of the same by NRPC officers at Director level is to be done in upcoming year.

Decision of Forum

Forum noted the information.

B.4 Status of Ongoing Renovation/ upgradation work in the NRPC Office and Staff quarters and Proposed Works in FY 2024-25 (agenda by NRPC Secretariat)

- B.4.1 EE (P), NRPC apprised that after approval of the Competent Authority/NRPC Forum, following works were awarded through CPWD and the same are presently under advance stage of execution/completion. The status of works is as below:

S No.	Details of Works	Contract Awarded Amount (Rs)	Present Status/Likely Date of Completion
1.	Renovation of Parks in NRPC Colony	8,81,400/-	Completed
2.	Providing and laying of new CPVC pipeline, water storage tank and cleaning of sump well for NRPC Residential quarters	10,13,000/-	Completed
3.	Water proofing of roof at NRPC staff quarters at NRPC colony	8,98,000/-	Completed
4.	Internal and external finishing including paint of	22,67,600/-	Under progress. Likely Completion by 31 st March,

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	doors and windows of NRPC Staff Quarters.		2024
5.	Renovation/upgradation of kitchens of NRPC staff quarters into modular kitchen and P/L of floors tiles, SS staircase for roof access	25,95,000/-	Under progress. Likely Completion by 31 st March, 2024
6.	Annual repair and Maintenance -Civil work in NRPC Office and Staff quarters	11,05,600/-	Annual contract up to July 2024
7.	Replacement of 02 Nos. lifts installed at NRPC with new lifts and Comprehensive maintenance of two Nos. lifts for a period of five years through CPWD & other associated electrical works	66,99,398/-	Nearing Completion. Operation by 31 st March, 2024
8.	Providing and laying/installation of "ITF Certified "Synthetic Acrylic surface for outdoor badminton court in park of NRPC staff colony	7,68,900/-	Tender Opened by CPWD. Likely award in March,24

B.4.2 After completion of above works, NRPC Secretariate is also planning to execute following works in NRPC Office/Colony through CPWD during FY 2024-25:

- (i) Replacement of AC Units in NRPC Office Premises with Efficient Hot and Cold Systems
- (ii) Renovation of Plumbing Work in NRPC Facilities
- (iii) Renovation of Electrical Works in 19 Quarters of NRPC Colony
- (iv) Renovation of Almirahs, Main Doors and Outdoor Civil Works in NRPC Officers Colony

B.4.3 Above proposal along-with requirements/justification of works shall be submitted to NRPC Forum for approval in due course. Detailed estimate for above works from CPWD shall be obtained separately, however based on preliminary estimate of CPWD, a budget provision of Rs 1.5 crore has been considered for FY 2024-25.

Decision of Forum

Forum noted the information.

49th TCC & 72th NRPC Meeting (29-30 March 2024)-MoM**B.5 Outstanding Contribution from Constituent Member J&K (agenda by NRPC Secretariat)**

- B.5.1 EE (P), NRPC apprised that NRPC Secretariat has been receiving contribution from most of the constituents in a timely manner except few members. Since FY 2021-22, there has also been provision of penalty of 1% simple interest per month on late payment as decided in NRPC meeting.
- B.5.2 JKSPDCL and JKPDD/JKPCL were both member of NRPC from FY 2014-15 to FY 2021-22. It is informed that till date JKSPDCL and JKPDD/JKPCL have pending membership payments of 32 lakhs and 22.9 lakhs respectively, details of which are mentioned below:

S. No.	Name of Constituent	Period (FY)	Outstanding amount (Rs.)	Penalty Amount (Upto March,24) (Rs)	Total outstanding amount (Rs.)
1	J&K State Power Development Corp. Ltd.	2014-15	11,00,000	-	11,00,000
2		2015-16	11,00,000	-	11,00,000
3		2018-19	10,00,000	-	10,00,000
Sub-Total (JKSPDCL)					32,00,000
4	**J&K State Power Development Department/ JKPCL	2019-20	10,00,000	-	10,00,000
5		2021-22	10,00,000	2,90,000	12,90,000
Sub-Total (JKSPDD/JKPCL)					22,90,000
Grand Total					54,90,000

*** Payment of contribution amount of Rs 20,00,000/- from JKSPDD/JKPCL received on 11.03.2024. However, interest amount of Rs 2,90,000/- yet to be received.*

- B.5.3 In this regard, pending payment status was discussed in various NRPC meetings and several reminders and D.O. letters have also been communicated by NRPC Secretariat (copy enclosed as **Annexure-XXXIII**) to JKPDD/J&K Govt, however above payment is still awaited till date.
- B.5.4 CAG in its recent audit of NRPC fund, has also raised concern over late and delayed payments to NRPC fund for the past Financial Years. It has mentioned that this is

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resulting in loss of recurring interest. Members may appreciate that the timely payment of contribution fee is required for smooth functioning of NRPC secretariat.

- B.5.5 Members may deliberate and suggest appropriate measures for recovery of above payments. It may be mentioned that if above payment is received from J&K, the contribution amount for all other members of NRPC may also get reduced to some extent.
- B.5.6 MS, NRPC informed that JKPCCL has submitted the contribution amount but interest is still pending. JKSPDCL has not submitted the contribution amount where no interest amount is due.
- B.5.7 CE, JKPCCL mentioned that he will take up the matter with the concerned.

Decision of Forum

Forum directed J&K to clear all outstanding dues towards NRPC membership.

B.6 Outstanding Contribution/Late Payment Charges for the FY 2023-24 by the Constituent Members (Agenda by NRPC Secretariat)

- B.6.1 EE (P), NRPC apprised that as approved in 68th NRPC Meeting, Demand Letter for contribution towards NRPC fund for the year 2023-24 was sent on 31.08.2023 to all the constituent members. It was also mentioned that beyond 31st October, 1 % simple interest shall be levied. It is informed that NRPC Secretariat has received contributions amount from all the member organizations for FY 2023-24.
- B.6.2 However, few organizations have made payment after 31st October,2023 but have not paid penalty amount. Details of organizations along with date of payment is mentioned below:

S. No.	Name of Constituent	Period (FY)	Contribution amount Paid (Rs)	Payment Date	Penalty Pending (Rs)
1	*HPSEB	2023-24	10,00,000	03.11.2023	10,000
2	*NTPC	2023-24	10,00,000	07.11.2023	10,000
3	UJVNL	2023-24	10,00,000	17.11.2023	10,000
4	UT of Ladakh	2023-24	10,00,000	05.12.2023	20,000
5	JVVNL	2023-24	10,00,000	06.12.2023	20,000

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6	*Lanco Anpara Private Limited	2023-24	10,00,000	08.12.2023	20,000
7	Renew Power	2023-24	10,00,000	14.12.2023	20,000
8	JKPCL/JKPDD	2023-24	10,00,000	01.02.2024	40,000
9	MVVNL	2023-24	10,00,000	09.02.2024	40,000
Grand Total					1, 90,000

It is mentioned that HPSEB, NTPC and Lanco Anpara Private Limited have communicated to NRPC Secretariate stating the reason of delay in payment to NRPC fund and requested to waive off the penalty amount (Letters and email enclosed). The main reason for late payment as stated by the above members is delay in communications/non receipt of demand letter etc. Other Members also requested telephonically to waive off the above interest as demanded amount already deposited.

- B.6.3 Further, CAG audit has highlighted non-recovery of penalty amount for FY 2021-22 and FY 2022-23 as attached as **Annexure-XXXXIV**.
- B.6.4 Since the decision of 1% penalty was earlier approved by the NRPC Forum, the power to relax/waive off the interest amount also lies with forum only. **In this regard, it is informed that due to delay in payment by above members, no works of NRPC Secretariate was affected due to the fund constraints.**
- B.6.5 Members were requested to deliberate and suggest necessary action.
- B.6.6 EE (P), NRPC added that CAG has audit noncompliance for due amounts.

Decision of Forum

- i. *Forum decided to waive off the above interest as one time measure, including pending interest from JKSPDD/JKPCL as mentioned in Agenda B5 above, as contribution amount already deposited.*
- ii. *Forum also decided to continue levying the 1% simple interest penalty after due date in line with earlier approval of Forum.*

B.7 Actual Expenditure During FY 2023-24 & Annual Budget of NRPC Secretariate for FY 2024-25 (Agenda by NRPC Secretariat)

- B.7.1 EE (P), NRPC apprised that Central Electricity Authority, Ministry of Power had issued the Standard Operating Procedure (SOP) for budgeting and expenditure of RPCs in pursuance to the MoP letter dated 23.02.2006 in which it was directed that

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activities of RPCs will be fully financed by constituent members. SOP was deliberated and adopted in the 66th NRPC meeting held on 30.05.2023.

- B.7.2 As per the SOP, RPCs shall finalize their annual Internal Budget and get its approval in committee meeting. Accordingly, the budget for the Financial Year 2024-25 for the NRPC secretariat has been prepared. Budget contains total expenditure for FY 2023-24 (Actual upto 29.02.2024 and estimated expenditure upto 31st March 2024) and Estimated Expenditure for FY 2024-25, as per the details given below:

(Amount in Rs.)

Account Head	Total FY 2023-24 Expenditure	Remarks/ Booking of Expenditure during FY 2023-24	BE FY 2024-25
Salary	1,74,31,712	Salary bills	1,97,00,000
Rewards	73,817	Bonus for Group-C Employees	1,00,000
Medical Treatment	8,83,147	Cost of Medical Treatments	10,00,000
Allowances	1,16,94,058	HRA, DA etc	1,53,00,000
LTC	3,11,902	LTC estimate for Feb-April'24 based on 3rd quarter expense	5,00,000
Training	1,94,700	Training Expenses of NRPC Officials	5,00,000
DTE	14,61,233	Domestic tour.	15,00,000
OE	76,28,519	Office expenditure- Recurring expenses of salary of contractual staff, AMC and other bills.	1,00,00,000
RRT	4,16,812	Rent rate and Taxes- One time expense of property tax paid in Feb'24. No further expense estimated till April'24.	4,00,000
Digital Equipment	3,80,443	Digital equipment (cartridges, Hard Disks, pen drive etc.)	5,00,000
Minor Works	0		0
Repair and Maintenance	95,42,790	ARMO, Civil & Electrical works in NRPC Complex through CPWD, AMC of IT Maintnce.	1,50,00,000
Other Revenue Exp.	5,76,792	Hospitality and other similar bills (Mobile, Newspaper Bills etc)	7,00,000
Rent for Others	0		0
Machinery and Equipment	66,99,398	New Lift payment and other associated electrical works	15,00,000
IT & Computer Applications etc	65,10,686	Estimated for proposed Cyber Security and Hybrid VC projects in Q4.	3,00,000

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Furniture and fixtures	0		15,00,000
Total	6,38,06,009		6,85,00,000

- B.7.3 He added that the budgetary estimate will be divided equally among the paying members of NRPC.

Decision of Forum

The actual expenditure for FY 2023-24 and budget provision for FY 2024-25 was noted and approved by the NRPC Forum.

B.8 Reimbursement of Expenditure of NRPC Sectt. for FY 2024-25 by the Members of NRPC (Agenda by NRPC Secretariat)

- B.8.1 EE (P), NRPC apprised that RPCs are fully financed by the constituent members as per Ministry of Power, Govt. of India letter dated 23.02.2006 and SOP issued by CEA dated 01.05.2023. Therefore, constituent members are required to pay annual contribution as decided in NRPC meetings from time to time. Annual contribution is decided on the basis of estimated expenditure of next financial year and balance amount in the NRPC fund (if any).
- B.8.2 As per SOP issued by CEA vide letter dated 01.05.2023, all expenditures other than salary shall be met from RPC fund. Expenditure of Salary head shall be met from budget provided by CEA and will get reimbursed from RPC fund to CEA on quarterly basis. Therefore, all the expenditure of RPCs including salary is met from RPC Fund.
- B.8.3 Annual Budget of NRPC Secretariate for FY 2024-25 has been estimated as Rs 6.85 Crs as elaborated in Agenda Item B7 above, in accordance with expenditure planned for FY 2024-25 pertaining to employee compensation, Office Expenses, Maintenance of NRPC office and colony, AMCs for various services etc.
- B.8.4 Considering the likely payments of various bills in March,24 and reimbursements of Rs 45 lakhs to PAO, CEA towards salary bills for the months of January & February,2024, it is estimated that an amount of Rs 1.5 Crore shall remain balance in the NRPC Account. Therefore, actual amount required to be contributed by the NRPC members shall be only Rs 5.35 Cr during FY 2024-25. Considering 44 members (who pays contribution out of total 56 members) of NRPC, it is proposed

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that an amount of Rs 12 lakhs may be contributed by each member of NRPC for FY 2024-25.

- B.8.5 MS, NRPC stated that the above contribution amount of Rs 12 lakhs may be deposited in NRPC account by (30.06.2024), meanwhile day to day expenditure/payments of various OE/recurring expenses, monthly electricity bills etc shall be met from the likely available fund of Rs 1.5 Cr in NRPC account.
- B.8.6 Forum may decide penalty percentage for delay beyond 30.06.2024.
- B.8.7 In view of above, following proposal was put up for the approval:
- i. Membership contribution for the year 2024-25 is proposed to be Rs.12 lakh per member.
 - ii. It is also proposed that members may complete above reimbursement in NRPC fund by 30.06.2024.
 - iii. NRPC Secretariate shall issue demand letters by 10.04.2024 with last date of payment as 30.06.2024.
 - iv. Member may decide suitable penal interest per month on late payment from 1st July, 2024 onwards.

Decision of Forum

After discussion, following were decided:

- i. Membership contribution for the year 2024-25 was decided to be Rs.12 lakh per member.*
- ii. It was also approved that members shall complete above reimbursement in NRPC fund by 30.06.2024.*
- iii. NRPC Secretariate shall issue demand letters by 10.04.2024 with last date of payment as 30.06.2024.*
- iv. Forum decided to continue with earlier decision of penal interest rate as 1% simple interest per month on late payment from 1st July, 2024 onwards.*

B.9 Annual Membership of NRPC for FY 2024-25; Appointment of Chairperson, NRPC and Chairperson, TCC (Agenda by NRPC Secretariat)

- B.9.1 EE (P), NRPC apprised that as per MoP gazette resolution F. No. 23/21/2021-R&R dtd. 03.12.2021, one representative from following organizations are members of NRPC:

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- i. Member (Grid Operation & Distribution), Central Electricity Authority (CEA).
- ii. Central Generating Companies, CTU, NLDC, NRLDC
- iii. State Generating Company, State Transmission Utility (STU), State Load Despatch Centre (SLDC)
- iv. One of the State-owned distribution companies as nominated by the State Government
- v. One distribution company by alphabetical rotation out of the private distribution companies functioning in the region.
- vi. A representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.
- vii. A representative each of every generating company (other than central generating companies or State Government owned generating companies) having more than 1000 MW installed capacity in the region.
- viii. A representative of the generating companies having power plants in the region (not covered in (ii) to (vi) above) by alphabetical rotation.
- ix. A representative of one private transmission licensee, nominated by Central Government, operating the Inter State Transmission System, by alphabetical rotation out of such Transmission Licensee operating in the region.
- x. One member representing the electricity traders in the region by alphabetical rotation, which have trading volume of more than 500 million units during the previous financial year.
- xi. A representative each of every Nodal Agency appointed by the Government of India for coordinating cross-border power transactions with the countries having electrical inter-connection with the region.

B.9.2 Accordingly, list of members for FY 2024-25 is proposed as **Annexure-XXXXV**. Changes are proposed in rotational members only.

B.9.3 Further, NRPC forum was chaired by MD, HVPNL in FY 2023-24. As per alphabetical rotation, Himachal Pradesh government was requested to nominate chairperson of NRPC Forum and TCC Forum for FY 2024-25.

Decision of Forum

After discussion, following were decided:

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- i. Forum requested Himachal Pradesh to expedite nomination of chairperson of NRPC Forum and TCC Forum for FY 2024-25.
- ii. List of members for FY 2024-25 was approved as Annexure-XXXXV.

B.10 Hiring of official vehicle (e-vehicle) for Member Secretary, NRPC on lease basis (Agenda by NRPC)

- B.10.1 EE (P), NRPC apprised that earlier NRPC Secretariate had two vehicles (Maruti Wagon-R and Swift Dzire) on lease for five years starting from 2015. One vehicle was allotted to Member Secretary, NRPC and other vehicle was used as General Purpose Pool vehicle. During the Covid period, the lease of above vehicle expired and NRPC Secretariate had no vehicle for about 3 years. During this period, for all official works NRPC had to request for vehicle from CEA HQ or hired taxi and sometimes vehicles could not be managed due to various meetings/shortage of vehicles in CEA.
- B.10.2 Subsequently, after approval of CEA (then IFD for NRPC), one e-vehicle (Tata Nexon) was hired by NRPC Secretariate on lease for 5 years in August, 2023 from M/s EESL. This vehicle is presently designated as general-purpose pool vehicle which is being used by all officials of NRPC Secretariat for attending meetings/other official works/site visits etc.
- B.10.3 Further, there is requirement of one more vehicle in NRPC Office having good mileage for carrying out inspection of transmission lines, attending meetings and carrying out the protection and communication audit as mandated in IEGC 2023 by CERC.
- B.10.4 It is mentioned that as per GoI Rule, Member Secretary, NRPC (Joint Secretary/Equivalent Officers of GoI) is entitled for one dedicated official vehicle for travel from Residence to Office and other official engagements. In case, Member Secretary, NRPC is allotted dedicated official vehicle, He/She shall not be paid transport allowance.
- B.10.5 Further, as per Ministry of Finance, OM dated 22nd December 2018, the Ministries/ Central Govt. Offices located in Delhi where lease/contract for Petrol/Diesel Vehicles has expired, the Ministries/Departments may consider fresh contract for hiring electric vehicles (**Annexure-XXXXVI**).
- B.10.6 In view of the above, EE (P), NRPC proposed to hire one e-vehicle (Tata Nexon EV) with a mileage of 325-465 km for a period of 5 years under wet lease (inclusive of

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driver charges) through Gem portal. The Driver cost and maintenance of the vehicle shall be included in the contract. The monthly estimated cost shall be approx. Rs 55000/-(including taxes) and Driver cost shall be about Rs 25000/-per month. Thus, annual expenditure for hiring the above vehicle shall be about Rs 10 lakh.

B.10.7 After delivery of this vehicle to NRPC, one vehicle shall be allotted to Member Secretary, NRPC as dedicated vehicle and his/her entitled travelling allowance will be withdrawn. Other vehicle shall be used as general-purpose pool vehicles including inspection/audit visit purpose etc.

B.10.8 As per the SoP issued by CEA on 01.05.2023, NRPC forum has been designated as IFD for expenditure of NRPC Secretariat as given below;

“CEA shall be IFD for only those budget heads (Salary) which has been allocated by CEA. For all other expenditure, approvals shall be taken in RPC meeting only”.

Decision of Forum

NRPC forum approved the proposal of Hiring of official vehicle (e-vehicle) for Member Secretary, NRPC on lease basis.

B.11 Hosting of next physical TCC & NRPC meeting (agenda by NRPC Secretariat)

B.11.1 It was deliberated that next physical TCC & NRPC meeting may be hosted by M/s Adani Power Rajasthan Ltd in the month of June, 2024.

B.11.2 Date and venue may be decided by MS, NRPC.

Decision of Forum

Forum noted & appreciated the hosting of next physical meeting by M/s Adani Power Rajasthan Ltd.

Attendance 49th TCC meeting of NRPC Date: 29.03.2024

Sr. No.	Organization	Name	Designation	Email
1	HVPNL	Sh. M. M. Matta	Chairperson, TCC, NRPC	directorprojects@hvpn.org.in
2		Neeraj Hooda	Xen, HVPNL	neerajhooda1981@gmail.com
3		DEEPAK SARIT	XEN SS	xenplgss@hvpn.org.in
4	CEA	Rishika Sharan	Chief Engineer (NPC)	rishika@nic.in
5	NRPC	V K Singh	MS	vk Singhcea@gmail.com
6		D.K. Meena	SE	dharmendra.cea@gov.in
7		Reeturaj Pandey	EE	pandeyr.cea@gov.in
8		Pushpa Rani Rao	PSO	pushprao@gmail.com
9		Praveen Jangra	EE	praveen.cea@gov.in
10		Vipul Kumar	AEE	vipul.cea@gov.in
11		Lokesh Agrawal	AEE	lokesh.cea@gov.in
12		Priyanka Patel	Manager	priyankapatel@powergrid.in
13	WRPC	Sh. Deepak Kumar	Member Secretary	ms-wrpc@nic.in
14	UJVNL	Dr. Sandeep Singhal	MD	
15		Ajay Kumar Singh	Director(O)	doujvnl@gmail.com
16		K. K. Jaiswal	GM-C	kkjaiswal99@gmail.com
17	BYPL	Amit Pundir	DGM	amit.pundir@relianceada.com
18		Haridas Maity	AVP	haridas.maity@relianceada.com
19	LPGCL	Rudra Narayan Bedi	President , O&M	rnbedi.ltp@lpgcl.com
20	HPPTCL	Rajiv Sood	MD	rajivsoodhp@gmail.com
21	HPPCL	Er. Rohit Sharda	GM(E)	gm_elect@hppcl.in
22	HPGCL	Sh. Umesh Kumar Aggarwal	Director (T)	dirtech@hpgcl.org.in
23		Sh. Atul Khanna	SE(T)	atul.khanna.hpgcl@gmail.com
24	BBMB	Er. Amarjit Singh Juneja	Member (Power)	junejaas.aj@gmail.com
25		Er. Ajay Kumar Sharma	Special Secretary	
26		Er. Ruchi Sharma	Director (Power Reg)	ajrukasa@gmail.com
27		Er. Sanjay Sidana	DD(Comm)	dydcom@bbmb.nic.in
28	RVPN	Sh. S.C. Meena	Director (Oper.)	mhi4371@gmail.com
29	Rajasthan SLDC	Sh. Manish Athaiya	CE (LD)	athaiya.manish@rvpn.co.in
30		Smt. Sona Shishodia	SE (SOLD)	sonashishodia0601@gmail.com
31	JSW	Abhay Yagnik	Head-BD	abhay.yagnik@jsw.in
32	UPRVUNL	Deepak Kumar	CE(TO)	cgm.to@uprvunl.org
33		Brijesh Kumar Singh	EE (TO)	cgm.to@uprvunl.org
34		Suneel Kumar	EE (TO)	cgm.to@uprvunl.org
35	UPCL	Shishir Shrivastava	SE (A) to MD	ee.shishirupcl@gmail.com
36		Pankaj Sharma	SIE (A) to MD	pankaj.sharma94@gmail.com
37	NHPC	S Adhikari	ED (O&M) & ED (RO, Jammu)	sadhikari@nhpc.nic.in
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this region but the new transmission network is not able to come to fruition due to ROW issues in that area. Therefore, some parallel supply of power to feed Kichha and Rudrapur may be planned to reduce dependency on the existing network in that region.

A.2.4 Further, he also asked PTCUL to share with them the rating of HTLS conductor they are planning for replacement and advised PTCUL to plan it in consultation with Powergrid after taking into consideration the rating of bay equipment's.

A.2.5 MS, NRPC asked PTCUL to share with CTU the complete proposal along with the complete ratings of bays equipment's at both ends in consultation with Powergrid.

A.2.6 Executive Director, NRLDC stated that PTCUL should also explore and plan for reliability in power supply by planning additional lines apart from re-conductoring works. Further, regarding funding of scheme, PTCUL can execute project themselves or through PSDF funding. PTCUL should also plan for comprehensive study for conductor replacement and new transmission requirement in their network.

A.2.7 Decisions of the Forum:

- *Forum recommended the proposal of replacement of ACSR Panther conductor in 132KV Sitarganj (PGCIL)- ELDECO Sitarganj single circuit line (22.0 Kms) and 132 KV Sitarganj – Kichha line (31.5Kms) with HTLS conductor.*
- *Further, PTCUL was asked to submit to CTU the complete ratings of bays equipment's at both ends along with comprehensive proposal after consultation with POWERGRID.*
- *Considering increased demand in future, forum also advised PTCUL to plan remedial measures to make the transmission system 'N-1' compliant.*

A.3 Replacement of existing 220/132kV 100 MVA ICT at Sitarganj with Regional Spare 220/132kV 160MVA ICT with provision of the LT Auxilliary supply from the tertiary (Agenda by POWERGRID)

A.3.1 Representative from Powergrid apprised forum that there are 03 Nos. 100MVA 220/132kV ICTs commissioned at 220/132kV Sitarganj substation and none of them has tertiary winding therefore auxiliary supply of Sitarganj substation is catered through 02 Nos. 11kV UPCL LT Supply Feeder sources available at Sitarganj Substation.

A.3.2 Further, he submitted that both these LT Supply Feeder sources of UPCL are not reliable in operation and there are frequent interruptions of supply(especially during the summer season) due to fault in the 11kV feeders which causes frequent switching of the auxiliary supply at Sitarganj substation.

A.3.3 Powergrid also mentioned that in July 2022, 01 No. 160 MVA 220/132kV ICT(having the provision of the LT Auxilliary Supply from the tertiary)has been commissioned as

Regional Spare ICT at Sitarganj Substation of NR-3 under the project “Provision for Spare ICTs in Northern Region”.

- A.3.4 Therefore, to mitigate the above problem Powergrid requested for Replacement of existing 01 no. 100MVA 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) and keeping the replaced 100 MVA 220/132 kV ICT as regional spare.
- A.3.5 CTU mentioned that for system strengthening/reliability regional spare ICT can be used as replacement. He further stated that generally, in practice for auxiliary supply at sub-station one source of supply is through state discom and other supply is through tertiary winding of ICT.
- A.3.6 Powergrid highlighted that since this being an ISTS project expenditure will be through ADCAP.
- A.3.7 Executive Director, NRLDC stated that UPCL may further intimate about the actions being taken at their end to minimise outages of auxiliary supply. As per CERC (Sharing of inter-State Transmission Charges and Losses) Regulations, 2020, cost for transformer component is to be borne by the concerned State.
- A.3.8 NRLDC representative stated that as decided in 63rd NRPC meeting, POWERGRID can share list of regional spare availability with NRPC and it can be uploaded on NRPC website for benefit of all stakeholders. MS NRPC also asked POWERGRID to provide the aforesaid list.

A.3.9 Decisions of the Forum

- *For system strengthening/reliability, Forum agreed to the Replacement of existing 01 no. 100MVA 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) and keeping the replaced 100 MVA 220/132 ICT as regional spare.*
- *As per CERC (Sharing of inter-State Transmission Charges and Losses) Regulations, 2020, cost for transformer component is to be borne by the concerned State.*
- *Decision on deemed availability would be dealt separately by NRPC Sectt. after examination of the cited matter as per CERC(Terms and Conditions of Tariff) Regulations, 2019 (as applicable).*

A.4 System Protection Scheme (SPS) for BARA TPS (Agenda by UPSLDC)

- A.4.1 SE(O), NRPC apprised forum that SPS for Bara TPS has been deliberated in detail in 206th and 207th OCC meeting and the revised logic has been finalized in 207th OCC meeting (held on 19.05.2023).

उत्तरी क्षेत्रीय विद्युत समिति की 67^{वीं} बैठक**67th MEETING OF NORTHERN REGIONAL POWER COMMITTEE**Time & Date of meeting: 30th June 2023

Venue: Video-conferencing

Minutes of Meeting

Member Secretary, NRPC welcomed the Chairperson, NRPC and MD, HVPN. Further, he welcomed participants from all power sector utilities of Northern Region connected in the meeting. He requested Chairperson, NRPC for opening remarks.

Chairperson, NRPC highlighted the need for arriving on consensus on agenda on the list and requested all utilities for active deliberation.

A.1 Approval of MoM of 66th NRPC meeting

A.1.1 EE (P), NRPC apprised that minutes of 66th NRPC meeting (held on 30.05.2023) has been issued vide letter dtd.13.06.2023. Comments, received from POWERGRID on minutes were discussed and forum approved the MoM with inclusion of POWERGRID comments.

Decision of the Forum:

Forum approved the issued MoM with following amendment:

Para No. of MoM Issued	Text as per MoM Issues	Amended Text
A.3.9 Bullet:1	For system strengthening/ reliability, Forum agreed to the Replacement of existing 01 no. 100MVA 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) and keeping the replaced 100 MVA	For system strengthening/ reliability, Forum agreed to the Replacement of existing 01 no. 100MVA 220/132kV ICT at Sitarganj with Regional Spare 160MVA 220/132kV ICT (having the provision of the LT Auxiliary Supply from the tertiary) and keeping the replaced 100 MVA

	<i>220/132 ICT as regional spare.</i>	<i>220/132 ICT as regional spare. The estimated expenditure of Rs 1.25Cr (excluding taxes) toward replacement of ICT and providing tertiary bay equipment can be booked under ADDCAP in existing project.</i>
<i>A.20.2</i>	<i>Accordingly, following additional scope may be included in the UNMS Project cost & AMC for NR UNMS scheme for amendment in the existing contracts: a. The BOQ of Workstation Console along with other associated software and hardware such as firewall, router, switch, furniture etc. b. Bandwidth connectivity & its recurring charges for CTUIL HQ Office.</i>	<i>Accordingly, following additional scope may be included in the UNMS Project: a. The BOQ of Workstation Console along with other associated software and hardware such as firewall, router, switch, furniture etc. through the amendment in the ongoing UNMS contract. b. Bandwidth connectivity & its recurring charges for CTUIL HQ Office under the O&M expenses of this project.</i>

A.2 Transmission system strengthening for interconnection of Bhadla-III & Bikaner-III complex (agenda by CTUIL)

- A.2.1 CTUIL apprised proposal of 765 kV Bhadla-III – Bikaner-III D/c line along with 240 MVAR switchable line reactor for each circuit at Bhadla-III end (~150 km) having estimated cost of **Rs. 1382 Cr.** Details are attached as **Annexure-I.**
- A.2.2 He highlighted that 765 kV Bhadla-III – Bikaner-III D/c tie interconnection shall provide following advantages:
- i. Optimal utilization of EHVAC transmission system beyond Bikaner-III PS while providing flexibility of power transfer from Bhadla/Bikaner RE clusters.

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delivery of UFR has started. Further, he intimated that UFR installation would be completed by September 2023.

- 6.3. AEE(SS) apprised forum that in the previous OCC meeting, OCC Forum in principle approved the revised Delhi islanding scheme and asked DTL to bring the scheme in upcoming 68th NRPC meeting for final approval from the NRPC board.
- 6.4. With regard to Kullu-Manali Islanding scheme, representative from HPSLDC apprised forum that there were some shortcomings in the format submitted by HPSEB. HPSLDC has reverted to the HPSEB asking them to address these shortcomings at the earliest and re-submit the cited islanding scheme at the earliest.
- 6.5. With regard to Shimla-Solan islanding scheme representative from HPSLDC apprised forum that they have done correspondence with BHEL regarding switching of Bhaba HEP to automatic mode during the situation of islanding formation but no response has been received from BHEL till date.
- 6.6. Further, with regard to Patiala-Nabha Power Rajpura islanding scheme representative from Punjab SLDC informed that technical specifications for procurement of UFR relays have been submitted for approval of their management.
- 6.7. Representative from Rajasthan STU intimated forum that preparation of DPR for Jodhpur-Barmer Rajwest and Suratgarh islanding scheme is expected to be finalized by the October 2023 and thereafter would be shared with NRPC Sectt. and NRLDC.

7. Coal Supply Position of Thermal Plants in Northern Region

- 7.1. In the meeting, NRPC representative apprised the forum about the coal stock position of generating stations in northern region during current month (till 07th August 2023).
- 7.2. Average coal stock position of generating stations in northern region, having critical stock, during first seven days of August 2023 is as follows:

Station	Capacity (MW)	PLF % (prev. months)	Normative Stock Req. (Days)	Actual Stock (Days)
TALWANDI SABO TPP	1980	61.14	22	2.7

- 7.3. In the meeting, above mentioned generating station was requested to take adequate measures.

8. In principle approval for Insulator replacement of 500kV HVDC Ballia-Bhiwadi (Agenda by Powergrid NR-3)

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- 8.1. In the meeting, Powergrid NR-3 intimated that Presently, insulator cleaning and insulator replacement with CLR is being carried out at major crossings and polluted stretches in $\pm 500\text{kV}$ HVDC Ballia-Bhiwadi based on previous history.
- 8.2. With the use of CLR Insulators, chances of tripping/auto re-closer due to deposition of dust, bird excreta etc can be minimized. The same results have been achieved in $\pm 500\text{kV}$ HVDC Rihand-Dadri transmission line. To avoid frequent tripping/breakdown, porcelain insulator at all the balance locations are required to be replaced by CLR insulator.
- 8.3. In view of system improvement and grid stability, Powergrid NR-3 requested that proposed outage of HVDC Ballia-Bhiwadi Pole-1&2 for approx. 10 days each (one by one) may be considered as deemed available in view of system improvement action at POWERGRID's own cost.
- 8.4. MS, NRPC was of view that the request of Powergrid NR-3 for consideration of proposed outage of HVDC Ballia-Bhiwadi Pole-1&2 for approx. 10 days each (one by one) as deemed available in view of system improvement action at POWERGRID's own cost. would be examined by NRPC Sectt.. as per CERC tariff regulation, 2019.
- 8.5. CTU representative stated that Powergrid may be advised to be cautious in future of planning such activity before the reversal of HVDC link, so as to avoid RE curtailment.

Decision of the OCC Forum:

- *The request for deemed availability of the proposed shutdown of HVDC Ballia-Bhiwadi Pole-1&2 for approx. 10 days each (one by one) would be examined by NRPC Sectt.. as per CERC tariff regulation, 2019.*

9. Operational Perspective of NEA Multi-terminal 800 KV HVDC AGRABNC HVDC Transmission System (Agenda by Powergrid NR-3)

- 9.1. In the meeting, Powergrid NR-3 intimated that during the winter season, reduced power levels are available for the HVDC link and for reverse direction, mono pole operation is being carried out as per instruction of NLDC with metallic return mode through the conductor of another pole.
- 9.2. Further, he stated that In view of negligible voltage on metallic return conductor during monopole operation, line becomes vulnerable for theft of line materials (spacer, corona ring etc). This condition of conductor (very low voltage) can also be easily identified from ground through corona sound.
- 9.3. Henceforth, he mentioned that it is required to run NEA HVDC poles in bipole operation only to prevent theft of transmission line fittings and accessories, avoid monetary loss & unnecessary tripping of HVDC lines and to enhance system reliability.

Annexure-III
file pls
B

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Northern Regional Power Committee
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No. NRPC/SE(O)/Insulators/14/11/08 1600-1615

Dated: 25.11.08

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6. MD, PTCUL, Fax No 0135-2768867
7. Chairman, HPSEB, Fax No 0177-2813563
8. Principal Secretary(power), J&K, Fax No 0191-2545447
9. Chairman, BBMB, Chandigarh, Fax no 0172- 2549186, 2652820
10. Chief Engineer, Electricity Department, Chandigarh
11. Mr. B. A. Chaudhari, Power Link Transmission Limited, Floor-Kanchen
junga Building 18 Barakhamba Road, New Delhi
12. GM(O&M), PowerGrid, NR-I/ NR-II

Subject: Minutes of the meeting taken by Member Secretary, NRPC on 14.11.08 for cleaning and replacement of porcelain insulators by polymer insulators in Northern Region.

A special meeting was taken by Member Secretary, NRPC on 14.11.08 for cleaning and replacement of porcelain insulators by polymer insulators in Northern Region. A copy of summary record of discussions of the above meeting is enclosed for information and necessary follow-up please.

R.P.
(R.P. Aggarwal)
S.E (O)

Copy for information to :

1. SA to Chairperson, CEA
2. SA to Member (GO&D), CEA

Summary record of meeting regarding cleaning and replacement of porcelain insulators with polymer insulators in Northern Region taken by Member Secretary (M.S.), NRPC on 14.11.08

List of participants is enclosed at Annex I

M.S., NRPC welcomed the participants of special meeting to discuss the progress of Insulators replacement and pre-winter maintenance of 400 kV and 220 kV lines of Northern Region. M.S., NRPC stressed that constituents should expedite the replacement of porcelain insulators with Polymer on the critical lines as decided in the meeting taken by Secretary (power) MoP on dated 9th March, 08 and Chairman CEA, on dated 30th April, 08 and also adhere to the target as decided in the NRPC meeting held on 30th September, 08. He requested the constituents to give the status on the progress made so far.

DTL

DTL stated that they have plan to replace the insulators of 400 kV lines of Delhi with Polymer insulators for which they have given the contract to POWERGRID. POWERGRID have called the tender for procurement of Polymer insulators which was to open on 7th Nov., 08. On the query from NRPC, DTL & POWERGRID representative agreed to submit the present status in this regard. The installation will be taken up after the procurement for which a separate tender would be invited. DTL stated that replacement by polymer insulators cannot be completed in this winter.

For pre-winter maintenance of 400 kV & 220 kV lines, they have taken up hot line washing as well as manual cleaning of insulators. This is likely to be completed by Dec, 08. DTL stated that in line with recommendation of inquiry committee dated 27th Jan 07, they are providing bird guards on their lines. The work of providing bird guards on 15 towers out of 50 towers has been completed. The balance work would be completed within one month.

BBMB

BBMB stated that procurement order for 11000 anti-fog insulators have been placed for which delivery is expected in December, 2008 and work of replacement shall be done by Feb., 09. In addition to above, tender for 37,000 anti-fog insulators have been opened. Purchase order for the same is likely to be placed in Dec., 08 and supply is expected in Jan., 09. The work of replacement shall be carried out in Feb-March 09. They intimated that anti-fog insulators have been installed on Panipat-Dhulkot circuit I&II and 220kV switch yard at Panipat. BBMB intimated that specification for polymer insulators to be installed by them is under finalization and they are likely to complete the installation work of polymer insulators by September, 09.

HVPNL

HVPNL stated that they have planned to install anti-fog insulators on their 14 nos. 220 kV D/C lines in NCR area. They have issued LoI for 58050 anti-fog insulators and delivery is expected by March, 09. They will submit the installation programme shortly to NRPC.

UPPTCL

UPPTCL stated that they are planning to replace the polymer insulators on four nos. of 400 kV lines and nine nos. 220 kV lines and they are procuring around 2555 nos. of polymer insulators. Tenders have been opened and order is likely to be placed by Dec., 2008.

RAJASTHAN

RAJASTHAN stated that they are replacing 200 anti-fog insulators at 15 locations on BTPS-Alwar line and work is likely to be completed by 15th Dec., 2008.

POWERLINKS

On a query by Powerlinks, SE (O) clarified that the issue of capitalization of cost of replacement was discussed at the special Northern Region Power Committee (NRPC) Meeting held on 22.07.08, wherein it was agreed that the PGCIL might take up the work of replacement of insulators by polymer insulators. The expenditure incurred by PGCIL may be capitalized and recovered through tariff.

Powerlinks informed that their lines were commissioned in May, 06 and as such porcelain insulators are in good condition, however, if these are being replaced to increase reliability of line during heavy fog in winter, its expenditure ought to be capitalized and recovered through tariff as agreed for PGCIL. NRPC confirmed that the same would also be applicable to Powerlinks. With regard to "DEEMED AVAILABILITY", for long outages needed for replacement of insulators, it was informed that the matter would be appropriately dealt with by the Member Secretary, NRPC, as and when situation arises.

POWERLINKS stated that they have two lines in NR namely Bareilly-Mandola D/C line. There are 118-suspension tower and 52 tension towers. The insulators for these lines are expected to be delivered by Dec., 08 and they are planning to replace these insulators by Jan., 09 and to replace the polymer insulators on these lines they would need around 28 days outage.

POWERGRID

POWERGRID NR II stated that they have replaced 2000 insulators on their lines namely Hisar-Bawana and Bawana-Bahadurgarh. POWERGRID have placed orders for about 36,000 Polymer insulators and delivery is expected in parts starting Nov., 08. 4000 nos. are expected in Nov., 08, 5500 in Dec., 08 and balance in Jan., 09. The work of installation would be taken up in the next month.

POWERGRID, further, informed that manual cleaning of lines in NCR is in progress and would be completed by 15.12.08. Besides this, they have started helicopter washing of insulators also w.e.f 1.11.08 on the critical lines.

They have completed washing of insulators of 400 kV Meerut-Mandola I and 400kV Dadri-Mandola I. line. The Helicopter washing of 400 kV Dadri-Panipat I is under progress. The programme of Helicopter washing is placed at Annex.-II.

NRLDC

NRLDC stated that as per historical data they have found that whenever Relative Humidity (RH) increase to 85% or above and temperature falls below 10 degree Celsius, the chances of formation of fog increases which call for alertness on the part of O&M staff to avoid fog related trippings. They have received weather data from DTL's Minto Road station, Patiala station and Lucknow station. Data from other stations are not available through ULDC scheme because of non-functional of weather stations of the constituents. NRLDC emphasized that operators should keep a close watch on RH and temperature and when there are chances of fog formation, it should be ensured that suitable and competent officers and staff are available at the stations.

NRLDC stated that Pre-winter maintenance schedule of 400 kV UPPTCL lines and 220 kV lines of Punjab, Haryana, J&K have not been received. These constituents may expedite in submitting their maintenance schedule so that an appropriate shutdown schedule is prepared.

NRLDC stated that there are around 27 substations/Generating stations without RTU's, and some of the existing RTU's are not reporting/functioning. Constituent may connect these RTUs to the system. The Synchronization facility at the substations may be tested and be kept ready during winters.

Manual Cleaning of Insulators

M.S., NRPC emphasized that constituents should expedite cleaning of insulators manually and should complete the exercise by 15th Dec 08. S.E.(O), NRPC stated that the work is also being monitored by the OCC sub-committee of NRPC and he requested constituents to submit programme to NRLDC for coordinated shutdown schedule.

Hot Line Washing

DTL showed clips on Hot line washing undertaken by them in their 400 kV lines. DTL emphasize that hot line washing is economical, effective and fast method of insulator cleaning. UPPTCL requested DTL to share details of agency to which they have outsourced the work so that they may also avail hot line washing facility.

M.S., NRPC stated that constituents may submit the details of procuring and replacement of polymer insulators, cleaning/washing of insulators as per the pro-forma circulated in the meeting to NRPC Secretariat by 20 Nov., 2008. These Performa have also been available at NRPC website. Thereafter, the updated status should be submitted to NRPC every week on Monday through e-mail.

Meeting ended with thanks to the chair.

LIST OF PARTICIPANTS IN THE SPECIAL MEETING, AT NRPC ON 14-11-08 ON REPLACEMENT OF INSULATORS.

In Chair, Sh A.K Aggarwal, MS, NRPC

Organization	Name of Participant	Designation	Telephone Number	E- Mail Address
NRPC	R.P Aggarwal	SE(O)		
	K.K Arya	SE(S)	9810455760	kkarya_2001@rediffmail.com
	Rishika Saran	EE(O)		
	Vikram Singh	EE(O)		
	Sarita Sewak	EE(O)		
DTL	A.K Kaul	GM,SLDC	9810299692	ashokk_kaul@yahoo.com
	P.P Singh		9971577677	
	Loveleen Singh		9810299686	mgr.txl@delhitransco.gov.in
BBMB	Sushil Kumar Gupta		9872885993	shillu33@yahoo.co.in
HVPL	R.C Malhotra	SE	9357214739	rcmalhotra_chd@yahoo.com
RVPL	D.C Gupta		9414061474	
UPPTCL	Rajesh Kumar		9415005864	aarkay49@gmail.com
POWERGRID	Bhairab Pd. Gantayat	GM(O&M)	26564734	bpgantayat@gmail.com
	Sanjeev Singh	GM(OS)	0124-2571916	sanjeev@powergrid.com
	N.L Jain	Manager	9873119512	nljain_99@rediffmail.com
	R.B Singh		9416600522	rbsingh@powergrid.com
POWERLINKS	B.A Chaudhari	COO	9810221691	bachandhari@powerlinks.co.in
NRLDC	D.K Jain	DGM	9910344127	dkj2009@yahoo.co.in
	Alok Kumar	Manager	9999039321	alokwaghela@hotmail.com

SCHEDULE FOR CLEANING OF INSULATORS THROUGH HELICOPTER

Annex-#

Mandola Helipad

Sl. No.	Name of the line	Line configuration	Proposed line section in KM	No. of days	Date		Remark
					from	To	
1	400 KV D/C Meerut-Mandola-I	V-V-V	30	6 Days	1st Nov.	8th Nov.	Completed
2	400 KV D/C Dadri-Mandola-I	V V-VV-VV	20	7 days	7th Nov.	13th Nov.	Completed
3	400 KV S/C Dadri-Panipat-I	I-I-I	23	6 Days	14th Nov.	19th Nov.	Mandatory 100 hours maintenance from 11th to 13th Nov.
4	400 KV S/C Dadri-M'kotla	I-I-I	22	5 days	20th Nov.	24th Nov.	

Meerut Helipad

1	400 KV D/C Meerut-Mandola-I	V-V-V	30	6 Days	25th Nov.	30th Nov.	
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Muradnagar Helipad

1	400 KV D/C Dadri-Mandola-I	V V-VV-VV	10	4 Days	4th Dec.	7th Dec.	
2	400 KV S/C Dadri-Panipat-I	I-I-I	36	6 Days	8th Dec.	13th Dec.	
3	400 KV S/C Dadri-M'kotla	I-I-I	24	4 days	14th Dec.	17th Dec.	Mandatory 100 hours maintenance from 18th to 19th Dec.

Dadri Helipad

1	400 KV S/C Dadri-Panipat-I	I-I-I	20	5 Days	20th Dec.	24th Dec.	
2	400 KV S/C Dadri-M'kotla	I-I-I	10	4 days	25th Dec.	28th Dec.	
3	400 KV D/C Dadri-Mandola-I	V V-VV-VV	10	3 Days	29th Dec.	31st Dec.	
4	500 KV HVDC Rihand Dadri Pole-I & II	V V-VV	25	6 Days	1st Jan.	6th Jan.	

Panipat Helipad

Sl. No.	Name of the line	Line configuration	Proposed line section	No. of days	Date		Remark
					from	To	
1	400 KV S/C Dadri-Panipat-I	I-I-I	8	4 Days	7th Jan.	10th Jan.	
2	400 KV S/C Dadri-Malerkotla	I-I-I	12	4 Days	11th Jan.	14th Jan.	
3	400 KV S/C Dadri-Panipat-II	I-I-I	6	4 Days	15th Jan.	18th Jan.	Mandatory 100 hours maintenance from 18th to 19th Jan.

Ballabgarh Helipad

1	400 KV S/C Agra-Ballabgarh	I-V-I	30	5 Days	22nd Jan.	26th Jan.	
2	400 KV D/C Mathpuri-Ballabgarh-I	I-I-I	30	5 Days	27th Jan.	31st Jan.	
3	400 KV S/C Kanpur-Ballabgarh	I-I-I	30	5 Days	2nd Feb.	6th Feb.	
4	400 KV S/C Ballabgarh-Bhiwari	I-I-I	30	6 Days	7th Feb.	12th Feb.	
TOTAL			408				

27th TCC & 30th NRPC Meetings (27th and 28th Feb, 2014) – Minutes

replacement would be completed by September, 2014. TCC advised NPCIL to replace the relays by April, 2014. Representative of NPCIL agreed for this.

NRPC Deliberations

B.11.3 Members noted the deliberations in the TCC.

B.12 Augmentation of Reactive Compensation at 400/220 kV Bahadurgarh Sub-station.

TCC Deliberations

B.12.1 Representative of POWERGRID stated that based on the study of voltage profile at 400 kV Bahadurgarh Bus, it was observed that during considerable period of time, 400 kV Bus voltage remains more than 415kV. High voltage profile leads to undue stress on transformers and other Substation equipment. Further, he informed that the loading on the ICTs remains in the range of 70-80 MW and the voltage remains 37% higher than the normal. With this loading, ICTs either operate on continuous over-flux alarm or trip many times on over-fluxing. He requested for permission to switch off one ICT at Bahadurgarh Sub-station as immediate solution for controlling the voltage and installation of 125 MVAR reactor as a long term solution. In view of the above, he proposed that one(1) no. 420kV 125 MVAR Bus Reactor be provided at 400/220kV Bahadurgarh substation for containing Overvoltage. He requested Members to approve the proposal.

B.12.2 Representative of NRLDC stated that the high voltage phenomena was prevailing everywhere in the grid as such shut down of ICT will not make any difference in improving voltage profile. He opined that there could be problem with the tap settings and suggested for transformer Tap changing to control the voltage.

B.12.3 TCC recommended that (i) POWERGRID should take up the issue with the Standing Committee on Power System Planning, (ii) In the meantime Haryana should explore the possibility of rearranging the loads for enhancing transformer loading and (iii) HVPNL would confirm that shunt capacitors had been switched off.

NRPC Deliberations

B.12.4 NRPC concurred with the recommendations of TCC.

B.13 Replacement of Porcelain Insulators by Long Rod Polymer Insulators on 400 kV Mandola - Bareilly Ckt no. 1&2.

TCC Deliberations

B.13.1 Member Secretary, NRPC informed that in the year 2009-10, POWERLINKS had carried out replacement of porcelain insulators with polymer insulators in 60 km stretch of the 400 kV Mandola - Bareilly Ckt no. 1&2 from Mandola end, which proved to be the best corrective action for reducing the fog related tripping of line. POWERLINKS had now planned to replace the existing Porcelain Insulators by Polymer Insulators up to Ganga River crossing span, which is approx. 42 Kms. in order to avoid tripping of above lines during winter season. The estimated cost for replacement of porcelain insulator was Rs. 1.5 crores which would be capitalised for the tariff purposes. He added that the above proposal was discussed during the 96th OCC meeting held on 17.02.2014 and OCC had recommended the proposal of POWERLINKS for approval of NRPC. He requested Members to approve the same.

B.13.2 TCC agreed with the proposal of POWERLINKS and recommended for approval of NRPC.

NRPC Deliberations

B.13.3 NRPC approved the proposal of POWERLINKS.

B.14 Commissioning of 765 kV Gwalior-Phagi and 765 kV Phagi-Bhiwani lines

TCC Deliberations

B.14.1 Representative of NRLDC stated that during the 26th TCC and 29th NRPC meeting, it was decided that till the commissioning of 765 kV Gwalior-Phagi and Phagi-Bhiwani lines, the SPS for limiting the loading to 1000 MW on each ckt. Of the 765 kV Gwalior-Agra would continue. It was informed that the lines were likely to be commissioned by March 2014. He stated that situation had been compounded as 2nd unit of Sasan was put under commercial operation and Rihand stage # 3 generation would also be wheeled through Western Region. Therefore, the connectivity between Western and Northern Region need to be enhanced at the earliest. In this context, he also drew attention towards the commissioning of 400 kV Kawai-Bassi-line bypassing 765 kV Anta & Phagi substations, which indicates that Phagi sub-station is still not complete. Reference to the meeting held on 15th January 2014 convened by CTU regarding interim arrangement of Kawai evacuation was also made.

B.14.2 Representative of RRVPNL stated that the Bassi-Phagi-Anta-Kawai line presently charged at 400 kV would be charged at 765 kV first and then bays for 765 kV Gwalior-Phagi -Bhiwani lines would be available by June, 2014. Representative of POWERGRID stated that the target for 765 kV Gwalior-Phagi - Bhiwani lines was also June, 2014 as some wild life related issues were involved.

भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

सं. उक्षेविस/ वाणिज्यिक/ 209/ आर पी सी (36 वीं)/2016/1577-1665
No. NRPC/ Comm/ 209/ RPC (36th)/2016/

दिनांक : 17 फरवरी, 2016
Dated: 17th February, 2016

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य
Members of NRPC/TCC

विषय: उत्तरी क्षेत्रीय विद्युत समिति की 36 वीं तथा तकनीकी समंवय उप-समिति की 32 वीं बैठक का कार्यवृत्त।

Subject: 36th meeting of Northern Regional Power Committee and 32nd meeting of TCC – Minutes.

महोदय / Sir,

उत्तरी क्षेत्रीय विद्युत समिति की 36 वीं बैठक दिनांक 24 दिसंबर, 2015 को तथा तकनीकी समंवय उप-समिति की 32 वीं बैठक दिनांक 23 दिसंबर, 2015 को गोवा में आयोजित की गयी थी। इन बैठकों के कार्यवृत्त की एक प्रति आपकी सूचना व आवश्यक कार्यवाही हेतु इस पत्र के साथ संलग्न है।

The 36th meeting of Northern Regional Power Committee was held on 24th December, 2015 and 32nd meeting of TCC was held on 23rd December, 2015 at Goa. A copy of the minutes of the meetings is enclosed herewith for favour of information and necessary action.

भवदीय/Yours faithfully,

प्रकाश मस्के

(पी.एस. मस्के) 17/2/2016

(P.S. Mhaske)

सदस्य सचिव

Member Secretary

D.1.2 Implementation of 220/66kV substation in Chandigarh along with Chandigarh–Panchkula (PG) 220kV D/c line.

D.1.2.1 CTU POWERGRID informed that the establishment of a 2 20/66kV substation in Chandigarh along with Chandigarh–Panchkula(PG) 220kV D/c line was approved in the 33rd NRPC meeting held on 11/11/2014.

D.1.2.2 During the meeting, HVPNL had informed that they intend to construct a 220kV substation in Haryana en-route Chandigarh-Panchkula (PG) 220kV D/c line. Anticipating severe R-o-W in the proposed route, HVPNL proposed that provision of M/c towers to be kept in line traversing through Haryana. Subsequently, during the 35th Standing Committee meeting of Northern Region, following minor modifications were agreed:

- The substation site is proposed at Hallo Majra/ Raipur Kalan instead of Sector 47. Therefore name of substation to be recorded as Chandigarh substation instead of Sector 47, Chandigarh.
- Further as proposed by HVPNL the stringing on the Multicircuit portion of Chandigarh–Panchkula 220kV D/c line in Haryana would be carried out later on by HVPNL for taking out line to their 220kV Substation. HVPNL also requested for provision for space for two numbers of bays at 400kV Panchkula.

D.1.2.3 Further, Panchkula- Chandigarh 220kV D/c line would be a combination of overhead line & 220kV cable (considering severe R-o-W issue in Chandigarh area) as agreed in 33rd NRPC meeting held on 11/11/2014.

D.1.2.4 Members of NRPC agreed to the proposal.

D.1.3 LILO of 220 kV Dhauliganga - Pithoragarh (PG) for construction of 400/220kV GIS S/s at Jauljibi, Pithoragarh and proposed 2x100 MVA, 220/132kV GIS S/S at Almora: NRSS XXXVII scheme.

D.1.3.1 Representative of CTU POWERGRID stated that during the 36th Standing Committee Meeting of NR held on 13/7/2015, some minor modifications in NRSS XXXVII scheme like change in transformer size at 400/220kV Jauljivi substation from 2X315MVA, 3 phase units to 7X105MVA single phase units, inclusion of 2 Nos. of 400kV bays at Bareilly (PG), 2 Nos. of 63MVAR switchable line reactors in Bareilly - Jauljivi 400kV D/c line instead of 125MVAR Bus Reactor at 400/220kV Jauljivi substation etc. were agreed. Keeping above in view, the total scope of the scheme under ISTS is as given below:

NRSS XXXVII

- (i) Creation of 400/220kV, 7X105MVA GIS Substation in Jauljivi area under ISTS by LILO of both ckts. of 400kV Dhauliganga-Bareilly (presently charged at 220kV) at 400/220kV Jauljivi(PG) [Incoming

line from Dhauliganga shall be charged at 220kV & outgoing to Bareilly shall be charged at 400kV].

The 400/220 kV Jauljivi substation to have the following provision:

400 kV side

- a. 7*105 MVA Single Phase ICTs along with ICT bays
- b. 2 nos. of line bays
- c. 2X63MVAr switchable line reactors in Bareilly-Jauljivi 400kV D/c at Jauljivi end for providing voltage control under various operating conditions. These 63MVAr line reactors shall be taken up as single phase units, if required.
- d. Space provision for 2 future bays

220 kV side

- a. 2 nos. of ICT bays
 - b. 8 nos. of line bays(Pithoragarh-2, Almora-2, Jauljivi-2 & Dhauliganga-2)
 - c. One no. of 220kV sectionaliser
 - d. Shifting of 25 MVAr line reactor already available in 220kV Dhauliganga –Bareilly line at Dhauliganga end, to 400/220kV Jauljivi S/s as a bus reactor at 220kV
 - e. Disconnection of 220 kV LILO of Dhauliganga - Bareilly at Pithoragarh and connection of Pithoragarh line to Jauljivi 400/220 kV S/s at 220kV.
- (ii) Diversion of Dhauliganga-Bareilly 400kV D/c line(operated at 220kV) at Bareilly end from Bareilly(UP) to Bareilly(PG) alongwith 2 nos. of 400 kV bays at Bareilly

D.1.3.2 Members of NRPC agreed to the proposal.

D.1.4 WR - NR 765 kV Strengthening Transmission Corridor

D.1.4.1 Representative of CTU POWERGRID informed that a comprehensive study had been carried out by CTU in consultation with CEA for assessing the requirement of additional transmission system keeping in view the existing allocation/ LTA granted on the basis of target regions, firm PPAs and new LTA application submitted for transfer of power from various IPPs in Southern, Western Region and Eastern Regions to Northern Region. It was informed that based on above the total envisaged import to NR would about 27000 MW.

D.1.4.2 Based on the studies, following transmission system was agreed as a system strengthening scheme during the 36th Standing Committee meeting of NR held on 13/7/15. Subsequently, the scheme was also agreed in the



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

संख्या: उ.क्षे.वि.स./ प्रचालन/106/01/2021/ 10435-10476

दिनांक: 09.11.2021

विषय: उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 188^{वीं} बैठक का कार्यवृत्त |**Subject:** Minutes of 188th OCC meeting of NRPC.

उत्तर क्षेत्रीय विद्युत समिति की प्रचालन समन्वय उप-समिति की 188^{वीं} बैठक दिनांक 22.10.2021 को आयोजित की गयी थी। उक्त बैठक का कार्यवृत्त उत्तर क्षेत्रीय विद्युत समिति की वेबसाइट <http://164.100.60.165> पर उपलब्ध है। यदि कार्यवृत्त पर कोई टिप्पणी हो तो कार्यवृत्त जारी करने के एक सप्ताह के अन्दर इस कार्यालय को भेजे |

188th meeting of the Operation Co-ordination Sub-Committee of NRPC was held on 22.10.2021. The Minutes of this meeting has been uploaded on the NRPC website <http://164.100.60.165>. Any comments on the minutes may kindly be submitted within a week of issuance of the minutes.

संलग्नक: यथोपरि**-sd-**

(सौमित्र मजूमदार)

अधीक्षण अभियंता (प्रचालन)

सेवा में,

उ.क्षे.वि.स. के प्रचालन समन्वय उप-समिति के सभी सदस्य

12. Proposal to implement additional protection in 220KV lines at NAPS (Agenda by NAPS)

- 12.1. NAPS vide email dated 06.10.2021 submitted that on 11.08.2021 at 13:25 hrs, both units (NAPS-1 and NAPS-2) had tripped subsequent to isolation of NAPS switchyard from grid due to fault caused by R-phase CVT of 220kV Line-1(Narora-Sambhal). In view of above incident, matter was discussed with designer, NPCIL, Mumbai and additional protection for the 220kV lines has been suggested.
- 12.2. Representative from NAPS also given a presentation of event occurred on 11.08.2021.
- 12.3. Forum decided that the matter shall be referred to protection sub-committee group for scrutiny and comment on the proposed scheme.

13. Charging of 400/220 kV Jauljibi substation without 220 kV, 25 MVAR Bus Reactor. (Agenda by NR-3/POWERGRID)

13.1. NR-3/POWERGIRD presented the matter before the forum and apprised that in the meeting of 36th Standing committee on Power System Planning of Northern Region held on 30.10.2015, establishment of 400/220 kV, 7x105 MVA GIS S/S in Jauljibi under ISTS was approved. 400/220 kV S/S in Jauljibi shall be established by:

1. LILO of both circuits of 400 kV Dhauliganga – Bareilly (presently charged at 220 kV) at 400/220 kV, Jauljibi (incoming line from Dhauliganga shall be charged at 220 kV and outgoing to Bareilly shall be charged at 400 kV).
2. 2x63 MVAR switchable line reactors in Bareilly – Jauljibi 400 kV D/C at Jauljibi end
3. 8 no. of 220 kV bays (Pithoragarh-2, Dhauliganga-2, Almora-2, Jauljibi-2)

S. N.	Elements	Status
1	LILO of both circuits of 400 kV Dhauliganga – Bareilly at Jauljibi	Completed
2	2x63 MVAR switchable line reactors in Bareilly – Jauljibi 400 kV D/C at Jauljibi end	Completed
3	Jauljibi – Pithoragarh 220 kV line	Will be completed by Nov'21
4	220 kV Jauljibi – Almora D/c	Under PTCUL Scope
5	220 kV Jauljibi – Jauljibi (PTCUL) D/c	Under PTCUL Scope
6	8 no. of 220 kV bays (Pithoragarh-2, Dhauliganga-2, Almora-2, Jauljivi-2)	Completed

13.2. The existing 400 kV Dhauliganga – Bareilly (charged at 220 kV) is approx. 240 kms with 25 MVAr line reactor at Dhauliganga end. After LILO at Jauljibi, length of Dhauliganga-Jauljibi section becomes approx. 40 kms. Therefore, this 25 MVAR line reactor is to be shifted to 400/220 kV, Jauljibi and shall be used as a Bus reactor at 220 kV after LILO of Dhauliganga – Bareilly at Jauljibi.

13.3. The present status of 400/220 kV Jauljibi S/s is as follows:

The 400/220 kV Jauljibi S/s was scheduled to be charged by Mar'21. POWERGRID approached BRO in the month of Feb'21 to shift 25 MVAR line reactor from Dhauliganga as per approved scheme. However, BRO informed that the road at Dobat (road from Dhauliganga to Jauljibi) washed out due to heavy rain. BRO created a temporary valley bridge at Dobat which had load limitation and was not suitable to transport 25 MVAR reactor (weighing 30 MT) to Jauljibi from NHPC Dhauliganga. Further, BRO confirmed that the road is expected to be repaired in 6 months. Hence, the shifting of reactor could not be taken up and was postponed till the road to Jauljibi is ready. Subsequently, the bridge on Pithoragarh-Tawaghat road washed out on 07-08 July'21 due to flash floods and rolling down of huge stone boulders in the Kulagad Nallah. After that 170 feet DDR Bailey Bridge with capacity of only 24 MT has been launched at same location on 20 Jul'21 (BRO letter attached at Annexure-A.V of agenda). **As transportation of 220 kV bus reactor at Jauljibi substation is not possible at present, the reactor shall be shifted and commissioned after construction of the bridge by BRO.**

13.4. Hence, permission may be granted to charge the 400/220 kV Jauljibi S/s without 220 kV bus reactor.

13.5. **CTU representative informed the forum that based on their study, no significant impact is coming on the system as the reactor is of 25 MVAR only.**

13.6. NRLDC representative suggested that a written communication may be sought by POWERGRID from BRO about the expected timeline of the repair of road from Dhauliganga to Jauljibi.

13.7. **Subsequently, forum granted permission to charge the 400/220 kV Jauljibi S/s without 220 kV, 25 MVAR bus reactor.**

14. Report Preventive maintenance of interface metering CTs and CVTs under STU ownership. (Agenda by ARPL)

14.1 ARPL submitted that recently on 17.08.2021 failure of Y Phase CT (CT blast and fire in bay equipment) of 400 kV APMuL – Hadala line and subsequent line tripping on 17.08.2021 at 18:17 Hrs, was observed. In this regards faulty CT has been replaced after testing of bay equipments. Blast of CT has also damaged the other nearby CTs and CVTs. It took 2 days to restore the line along with cleaning, testing and checking of bay equipments.

14.2 400 kV APMuL – Hadala being critical grid element, after checking of complete healthiness, the line was charged with ALDC / SLDC and WRLDC code on 19/08/2021 at 20:48hrs considering the urgency.

14.3 Ownership of the interface meters (meter, CT and CVT) is of either CTU or STU. STU generally seals all the Secondary TB and JB of CTs, CVTs and meters terminal covers, including the metering panel.

14.4 As per the standard procedure, preventive maintenance of other bay equipment's are performed yearly. Since STU metering CT and CVT are sealed, it's Preventive maintenance such as tan delta, loop test and oil check

E-mail

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Headquarters

765 Border Roads Task force
Pin: 930765
C/o 56 APO

2402/Kulagad Bridge / 11 /EPC

08 Feb 2024

Power Grid Corporation of India Ltd
400/220 KV GIS
Jauljibi, Dist- Pithoragarh
Uttarakhand

CONSTRUCTION OF KULAGAD BRIDGE AT KM 100.570
UNDER BHARATMALA PROJECT

1. Please refer your letter No- NR-3/JJB/SS/101/2032 dated 01 Nov 2023 and NR-3/JJB/SS/101/2078 dated 08 Feb 2024.
2. It is inform that contract action for construction of Permanent Bridge over Kulagad Nallah at Km 100.57 on Askot-Tawaghat road is being concluded by higher HQ. Construction work will be start after finalization of contract action and it will take approximately 2-3 years to complete construction work.
3. This is for your information please



(P. Vinayagam)
AE (Civil)
OIC EPC
For Commander

Encls: sheets

**BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

PETITION NO.: 732/TT/2020

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations'1999 and CERC (Terms and Conditions of Tariff) Regulations, 2014 and CERC (Terms and Conditions of Tariff) Regulations' 2019 for

- (i) Truing up of Transmission tariff for 2014-19 tariff block and
- (ii) Determination of Transmission tariff for 2019-24 tariff block

For Assets under "Common Scheme for 765 kV Pooling Station and Network for NR, Import by NR from ER and Common Scheme for network for WR and Import by WR from ER and from NER/SR/WR via ER" in Northern, Eastern & Western Region under Regulation 86 of Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999.

Power Grid Corporation of India Ltd.

Registered office: B-9, Qutab Institutional Area,
Katwaria Sarai, New Delhi. 110 016.

Corporate Centre : 'SAUDAMINI', Plot No-2,
Sector-29, Gurgaon-122 001 (Haryana).

--- PETITIONER

Bihar State Power (Holding) Company Ltd
(Formerly Bihar State Electricity Board -BSEB)

Vidyut Bhavan, Bailey Road, Patna – 800 001

Represented By Its Chairman and Others

---- RESPONDENTS

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2	Affidavit	-	7
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**FILED BY
POWER GRID CORPORATION OF INDIA LTD.**


**REPRESENTED BY S. S. Raju
CHIEF GENERAL MANAGER (COMMERCIAL)**



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THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

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Represented By Its Chairman and Others

--- RESPONDENTS

The rejoinder is filed by and on behalf of the Petitioner after considering the reply/objection filed by **Bihar State Power (Holding) Company Ltd** vide their letter dated 20.07.2021 in response to the above Petition, it is most respectfully showeth :

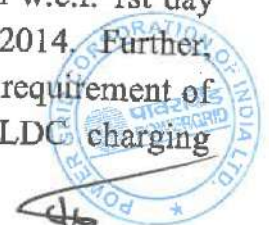
Preliminary Submissions:

1. **Reply to Para-1, 2,3,4** : Matter of record.

Para wise reply:

2. **Reply to Para -1 to 4.1**: Matter of record. No query raised by the respondent.
3. **Reply to Para -4.2**: With regard to the contention raised by the Hon'ble commission it is submitted that CEA certificate of "Asset-55: Ranchi-WR Pooling Station (Sipat) 765 kV S/C line (DOCO: 1.4.2016)" has been submitted as Encl-3 along with the petition.

Further, it is submitted that this Asset-55 was completed/ charged in the Tariff block 2009-14 and there was provision for declaring the commercial operation w.e.f. 1st day of the following next month. Thus, its DOCO was declared w.e.f 01.04.2014. Further, in the tariff block 2009-14, there was no statue/ provision regarding the requirement of charging certificate of an asset from respective RLDC. Thus, the RLDC charging certificate for asset-55 covered in the instant petition not applicable.



4. **Reply to Para -5.1 to 5.3:** Matter of record. No query raised by the respondent.

5. **Reply to Para – 5.4:** With regard to para 6.4, it is submitted that:

The Petitioner has submitted all the necessary documents before the Hon'ble Commission based on which the petitioner has been granted, so far, trued-up tariff of 2014-19 by the Hon'ble Commission vide tariff order no. 247/TT/2019 dt. 18.04.2020, 274/TT/2019 dt. 27.4.2020, 245/TT/2019 dt. 23.04.2020, 307/TT/2019 dt. 16.04.2020 and many other orders issued thereafter for transmission assets under the respective petitions, whereas following effective tax rate based (for tariff block 2014-19) on notified MAT rates are considered for grossing-up of rate of return on equity (ROE).

YEAR	Notified MAT rates (inclusive of surcharge & cess)	Effective tax (in %)	Grossed up ROE (Base Rate/1-t) (in %)
2014-15	20.961	20.961	19.611
2015-16	21.342	21.342	19.706
2016-17	21.342	21.342	19.706
2017-18	21.342	21.342	19.706
2018-19	21.549	21.549	19.758

Accordingly, the tariff for each year of the tariff period 2014-19 is being determined by Hon'ble Commission considering the above Effective Tax percentage to arrive at Grossed up return of equity (ROE).

In view of the above, it is submitted that Grossed up ROE (in %) and effective tax rate for tariff block 2014-19 has already been determined by the Hon'ble Commission.

Further, the Hon'ble Commission is requested to allow the Petitioner to claim the differential tariff on account of the trued-up ROE based on effective tax rate calculated as above and Income-tax assessment/re-assessment for the F/Y 2014-15, 2015-16, 2016-17, 2017-18 and 2018-19 on receipt of the respective assessment orders, directly from the beneficiaries, on year to year basis as provided in the regulation. Income tax assessment for the year 2017-18 and 2018-19 has not yet been completed.

6. **Reply of Para 5.5 & 5.6, 6 & 7:** Matter of record. No query raised by the respondent.

7. **Reply of Para 8:** With regard to additional capitalization it is submitted that Add cap claimed for all the assets incurred after DOCO and up to cut-off date is to be dealt in accordance with 14(1)(i) and 14(i)(ii) of 2014 Tariff Regulations and the admissibility of Additional Capital Expenditure (Add Cap) incurred after Cut-Off date is to be dealt in accordance with clause 3, sub clause (v) of Regulation 14 of 2014 Tariff Regulations. Add Cap details /liability flow statement in the prescribed format has been submitted along with the affidavit dated 16.7.2021. It is humbly prayed to Hon'ble Commission to consider the information furnished in the instant petition and affidavit dated 16.7.2021 and allow Additional Capitalization as claimed in the instant petition.



8. **Reply of Para 8.1 & 8.4:** With regard to IDC statement of Asset-50 to 57, it is submitted that petitioner has filed TV reply vide affidavit dated 15.7.2021 wherein IDC statement has been submitted along with calculation in excel format and the same was enclosed in the e-filing portal also.

Further, with regard to IEDC it is submitted that petitioner has submitted form 12 A of Asset-50 to 57 and IEDC has been discharged till respective DOCO. It is humbly prayed to Hon'ble Commission to consider the information furnished vide affidavit dated 16.7.2021 and allow IDC & IEDC as claimed in the instant petition.

9. **Reply of Para 8.3:** With regard to the calculation of initial spares it is submitted that petitioner has submitted calculation of initial spares for overall project at Encl-5 of the petition.

Thus, it is humbly prayed to the Hon'ble Commission that the restriction on initial spares be removed considering the calculations shown in Encl-7 and the same may be allowed as claimed. Further, the methodology has also been concurred by the Hon'ble APTEL vide their judgement dated 14.09.2019 in Appeal No. 74 of 2017.

10. **Reply of Para 9:** Reply furnished at Para 7 & 8 above.

11. **Reply of Para 9.1:** With regard to additional capitalization claimed during 20019-24 it is submitted that Add cap claimed for all the assets incurred after DOCO and up to cut-off date is to be dealt in accordance with 24(1)(a) and 14(1)(b) of 2019 Tariff Regulations and the admissibility of Additional Capital Expenditure (Add Cap) incurred after Cut-Off date is to be dealt in accordance with clause 1, sub clause (d) of Regulation 24 of 2019 Tariff Regulations. Add Cap details /liability flow statement in the prescribed format has been submitted along with the affidavit dated 16.7.2021. It is humbly prayed to Hon'ble Commission to consider the information furnished in the instant petition and affidavit dated 16.7.2021 and allow Additional Capitalization as claimed in the instant petition.

Further, with regard to Add cap in case of "765/400 kV, 1500 MVA ICT I at Fatehpur S/S along with associated bays (Asset: 4a)" & "1500 MVA ICT II at Fatehpur S/S alongwith associated Bays (Asset: 4b)" beyond Cutoff date and on account of work differed for execution: The Add-cap after Cutoff date is on account of work deferred for execution for Colony Construction. The construction of colony at Fatehpur S/s was not constructed at these locations previously due to implementation of National Transmission Asset Management Centre (NTAMC) inter-alia for remote operation of substation and establishment of Maintenance Service Hub (MSH) concept. However, considering the challenges faced in maintenance through MSH, it was felt appropriate to follow the earlier concept of substation maintenance by placing maintenance staff at these substation and that for operation purpose, to place some operation staff in substation so that any contingency can be met immediately to avert any major breakdown. Accordingly, residential quarters for Operation & Maintenance staff at Fatehpur S/s are being constructed under instant project scheme in which colony were originally provisioned in DPR. Copy of DPR mentioning the colony construction at Fatehpur is enclosed hereto as **Encl-1**. Further, it is submitted that instant project has been discussed and agreed in SCM and RPCs.

It is prayed to Hon'ble commission to allow the Add-cap on account of Colony construction as the same is required for efficient operation of the Grid.

It is prayed to Hon'ble commission to allow the Add-cap on account of Colony construction as per Regulation-76 (Power to Relax) of CERC Tariff Regulation'2019 as the same is required for efficient operation of the Grid.

12. **Reply of Para 10.2:** Matter of record. Reply furnished in above para.

13. **Reply of Para 10.4:** With regards to above query it is submitted that Under CGST Act, 2017 implemented w.e.f. 01.07.2017, the Govt. of India has exempted the charges of transmission of electricity vide notification no. 12/2017 – Central Tax (Rate) dated 28.06.2017 at serial no. 25 under the heading 9969 “Transmission or distribution of electricity by an electric transmission or distribution utility” by giving applicable GST rate as NIL. Hence, the Transmission Charges as indicated at para 10 of the instant petition is exclusive of GST. Further, if GST is levied at any rate and at any point of time in future on Charges of Transmission of Electricity, the same shall be borne and additionally paid by the respondent(s) to the petitioner and the same shall be charged & billed separately by the petitioner. Further additional taxes, if any, are to be paid by the petitioner on account of demand from Govt. / Statutory authorities, the same may be allowed to be recovered from the beneficiaries.

14. **Reply of Para 10.5 to 10.7:** Matter of record. No query raised by the respondent.

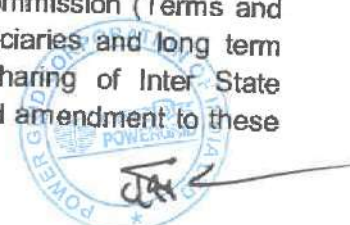
15. **Reply of Para 10.8 & 10.9:** With regard to filing fee and publication expense it is submitted that the petitioner has requested for reimbursement of expenditure by the beneficiaries towards petition filing fee and publication expense, in terms of Regulation 70(1) of Tariff Regulations, 2019. Further, Hon'ble Commission in order dated 28.03.2016 in petition no 137/TT/2015 for determination of tariff for 2014-19 period allowed the recovery of petition filing fee and publication of notices from the beneficiaries on pro rata basis.

16. **Reply to Para-11:** With regard to para 11 it is submitted that For the subject assets (except asset-57), the transmission charges for 2014-19 period shall be recovered on monthly basis in accordance with Regulation 42 and shall be shared by the respondents in accordance with regulation 43 of CERC (Terms and Conditions of Tariff) Regulations, 2014 and shall be shared by the beneficiaries and long term transmission customers in Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 dated 15.06.2010 and amendment to these Regulations issued vide order dated 30.11.2012 or as amended from to time.

For Asset-57:

The transmission charges (YTC) allowed for the instant asset (herein asset-57) from approved COD i.e. 01.04.2014 till the date of commercial operation of the associated transmission line of DVC i.e. 29.08.2017 shall be borne by DVC. Thereafter, the transmission charges shall be recovered on monthly basis in accordance with Regulation 43 of the 2014 Tariff Regulations and shall be shared by the beneficiaries and long term transmission customers as provided in the CERC 2010 Sharing Regulations.

Tariff for Transmission of Electricity (Annual Fixed Cost) for 2019-24 shall be recovered on monthly basis in accordance with Regulation 57 of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 and shall be shared by the beneficiaries and long term transmission customers in Central Electricity Regulatory Commission (Sharing of Inter State Transmission Charges and Losses) Regulations, 2010 dated 15.06.2010 and amendment to these Regulations issued vide order dated 30.11.2012 or as amended from to time.



It is prayed that Hon'ble Commission may determine tariff of the asset covered in the subject petition as prayed in the petition.

PRAYER

In view of the above facts, it is humbly requested that the Hon'ble Commission may kindly approve the transmission tariff as prayed in petition.

**FILED BY
POWER GRID CORPORATION OF INDIA LTD.**

PLACE:GURGAON


**REPRESENTED BY S. S. Raju
CHIEF GENERAL MANAGER (COMMERCIAL)**



BEFORE
THE CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI

PETITION NO.: 732/TT/2020

IN THE MATTER OF: Approval under regulation-86 of CERC (Conduct of Business) Regulations' 1999 and CERC (Terms and Conditions of Tariff) Regulations, 2014 and CERC (Terms and Conditions of Tariff) Regulations' 2019 for

- (i) Truing up of Transmission tariff for 2014-19 tariff block and
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--- PETITIONER

Bihar State Power (Holding) Company Ltd
(Formerly Bihar State Electricity Board -BSEB)
Vidyut Bhavan, Bailey Road, Patna – 800 001
Represented By Its Chairman and Others

---- RESPONDENTS

AFFIDAVIT

I, S. S. Raju, S/o Shri S. B. Raju, working as Chief General Manager (Commercial) in the Power Grid Corporation of India Ltd., having its registered Office at B-9, Institutional Area, Katwaria Sarai, New Delhi-110 016, do hereby solemnly affirm and state as under:-

1. I am the Chief General Manager (Commercial) of Power Grid Corporation of India Ltd., the representative of the Petitioner in the above matter, and am duly authorized to make this affidavit.
2. The statement made herein now is based on petitioner company official record maintained in the ordinary course of business and I believe them to be true.
3. The documents attached herewith are legible copies.

Solemnly affirmed at Gurgaon on this 1st day of Nov'2021 that the contents of the above affidavit are true to my knowledge and belief and no part of it is false and nothing material has been concealed there from.



ATTESTED

MAHENDER S. PUNIA
ADVOCATE & NOTARY
Distt. Gurugram (Haryana) India



**ABSTRACT COST ESTIMATE
PRELIMINARY & GENERAL CIVIL WORKS**

ANNEXURE - 1.1

COMMON SCHEME FOR 765 KV POOLING STATIONS AND NETWORK FOR NR (COMMON FOR SASAN UMPP+NKP+MAITHON / KODERMA / MEJIA / BOKARO / RAGHUNATHPUR / DURGAPUR+IMPORT BY NR FROM ER AND FROM NER/SR/WR via ER) AND
 COMMON SCHEME FOR NETWORK FOR WR (COMMON FOR NKP+MAITHON / KODERMA / MEJIA / BOKARO/ RAGHUNATHPUR / DURGAPUR+IMPORT BY NR FROM ER AND FROM NER/SR/WR via ER)

Sr. No.	Transmission Line	Survey & Soil Invest Works	Crop & PTCC Compen.	Forest Compens. (Incl. NPV)	(Rs. in Lakhs) Colony	Total Cost		
1.0	Gaya-Sasaram 765 KV S/C Trans. Line	32.30	223.50	32.32		288.12		
2.0	Gaya-Balia 765 KV S/C Trans. Line	51.31	347.15	484.80	76.00	959.26		
3.0	Balia-Lucknow 765 KV S/C Trans. Line	68.98	474.42	102.01	92.00	737.40		
4.0	Ranchi-WR Pooling Stn(Ckt-II,ER Portion) 765 KV S/C Trans. Line	21.82	151.40	38.78	33.22	245.22		
5.0	Ranchi-WR Pooling Stn (Ckt-II,WR Portion) 765 KV S/C Trans. Line	59.36	343.50	4298.56	58.78	4760.20		
6.0	Maithon-Gaya 400KV D/C (Quad) Line	51.29	333.00	998.89	76.00	1459.18		
7.0	Lucknow (New) - Lucknow (Old) 400KV (Quad) D/C Line	8.73	59.78	10.10		78.61		
8.0	Ranchi (New) - Ranchi (Old) 400KV (Quad) 2xD/C Line	24.01	164.78	10.10		198.89		
9.0	LILO of Barh - Balia 400 KV D/C line at Patna S/S	5.46	37.28	10.10		52.84		
10.0	LILO of Both Ckts of 400 KV D/C Allahabad-Mainpuri TL at Fatehpur	7.42	50.78	10.10		68.30		
Sub total		330.66	2185.60	5995.76	0.00	0.00	336.00	8848.02



**ABSTRACT COST ESTIMATE
PRELIMINARY & GENERAL CIVIL WORKS**

ANNEXURE - 1.1

**COMMON SCHEME FOR 765 KV POOLING STATIONS AND NETWORK FOR NR (COMMON FOR SASAN UMPP+NKP+MAITHON / KODERMA / MEJIA /BOKARO / RAGHUNATHPUR / DURGAPUR+IMPORT BY NR FROM ER AND FROM NER/SR/WR via ER) AND
COMMON SCHEME FOR NETWORK FOR WR (COMMON FOR NKP+MAITHON / KODERMA / MEJIA / BOKARO/ RAGHUNATHPUR / DURGAPUR+IMPORT BY NR FROM ER AND FROM NER/SR/WR via ER)**

PROJ:

Sr. No.	Sub station	Prelim. Survey & Soil Invest.	Land Cost	R & R Cost	Infra-Structure	Non Residential Buildings	Colony	Total Cost
1.0	Sasaram 765/400 kV SUBSTATION Extn (765KV Yard accomodated in the existing 400 KV S/S)	10.00			275.00	50.00		335.00
2.0	Gaya 765/400 kV (New) S/S	10.00	460.40	150.00	625.00	180.00	498.00	1923.40
3.0	Ranchi 765/400 kV (New) S/S	10.00	2088.00	450.00	625.00	180.00	498.00	3851.00
4.0	Maithon 400/220 kV S/S Extension				10.00			10.00
5.0	Ranchi 400/220 kV S/S Extension				20.00			20.00
6.0	Biharsharif 400/220 kV S/S Extension				20.00			20.00
7.0	Fatehpur 765/400 kV (New) S/S	10.00	281.56	100.00	625.00	180.00	498.00	1694.56
8.0	Agra 765/400 kV (Augmentation) S/S	10.00	154.03	50.00	275.00	30.00		519.03
9.0	Lucknow 765/400 kV (New) S/S	10.00	2101.59	100.00	625.00	180.00	498.00	3514.59
10.0	Balia 400/220 kV S/S Extension (Augmentation to 765KV)				20.00	150.00 *		170.00
11.0	Luoknow(existing) 400/220 kV S/S Extension				10.00			10.00
12.0	Patna 400 kV S/S Extension				20.00			20.00
13.0	Extension of 765/400 kV Pooling station in WR				20.00			20.00
Sub total		60.00	5085.57	850.00	3170.00	950.00	1992.00	12107.57



the colony construction at Fatehpur has been enclosed along with the rejoinder to the BSPHCL and the same has been discussed with the SCMs and RPCs.

89. MPPMCL has submitted that the ACE for 2019-24 period has been claimed on the basis of Auditor's Certificate and detailed documents and justifications regarding the same have not been submitted. In response, the Petitioner has reiterated its submissions.

90. We have considered the submissions of the Petitioner, MPPMCL and BSPHCL. The asset wise ACE allowed/ not allowed for the 2019-24 tariff period are as follows:

Asset-3(a):

(a) The Petitioner has claimed an amount of ₹41.25 lakh for Asset-3(a) towards balance and retention payments towards liability for works executed prior to the cut-off date. We have considered the submissions of the Petitioner. The ACE of ₹41.25 lakh is allowed under Regulation 25(1)(d) of the 2019 Tariff Regulations as it is towards balance and retention payments for Asset-3(a).

Asset-4(a) and Asset-4(b):

(a) The Petitioner has claimed an amount of ₹52.44 lakh in 2019-20 and ₹547.56 lakh in 2020-21 towards unexecuted work w.r.t. construction of colony at Fatehpur Sub-station. The construction work at Fatehpur Sub-station is delayed due to implementation of NTAMC inter-alia for remote operation of sub-station and establishment of MSH concept. The Petitioner while implementing the same has faced challenges in maintenance of the sub-station through MSH and the Petitioner has gone back and relied upon earlier concept of sub-station maintenance by placing maintenance staff at these sub-stations. The Petitioner, for operation purpose, intends to place some operation staff in sub-station so that any contingency can be met immediately to avert any major breakdown.



(b) We have considered the submissions of the Petitioner. ACE for Asset-4(a) and Asset-4(b) has been incurred after the cut-off date on account of works deferred for colony construction. The construction of colony at Fatehpur Sub-station could not be constructed earlier due to implementation of NTAMC, *inter alia*, for remote operation of sub-station and establishment of MSH concept. As pointed out by the Petitioner, it is better to place some operation and maintenance staff in the sub-station to meet any contingency and avert major breakdown. However, we are not inclined to allow the ACE after the cut-off date at this stage. The Petitioner is directed to discuss the same in the RPC and thereafter approach the Commission alongwith the details of actual expenditure incurred on construction of colony at the time of truing up of tariff for 2019-24 period for further consideration.

Asset-25:

a) The Petitioner has claimed an amount of ₹24.21 lakh for Asset-25 towards balance and retention payments towards liability for works executed prior to the cut-off date. We have considered the submissions of the Petitioner. ACE of ₹24.21 lakh is allowed under Regulation 25(1)(d) of the 2019 Tariff Regulations as it is towards balance and retention payments for Asset-25.

Asset-26C:

a) The Petitioner has claimed an amount of ₹16.27 lakh for Asset-26C towards balance and retention payments towards liability for works executed prior to the cut-off date. We have considered the submissions of the Petitioner. ACE of ₹16.27 lakh is allowed under Regulation 25(1)(d) of the 2019 Tariff Regulations as it is towards balance and retention payments for Asset-26C.

Asset-35:

a) The Petitioner has claimed an amount of ₹46.59 lakh for Asset-35 towards balance and retention payments towards liability for works executed prior to the cut-off date. We have considered the submissions of the Petitioner.



allow the ACE on account of colony construction as the same is required for efficient operation of the Grid.

83. The Commission observes that the claim of the Petitioner for construction of colony in Sohawal and Saharanpur sub-stations was related to 14 assets, namely, Asset-5, Asset-7, Asset-8, Asset-14, Asset-15, Asset-16, Asset-24, Asset-25, Asset-26, Asset-27, Asset-28, Asset-29, Asset-30 and Asset-31. Out of these assets, the Petitioner has claimed an expense of ₹1263 lakh incurred on building and civil works in case of Asset-24, Asset-25, Asset-26, Asset-27 and Asset-28 for construction works of colony in Sohawal and Saharanpur sub-stations. It is also observed that the Petitioner's claim of ₹670.58 lakh is within the cut-off date and ₹592.42 lakh is beyond the cut-off date. The details of the assets with the cost beyond the cut-off date is as follows:

Assets	Particulars	Actual COD	Cut-off date	Expenditure upto cut-off date (₹ in lakh)	Expenditure beyond cut-off date (₹ in lakh)
Asset-24	1x63 MVAR,400 kV Bus Reactor-I at 400/220 kV Sohawal Sub-station under NRTSS	29.7.2017	31.3.2020	25.94	259.06
Asset-25	1x63 MVAR, 400 kV Bus Reactor-II at 400/220 kV Sohawal Sub-station under NRTSS	7.5.2018	31.3.2021	259.06	-
Asset-26	Two 220 kV bays of 220 kV (PG) - Sohawal(UP) transmission line at 400/220 kV Sohawal(PG) Sub-station	5.3.2017	31.3.2020	65.82	166.68
Asset-27	Two 220 kV bays No. 208 & 209 (Barabanki-I &II of UPPTCL) at 400/220 kV Sohawal(PG) Sub-station	12.2.2017	31.3.2020	65.82	166.68
Asset-28	Two 220 kV Line Bays of Sohawal (PG)-Tanda (UP) transmission line at 400/220 kV Sohawal (PG) Sub-station	12.12.2018	31.3.2021	228.00	-
	Total			670.58	592.42

84. The construction work at these sub-stations is delayed due to implementation of National Transmission Asset Management Centre (NTAMC) inter-alia for remote operation of sub-station and establishment of Maintenance Service Hub (MSH)



concept. The Petitioner while implementing the same has faced challenges in maintenance of the sub-station through MSH and the Petitioner has gone back and relied upon earlier concept of sub-station maintenance by placing maintenance staff at these sub-stations. The Petitioner, for operation purpose, intends to place some operation staff in sub-stations so that any contingency can be met immediately to avert any major breakdown. The same being the decision of the Petitioner, the Commission in the present petition is not inclined to allow the expenditure beyond the cut-off date and has restricted the same upto cut-off date. However, the Petitioner is granted liberty to raise the issue at the time of truing-up for the Commission to take a view in terms of applicable regulations.

85. Subject to true-up, the ACE in respect of the Combined Asset (Asset-1 to Asset-27, Asset-31 and Asset-32) and Asset-28, Asset-29, Asset-30 and Asset-33 considered are as follows:

(₹ in lakh)		
Particulars	Regulation	ACE allowed (2019-24)
Combined Asset (Asset-1 to Asset-27, Asset-31 and Asset-32)	Regulation 25(1) (d) of the 2019 Tariff Regulations	914.83
Asset-28		228.00
Asset-29		36.31
Asset-30		0.00
Asset-33		0.00

Debt-Equity Ratio

86. Regulation 18 of the 2019 Tariff Regulations provides as follows:-

“18. Debt-Equity Ratio: (1) For new projects, the debt:equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:*
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:*



33KV



उत्तर प्रदेश UTTAR PRADESH

CC 340656

AGREEMENT FOR SUPPLY OF ELECTRICAL ENERGY

(THE CONSUMER HAVING CONTRACTED DEMAND OF TOTAL LOAD 250 K.V.A)

(Supply at 33 K.V. Continuous process)

This AGREEMENT is executed at Sixteen October Two Thousand Fifteen BETWEEN UP Electricity a company incorporated under the Companies Act, 1956 having its registered office at Meerut.

Through its authorized signatory Mr. Anil Arora (E.E.) hereinafter referred to as "the Licensee" (which expression shall unless to the subject or context or meaning thereof mean and include its successors-in-interest, nominees and assigns) of the ONE PART.

AND

an individual / Partnership concern/Proprietorship concern/institute/Trust/Society/HUF/Body Corporate/Company/Government bodies [strike out whichever is not applicable] incorporated under..... Companies Act, ... 1956 Resident of having its HO/registered office at SAHARANPUR through its authorized signatory M/s Power Grid Corporation of India Ltd., Mohanpur Gada, Delhi Road, Saharanpur, hereinafter referred to as "the Consumer" (which expression shall unless repugnant to the subject or context or

Meaning thereof mean and include its successors-in-interest, nominees and assigns) of the OTHER PART.

Office of The
Divisional Engineer
Electricity Distribution Division II
U.P. State Electricity Board
Saharanpur

एस.के. अरोरा
उप-प्रबन्धक
पावर ग्रिड कारपोरेशन ऑफ इंडिया लि.
400/220 के.वी. उपकेन्द्र
मोहनपुर गडा, सहरनपुर

S.S. TOMAR
Asst. General Manager
POWERGRID, Mohanpur Gada, Saharanpur

- (a) Whereas in this agreement unless there is anything repugnant in the subject or context:
1. Act means the Indian Electricity Act, 1910 as in force from time to time, and the rules framed there under and in force from time to time.
 2. Chief Engineer means the Chief Engineer, Additional Chief Engineer, Chief Zonal Engineer, General Manager and Dy. General Manager, U.P. State Electricity Board as the case may be.
 3. Engineer means a superintending Engineer, Executive Engineer, Assistant Engineer any other office of the supplier authorized by the Chief Engineer on his behalf.
 4. Month means the calendar month or the period between the meter reading date in a particular month and the corresponding meter reading date of the immediately succeeding or preceding month as the context may require.
 5. Year means period of 12 months reckoned from the first day of the month from the date of commencement of supply or every period of 12 months thereafter as the context may require.
 6. Date of commencement of supply means the date mentioned Para (C) hereunder and if no such date is mentioned then the date of actual connection of consumer installation or the date of expiry of a period of one month from the date of intimation to the consumer about the availability of Power after completion of the arrangements required to connect his installation whichever is earlier.
 7. Maximum demand means the average amount of kilo watts or kilovolt ampere, as the case may be delivered to the point of supply of the consumer and recorded during a 30 minutes period of maximum demand in the months, the supplier, however, reserving the right to shorten this period in special cases if necessary.
 - 8.(a) All other words and expression used herein shall have the meaning respectively assigned to them in the Indian Elect. Act 1910 and the Indian Electricity Rules, 1956 made thereunder and the Electricity (supply) Act, 1948 and the regulations made thereunder.
- (b) Whereas the consumer has requested the supplier to supply him electrical energy in bulk M/s Power Grid Corporation of India Ltd., Mohanpur Gada, Delhi Road, Saharanpur and

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Divisional Engineer
U.P. State Electricity Board

16/3/2011
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the supplier has agreed to add or such supply to the consumer on the terms and conditions hereinafter contained.

- (c) AND whereas this agreement shall be deemed to have been effective from the date of release of connection, which date shall be considered as the date of commencement of supply under this agreement.

NOW IT IS HEREBY DECLARED & AGREED AS FOLLOWS:


1. Subject to the provisions hereinafter contained and running the continuous of the agreement and supplier shall supply to the consumer at M/s Power Grid Corporation of India Ltd., Mohanpur Gada, Delhi Road, Saharanpur, electrical energy in the Form of A 3 phase alternating current at a declared pressure of 33KV between phases, a declared frequency of 50 cycles per second and a power not exceeding 250 KVA Tariff HV-2 Independent and Continuous Kilovolt amperes/ kilowatts (hereinafter referred to as the contracted load / contracted demand) and the supply shall be made available to the consumer from the boards mains in accordance with the availability in the grid. PROVIDED always that any losses, damage or compensation whatsoever arising out of any accidental failure of supply or stoppage or curtailment or diminution or variation in supply or any failure roasting, as a result of any direct or indirect directions or orders of government, or other competent authority in respect of the distribution of Power, or due to war, mutiny, commotion, riot, strike, lockout, fire, floods, lightning, earthquake or other causes beyond the control of the supplier.
2. This agreement shall be read and construed in all respect in conformity with all provision of the Act and the electricity (supply) Act, 1948 or any subsequent amendments thereof any rules and regulations made thereunder from time to time.
3. The supplier shall subject to the conditions laid down in clause (14) provide metering equipment and apparatus or sufficient capacity to meet the contracted load/contracted demand and the consumer shall, at this own cost, provide approved building for housing and equipment and apparatus so supplied. The building shall be so situated and duly out authorised representative of the supplier can obtain entry at any time either by day or by

night and the supplier shall be permitted to open out trenches for laying or repairing the underground cables for his mains to the said building.

4. The consumer shall provide suitable switches to control his apparatus and keep his protective devices so graded that these may, in normal conditions, operate earlier than the suppliers protective device which shall be suitably set so as to meet the full contracted load / contracted demand having regard to the normal working conditions of the consumers declared plant and equipment. The supplier shall subject to the conditions laid down in clause (14) provide and install switches into the consumer substation for the purpose of protecting the plant and mains of the supplier and supplier shall have the right to remove the same at his own expenses on the expiration or sooner determination of the agreement provided the connection has been permanently disconnected after serving due notice on the consumer, these last mentioned switches and the metering equipment shall be under the control of the supplier and the consumer shall make provision for their segregation from any other part of the consumers apparatus in such manner as may be required by the supplier.
5. The consumer shall not transmit or utilize any of the energy supplied under this agreement beyond the boundaries of his premises, a drawing of which is annexed here to as Annexure - I. not shall the consumer use the energy for purpose other than specified in the agreement.
6. (a) The supplier shall provide suitable mains to meet the contract load / contract demand. The consumer shall not erect any structure over the route of any such mains and the representatives of the supplier shall have a ready access thereto.
- (b) The point of commencement of supply to the consumer shall be at the outgoing terminal of the suppliers.
 - (i) Cut outs in the case of L.T. consumer, and
 - (ii) Control switch gear that may be installed for the purpose as agreed to mutually, in the case of H.T. consumer (Strike out whichever is not applicable).


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Electricity Supply Division II
U.P. State Electricity Board
Subansari


ए.के. अरोरा
उप प्रधान
पावर ग्रिड कारपोरेशन ऑफ इंडिया लि.
400/220 के.वी. उपखण्ड
मोहनपुर गावडा, बाराबंकी



M. S. TOMAR
General Manager
400/220 KV Sub-Station
Mohanpur, Barabanki

- 7.(a) The consumer shall pay for the supply of electrical energy at the rates enforced by the supplier from time to time as may be applicable to the consumer.
- (b) The rate scheduled applicable to consumer at the time of execution of this agreement is annexed hereto.
- (c) The rate schedule above mentioned may at the discretion of the supplier, be revised by the supplier from time to time, and in the case of revision, the rate schedule so revised shall be applicable to the consumer.
- (d) Any levy such as Sales Tax, Excise Duty, Electricity Duty, or any other charge by whatsoever name called by Central/State Govt. or other competent authority, on the electricity supplied to the consumer shall also be paid by the consumer.


The supplier shall send to bill for the charge to the consumer during each month indicating the due date of payment and date of this connection in the case of non payment and the consumer shall pay the same.

This agreement shall subject herein before provided be and remain in force for two years from the date of commencement of supply hereinafter from year to year basis on the terms and conditions herein contained. Provided that either party shall be at liberty to determine this agreement at any time after the expiration of the initial period of supply on giving one month's notice in writing or such intention, and on the expiration of such notice, this agreement shall absolutely cease and determine, but without prejudice to the rights and remedies if any, of either party, which may have secured or arisen hereunder in the meantime.

Provided further that if the consumer ceases taking supply of electrical energy due to any reasons, he shall be liable to pay to the supplier necessary charge as per provisions maid in


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400/220 को.सी. जयकेन्द्र
मोहनपुर गाँव, रायबरेली


श्री श्री श्री S. S. TOMAR
ज. प्र. अधिकारी/Asst. General Manager
रायबरेली, ज. प्र. विभाग/100/220 को.सी. वि. वि. वि. वि.
जयकेन्द्र मोहनपुर गाँव, रायबरेली
मोहनपुर गाँव, रायबरेली


the regulation framed by the supplier under sections 49 and 79 of Electricity (supply) Act, 1943.


2a. If at any time during the continuance of the agreement the consumer commits any breach or fails to observe any of the terms and conditions of this agreement which are in the part of the consumer to be observed and performed and if the consumer having been served with a notice in writing by the supplier fails within 15 days to remedy the default or breach complained of, then it shall be lawful for the supplier without prejudice to his right to recover damage from the consumer for breach of contract or any other rights and remedies on the supplier hereunder, under the Act or otherwise to terminate his agreement immediately and without further notice to disconnect the supply of electrical energy to consumer.

8. The average power factor of the plant and apparatus operated by the consumer must not be less than 0.85.

In the event of non-compliance of this provision, supply of electricity is liable to remain disconnected till suitable arrangements are made by the consumer to raise the power factor to the prescribed figure. The consumer hereby also agrees to bind himself with all the orders issued by the Board on the subject and in all default shall be liable to such additional payment law power surcharge as are determined by the Board from time to time.

9.(a). The energy supplied shall be measured at the point commencement of supply by means of suitable meter(s). The meter(s) shall be provided by the supplier and the consumer shall pay the rent of the same as may be prescribed by the supplier from time to time. The readings of the meter(s) shall be taken by the accredited representative(s) of the supplier monthly on such date as may from time to time be notified to the consumer who shall have the right to dispute a representative to be present to the occasion if he so desired and the readings shall be recorded on the cards kept at the point of supply. The reading taken as aforesaid by the representative of the supplier even where the consumer's representative fails to be present shall be binding on both the parties and shall be conclusive evidence of energy consumed.

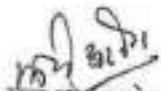

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मोहनपुर गाँव, सहायनगर


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- (b) The supplier may, however, provide in the case of smaller load of less than 250KW demand supplied at both tension metering on the low tension side to economise the cost H.T. metering equipment or when such H.T. metering set is not readily available in which case H.T. reading for billing purpose will be computed by additional 2 percent to the L.T. demand reading and 3 percent to the L.T. kw reading to determine the total energy consumption.
10. The supplier shall send the bill for the charge to the consumer during each month indicating the due date of payment and date of disconnection in case of non payment and the consumer shall pay the same.
11. This agreement shall subject herein before provide be and remain in force for 2 years from the date of commencement of supply (hereinafter called the initial period for supply) and thereafter from year to year basis on the terms and conditions herein contained. Provided that either party shall be at liberty to determine this agreement at any time after the expiration of the initial period of supply on giving one month notice in writing of such intention, and on the expiration of such notice, this agreement shall absolutely cease and determine but without prejudice to the rights and remedies if any, of either party, which may have accrued or arisen here under in the meantime.
- Provided further that if the cases taking supply of electrical energy due to any reason, he shall be liable to pay to the supplier necessary charges as per provision made in the regulation framed by the supplier under section 49 and 79 of Electricity (supply) Act, 1948.
- 12(a) I : at any time during the continuance of the agreement the consumer commits any breach or fails to observe any of the terms and conditions of this agreement which are on the part of the consumer to be observed and performed and if the consumer having been served with a notice in writing by the supplier fails within 15 days to remedy the default or breach complained of them it shall be lawful for the supplier (without prejudice to his right to recover damage from the consumer for breach of contract or any other rights and remedies


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 400/220 के.पी. उपकेन्द्र
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of the supplier hereunder the Act or otherwise) to determinate this agreement immediately and without further notice to disconnect the supply of electrical energy to consumer.

- (b) The supplier reserves the right to discontinue supply on giving 21 hours notice in writing in the event of the consumer's bankruptcy or the execution of any assignment for the benefit of the consumer's creditors or if the consumer is limited company, in the event of commencement of proceedings for compulsory or voluntary liquidation.
- (c) The consumer shall not keep connected to the suppliers supply system any apparatus which the supplier may deem to be likely to interface with or effect injuriously the suppliers supply to the other consumers.
- (d) The leading on the 3 phases of the supply taken by consumer from the supplier shall be kept balanced subject to the maximum permissible difference of 5% of in current between any two phases.
13. Any notice by the supplier to the consumer shall be deemed to be duly given the and served, if it is addressed to the consumer and delivered by hand at, or sent by Regd. Post to the address specified in the consumer application or as subsequently notified to the suppliers.
14. The consumer shall pay in advance an estimated amount to be intimated by the supplier to cover the cost of provision providing and installing the line connecting mains and apparatus excluding transformer and the OCB payable by the supplier but such line, mains and apparatus shall remain the property of the supplier, even through the cost there of has paid by the consumer.
15. The consumer has deposited a security of Rs. 2,50,000.00 vide receipt no. 32/228205 dated 12-04-2010 at the time of execution of this agreement entered in security register vide I.B.S. No. _____ representing 50% of the required amount and the balance shall be deposited at the commencement of the next year of supply.


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मोहनपुर गावा, सातवाणपुर



THE SUPPLIER & TONGUE
The Consumer Energy Board
17
Mumbai

The supplier shall refund the said amount of the security to the consumer upon the termination of this agreement after satisfaction of all the dues payable to the supplier, in the event of nonpayment by the consumer of any sum of money which may become due and a payable to the supplier under these presents within the time and such sum shall become due and payable the supplier shall not withstanding anything herein before contained be entitled to appropriate the amount deposited with the supplier as aforesaid, or any part thereof and interest, if any accrued thereon in or towards the payment of such sum so due or payable by the consumer of the supplier as aforesaid and in the event of appropriation by the supplier of any part thereof, the consumer shall forthwith upon such appropriation deposit further sum to the intent that at no time during the continuance of these presents shall the amount of security in deposit with the supplier fall below the amount stated above.

Provided that the provisions in this clause shall not prejudice any other remedy to which the supplier may be entitled for the recovery of the dues payable to the supplier.

Provided also that if the security amount as stated above is found deficient then supplier shall have power to call for the discretion as additional amount of security deposited from the consumer during the continuance of this agreement and that consumer shall on being required, deposit such additional security amount with the supplier within specified time.

16. In any question or dispute or difference arise between the parties to this agreement as to the interpretation of effect of any provision or clause herein contained or the construction thereof or as to any other matter in any way connected with or arising out of this agreement of the operation thereof or the rights, duties or liabilities of either party in connection therewith, such question, dispute or difference shall be referred the Arbitration of the Chairman, U.P. State Electricity Board or the person nominated by him and the award/decision of the said Arbitrator shall be final and binding upon the parties. In case of any neglect or refusal by the nominee to proceed with the Arbitration, the Chairman U.P.S.E.B. may nominate another person in his place to proceed with the dispute as sole arbitrator.


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Electricity Distribution Division
U.P. State Electricity Board
Lucknow


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एए प्रबन्धक
पावर ग्रिड कार्पोरेशन ऑफ इंडिया लि.
400/220 के.वी. उपस्टेशन
मोहनपुर गाँव, कानपुर



Provided that if the question, dispute or difference relates to or concerns any dues chargeable to the consumer in terms of this agreement, no reference to the Arbitration shall at the instance of the consumer be made till the consumer has deposited with the supplier the amount of dues in dispute, in cash.

17(a) In case of shifting of the connections, change or addition of process, the consumer hereby covenants that for all purpose he shall be deemed as old registered consumer of the supplier and the supplier shall treat him accordingly.

(b) In case of reduction/addition of loads, the consumer hereby covenants that for all the purpose he shall be deemed as old registration consumer of the supplier having taken supply for different load before executions of this agreement. The supplier shall treat him accordingly.

18. That the consumer hereby further agrees to above by all the terms and conditions as stipulated in the Electricity Supply (consumer) Regulation, 1983 framed under Section 79 of the same, provided that in case of any inconsistency between the terms and conditions of supply, the terms of this agreement shall prevail.


19. This agreement shall be governed by the laws of Indian for the time being enforce and shall be subject to the jurisdiction of the courts subordinate to High Court of Judicature at Allahabad.

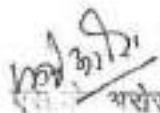
20. It has been agreed between the parties/ user that expenses for providing stamps, shall be borne by the consumer,

WITNESS WHERE OF the two parties here to have executed here caused to be executed these presents on the day and the first above written.

Paid:	<u>Rs. 18596665.00</u>
Security Charges:	Rs. 250000.00
System Loading:	Rs. 250000.00
Total:	<u>Rs. 19096665.00</u>




Office of The
Divisional Engineer
Electricity Distribution Division
U.P. State Electricity Board
Lucknow


सुप. इं. कार्यालय
भारत बिजली कारपोरेशन ऑफ इंडिया लि.
400/220 को.वी. उपकेंद्र
मोहनपुर गावा, रामगढ़

SIGNED BY THE
FOR & ON BEHALF
DIRECTOR CONSUMER

एस.एस. तोमर S.S. TOMAR
Asst. General Manager
400/220 KV Sub-Station
मोहनपुर गाँव, सहरानपुर
Mohanpur Gaus, Saharanpur

IN PRESENCE OF

1. WITNESS

मि. अरवि 16/10/15

एस.के. अरवि
उप प्रबन्धक

पावर ग्रिड कारपोरेशन ऑफ इंडिया लि.
400/220 के.वी. उपबन्ध
मोहनपुर गाँव, सहरानपुर

2- WITNESS

मि. 16/10/15

(MANISH KUMAR)
Engg, POWERGRID
SAHARANPUR

SIGNED BY THE
FOR & ON BEHALF
SUPPLIER

WITNESS

Amor Jeet
GATE
E.D.D II SPE

WITNESS

JEET
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दूरभाष सं: - 9193330830
E Mail:- DEEDDISRE@Gmail.com

कार्यालय
अधिसासी अभियन्ता
Office of the Executive Engineer
विद्युत वितरण खण्ड-द्वितीय
Electricity Distribution Division-II
पश्चिमान्चल विद्युत वितरण निगम लि०, सहारनपुर
Paschimanchal Vidyut Vitran Nigam Ltd.
Saharanpur.

पत्रांक 2361 / वि.वि.ख.द्वि. / स.पुर

दिनांक 25-6-2022

विषय:- ऑडिट द्वारा निकाली गई धनराशि रु० 9494969.00 खण्ड के पक्ष में जमा करने के सम्बन्ध में।

मे० पावर ग्रिड कारपोरेशन ऑफ इण्डिया प्रा० लि०,
दिल्ली रोड, सहारनपुर।

उपरोक्त विषयक आपको अवगत कराना है कि आपके संयोजन संख्या 121 भार 250 के०वी०ए० की प्रक्रिया श्रेणी एच०वी०-1 के अनुसार की गई है, जिसमें मुख्य अभियन्ता, सहारनपुर क्षेत्र, सहारनपुर द्वारा भी आपके संयोजन के भार की स्वीकृति एच०वी०-1 श्रेणी में प्रदान की गई थी, परन्तु संयोजन को विभागीय अभिलेखों में लेजरीकृत करते समय आपका संयोजन एच०वी०-1 के स्थान पर त्रुटिवश एच०वी०-2 श्रेणी में लेजराईज हो गया था, जिसके अनुसार ही वर्तमान तक आपके संयोजन की बिलिंग एच०वी०-2 श्रेणी के अनुसार हो रही है। वर्तमान में खण्ड कार्यालय में ऑडिट के द्वारा आपके संयोजन की जांचोपरान्त अवगत कराया है कि आपका संयोजन एच०वी०-1 श्रेणी के अन्तर्गत आता है, क्योंकि आपके परिसर पर कोई भी औद्योगिक कार्य नहीं होता है जिस कारण आपका संयोजन एच०वी०-2 में गलत चल रहा है, जिसकी बिलिंग एच०वी०-2 के अनुसार करते हुये ऑडिट द्वारा रु० 9494969.00 धनराशि निकाली गई थी, जिसका अवलोकन खण्डाय स्तर से किया गया और पुनः एच०वी०-1 के रेट शैड्यूल के अनुसार आपके संयोजन के बिल की गणना की गई तो आपके संयोजन के विरुद्ध रु. 6551788.00 निकाली है, जो कि आपको जमा करनी है।

अतः आपको पुनः सूचित किया जाता है कि आप संशोधित धनराशि रु. 6551788.00 (रु० षैंसठ लाख इक्यावन हजार सात सौ अट्ठासी मात्र) खण्ड के पक्ष में जमा करने का कष्ट करें। ताकि ए०जी० ऑडिट के प्रस्तर को समाप्त कराया जा सके।

(अक्षय कुमार)
अधिसासी अभियन्ता



दूरभाष सं:- 0132-2761460

E Mail:- DEEDDIISRE@Gmail.com

कार्यालय अधिशासी अभियन्ता
Office of the Executive Engineer
विद्युत वितरण खण्ड-द्वितीय
Electricity Distribution Division-II
पश्चिमान्चल विद्युत वितरण निगम लिमिटेड
Paschimanchal Vidyut Vitran Nigam Ltd.
सहारनपुर
Saharanpur

पत्रांक 4038.....

/वि.वि.ख.द्वि./स.पुर/

दिनांक 11-7-22

विषय:-धारा 3 के अधीन डिमाण्ड नोटिस के सम्बन्ध में।

मै0 पावर ग्रिड कार्पोरेशन ऑफ इण्डिया लि0,
दिल्ली रोड,
सहारनपुर।

उपरोक्त विषयक धारा-3 डिमाण्ड नोटिस इस पत्र के साथ संलग्न कर आपको इस आशय से प्रेषित किया जा रहा है कि आप धारा-3 डिमाण्ड नोटिस में अंकित धनराशि रु. 6916799.00 (रु. उन्हत्तर लाख सोलह हजार सात सौ निनयानवे मात्र) को खण्ड के पक्ष में जमा कराने की कृपा करें।

संलग्नक-धारा-3 नोटिस।

(अक्षय कुमार)
अधिशासी अभियन्ता

→ श्री पी० डी० जाधव, आरि०
आवश्यक कार्यवाही हेतु।

26.07.2022



पंजीकृत प्रेषक

अधिकासी अभियन्ता
नियत प्राधिकारी
विद्युत वितरण खण्ड-द्वितीय
पश्चिमांचल विद्युत वितरण निगम लि०
सहारनपुर

No.

2302

भुगतान की अन्तिम तिथि.....

सेवा में,
श्री. मैसन पावर ग्रिड कारपोरेशन
आत्मज आप, कृष्णपुर किलो
ग्राम दिमना रीज सा. 50
डाकखाना.....
तहसील शमपुर भाग 0
जिला सहरनपुर

दिनांक 11-7-22

पत्र संख्या 4038

विषय :- उ०प्र० सरकारी बिजली व्यवसाय संस्था (दियो की वसूली) अधिनियम 1958 की धारा 3 के अधीन डिमाण्ड नोटिस

महोदय,

चूंकि निम्नलिखित देय आप द्वारा उत्तर प्रदेश पावर कारपोरेशन लि० (सरकारी बिजली व्यवसाय संस्था) को देय है और आपने उल्लिखित देय के भुगतान की तिथि के अन्दर इसका भुगतान नहीं किया है अतः उ०प्र० सरकारी व्यवसाय संस्था (दियो की वसूली) अधिनियम 1958 की धारा 5 के साथ पठित, अमुक अधिनियम की धारा 3 के अधीन आपको नोटिस दी जाती है कि यदि आप इस नोटिस के तामील होने की तिथि के 30 दिन के अन्दर, उपरोक्त देय अदा नहीं कर देते हैं तो पूर्ण देय, नोटिस एवं वसूली लागत सहित आपसे भू-राजस्व के बकाये के रूप में वसूली की जायेगी।

कोड संख्या HV-1 SCM-121 विद्युत सम्बन्ध संख्या 7718/SCM-121/758

क्रम संख्या	माह	देय धनराशि	धनराशि के देय होने की तिथि	क्रम संख्या	माह	देय धनराशि	धनराशि के देय होने की तिथि
		Bill Amount	3	3	3	3650/1 = 40	
						6551788 = 200 Assumet	
						6916799 = 20	

योग 6916799 20
नोटिस व्यय रू० 25 20
कुल योग रू० 6916824 20

भवेदीय

अधिकासी अभियन्ता
विद्युत वितरण खण्ड-द्वितीय
नियत प्राधिकारी

विद्युत वितरण खण्ड-द्वितीय
पश्चिमांचल विद्युत वितरण निगम लि०
सहारनपुर



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

To,

1. Chief Engineer (PCD Division), CEA- sk.maharana@gov.in
2. Executive Director (NR-I), Powergrid- akbehera@powergrid.in
3. Sr. GM, CTU-hsk@powergrid.in
4. Sr. GM (Logistics), NRLDC- mm.hassan@grid-india.in
5. Head Regulatory, Indigrid- Lokendra.Ranawat@indigrid.com

Subject: Minutes of Meeting held on 22.12.2023 to resolve issue of redundant communication of Samba(PG), Parbati-2 and Parbati-3 with NRLDC

A special meeting was held on 22nd December, 2023 under chairmanship of Member Secretary to resolve issue of redundant communication for Samba(PG), Parbati-2 and Parbati-3 substations.

Minutes of meeting are enclosed herewith for perusal and reference.

संलग्नक: यथोपरि |

भवदीय,

Signed by Anzum Parwej

Date: 21-02-2024 16:12:39

Reason: Approved

(अंजुम परवेज़)

अधीक्षण अभियंता (संचार)

Meeting to resolve Redundant communication with NRLDC for Samba(PG), Parbati-2 and Parbati-3 with Indigrid, NRLDC, CTU and CEA

Member Secretary, NRPC welcomed the participants from Indigrid, NRLDC, CTU, CEA and POWERGRID.

1. Redundant Communication for Sama (PG):

1.1 In 23rd TeST meeting of NRPC, matter of redundant communication of Samba (PG) was deliberated wherein CTU suggested that Sabha (PG) is connected on single route i.e. Sambha- Kishenpur path and second path can be created by following lines where OPGW is already available:

- Amargarh – Samba (Indigrid line) and Samba – Jallandhar (Indigrid line)
- i) **Amargarh – Samba (Indigrid line):** Indigrid informed that they have commissioned already available OPGW with the help of POWERGRID and link is operational now. NRLDC also confirmed the same.
 - ii) **Samba – Jallandhar (Indigrid line):** Indigrid informed that OPGW installation was not in scope for Samba-Jallandhar line and is also not mentioned in RfP and TSA. However, they have installed OPGW in place of metal ground cable (as per RfP) for their commercial purposes.

1.2 CTU enquired how data from Sambha and Jallandhar is being reported to NRLDC and how approval for FTC was given for said link. NRLDC informed that data of both end is coming through POWERGRID substations. Further, Indigrid is using RoW of ISTS network and from point of view of ULDC, OPGW should be utilized for ISTS.

1.3 POWERGRID opined that once commissioned OPGW is an integral part of transmission asset and should not be treated differently. As per the CERC (Sharing of ISTS Charges and losses) Regulations, first the priority is to be given to ULDC network.

1.4 DD (PCD), CEA stated that as per electricity act, 2003:

“A transmission licensee may, with prior intimation to the Appropriate Commission, engage in any business for optimum utilisation of its assets.

*Provided that a proportion of the revenues derived from such business shall, as may be specified by the Appropriate Commission, be utilised for reducing its charges for transmission and wheeling. Provided further that the transmission licensee shall maintain separate accounts for each such business undertaking to ensure that **transmission business neither subsidises in any way such business undertaking nor encumbers its transmission assets in any way to support such business.**”*

Therefore, OPGW installed should be utilized for ISTS purpose, first.

1.5 Indigrid opined that said OPWG links are its transmission assets under the scope provided to it in which these were commissioned and it will further utilize them for commercial purpose under existing regulations.

1.6 CTU suggested that since OPGW has already been installed on said lines and it is required for ULDC, installing additional OPGW on these lines will be futile and therefore existing asset should be utilized for ULDC.

1.7 After detailed deliberation on the matter, it was decided that Indigrid will install communication equipment at both ends and optically integrate with ULDC's equipment at both ends. Further, Indigrid may discuss the matter with its higher management internally for installation of end equipments at its own cost and inform at the earliest.

2. Redundant Communication for Parbati-II, Parbati-III, Banala, and Lilo portion

2.1 CTU informed that, three lines were proposed earlier for Parbati-2, Parbati-3 and Sainj stations, connected with ISTS network, in reliable communication package, viz. Parbati-II to Parbati-III, Parbati-III to Banala, and Banala to Koldam (PKTCL/ Indigrid).

2.1.1 Further, after LILO at Sainj, there is requirement of OPGW at following lines for communication in stations –

- i) Banala– Parbati-II
- ii) Banala– Parbati- III
- iii) Banala– III- Sainj
- iv) Sainj – Parbati- II
- v) Banala – Koldam

2.2 Indigrid stated that there was no OPGW in scope for its portion. CTU stated that some portion is owned by POWERGRID and some by PKTCL/ Indigrid. Therefore, clarification is required for completing OPGW installation.

2.3 POWERGRID informed that it has installed OPGW in its portion and unless Indigrid completes its portion, assets cannot be capitalized.

2.3.1 Further informed that in special meeting held in NRPC on 08.03.2019, it was agreed that POWERGRID shall install OPGW on its own and Indigrid's portion. However, no consensus was reached on dismantled earthwire due to which it was not materialised (MoM enclosed).

2.3.2 CERC addressed the issue "Who shall be responsible for implementing the installation of optical ground wire (OPGW) to strengthen the communication network by replacing the earth wire on the existing transmission line owned by a transmission licensee" in Petition No. 94/MP/2021 dated 25.06.2021. As per the CERC order dated 27.12.2023 on said petition, replacement of earthwire was allowed to be executed by transmission licensee owning earthwire following the required procedure with the approval of the competent authority. CERC Order is attached for reference.

2.4 Citing aforesaid CERC order, CTU opined that Indigrid should provide details of OPGW wire in PKTCL's scope and in POWERGRID's scope.

2.5 MS, NRPC stated that after receipt of details, CTU may then take the proposal to NCT for further implementation.

Meeting ended with vote of thanks to the Chair.

List of participants

NRPC Sectt.

1. Sh. V.K. Singh, Member Secretary- Chair
2. Sh. Anzum Parwej, SE
3. Sh. Praveen Jangra, EE
4. Smt. Priyanka Patel, Manager, PowerGrid deputed at NRPC

CEA

1. Smt. Priyam Srivastava, DD, PCD

Indigrid

1. Sh. Lokendra Singh Ranawat, Head Regulatory
2. Sh. Manvendra Singh Hada, Sr Manager
3. Sh. Sangeet Attri, Sr. Manager

PowerGrid

1. Sh. Vishal Singh, GM
2. Sh. Narendra Kumar Meena, Chief Manager
3. Sh. Sanjeet Kumar Singh, Manager

CTU

1. Sh. H.S. Kaushal, Sr. GM
2. Sh. T.P. Verma, Chief Manager

Grid-India

1. M.M. Hassan, Sr. GM
2. Sh. Ankur Gulati, DGM

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 94/MP/2021

Coram:

**Shri Jishnu Barua, Chairperson
Shri I. S. Jha, Member
Shri Arun Goyal, Member
Shri P. K. Singh, Member**

Date of Order: 27.12.2023

In the matter of:

Petition under Section 79(1)(f) of the Electricity Act, 2003 read with Regulation 111 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999 seeking directions for installation of optical ground wire for the 400kV Kurukshetra – Malerkotla transmission line established under the Northern Region System Strengthening Scheme XXXI(B).

And

In the matter of:

Central Transmission Utility,
(Power Grid Corporation of India Ltd).
B-9, Qutab Industrial Area,
Katwaria Sarai, New Delhi-110016

.....**Petitioner**

Versus

1. Sekura NRSS XXXI(B) Transmission Ltd.,
503, Windsor, off CST Road, Kalina, Santacruz (E), Mumbai-400098 (Maharashtra)
2. Northern Regional Power Committee
18-A, Shaheed Jeet Singh Marg, Qutab Institutional Area, New Delhi-110016
3. Central Electricity Authority,
Sewa Bhawan, Rama Krishna Puram, Sector -1, New Delhi-110066
4. National Load Despatch Centre,
B-9, First Floor, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016
5. Northern Regional Load Despatch Centre,
18-A, Shaheed JEET Singh, Sansanwal Marg, Katwaria Sarai, New Delhi-110016
6. Khargone Transmission Ltd.,
F1, The Mira Corporate Suite, Plot No.1 &2, C-Block, 2nd Floor, Ishwar Nagar,



Mathura Road, New Delhi-110065

7. NER-II Transmission Ltd.
F1, The Mira Corporate Suite, Plot No.1 &2, C-Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
8. East North Interconnection Company Ltd.,
The Mira Corporate Suite, Plot No.1 &2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
9. Bhopal Dhule Transmission Company Ltd.,
The Mira Corporate Suite, Plot No.1 &2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
10. Jabalpur Transmission Company Ltd.,
The Mira Corporate Suite, Plot No.1 &2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
11. NRSS XXIV Transmission Ltd.,
The Mira Corporate Suite, Plot No.1 &2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
12. Purulia & Kharagpur Transmission Co. Ltd.,
The Mira Corporate Suite, Plot No.1 &2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
13. RAPP Transmission Company Ltd.,
The Mira Corporate Suite, Plot No. 1&2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
14. Maheshwaram Transmission Ltd.,
The Mira Corporate Suite, Plot No. 1&2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
15. Gurgaon Palwal Transmission Ltd.,
The Mira Corporate Suite, Plot No. 1&2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
16. Odisha Generation Phase-II Transmission Ltd.,
The Mira Corporate Suite, Plot No. 1&2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
17. Patran Transmission Company Ltd.,
The Mira Corporate Suite, Plot No. 1&2, C Block, 2nd Floor, Ishwar Nagar,
Mathura Road, New Delhi-110065
18. Western Transco Power Ltd.(WTPL)
Achalraj, Opp.Mayor Bungalow, Law Garden, Ahmedabad-380006
19. Western Transmission (Gujarat) Ltd., (WTGL)
Achalraj, Opp. Mayor Bungalow, Law Garden, Ahmedabad-380006
20. Chhattisgarh WR Transmission Ltd.,
Achalraj, Opp. Mayor Bungalow, Law Garden, Ahmedabad-380006
21. Raipur Rajnandgaon Warora Transmission Ltd.,
Achalraj, Opp. Mayor Bungalow, Law Garden, Ahmedabad-380006
22. Sipat Transmission Limited
Achalraj, Opp. Mayor Bungalow, Law Garden, Ahmedabad-380006



23. Raichur Sholapur Transmission Co. Ltd.,
Patel Estate, S. V. Road, Jogeshwari (West), Mumbai-400102
24. POWERGRID Vizag Transmission Ltd.,
POWERGRID, SR HQ, 6th Floor, D. No. 6-6-8/32 &39/E, Kavadiguda,
Secunderabad-500080, Telangana
25. POWERGRID Unchahar Transmission Ltd.,
765/400/220 KV POWERGRID S/S, Fatehpur-Lalganj-Lucknow Road,
Village- Chauferva, Post & Distt-Fatehpur-212601(Uttar Pradesh)
26. Kudgi Transmission Ltd.,
Mount Poonamallee Road, Manapakkam, P.B. No.979, Chennai-600089
27. Darbhanga Motihari Transmission Co. Ltd.,
503, Windsor, Off CST Road, Kalina, Santacruz (E), Mumbai -40009 (Maharashtra)
28. NRSS XXXVI Transmission Ltd.,
Plot No. 19, Film City, Sec-16 A, Gautam Buddha Nagar, Noida, UP-201301
29. Warora Kurnool Transmission Ltd.,
Achalraj, Opp. Mayor Bungalow, Law Garden Ahmedabad-380006
30. POWERGRID Southern Inter Connector Transmission System Ltd (PSITSL),
POWERGRID, SR1 HQ, D.No.6-6-8/32&395/E, Kavadiguda,
Secunderabad-500080, Telangana
31. POWERGRID Parli Transmission Ltd (PPTL),
Sampriti Nagar, Nari Ring Road, Uppalwadi, Nagpur-440026
32. POWERGRID Kala Amb Transmission Ltd.
(PKATL) 400/220KV Barwala Sub-station, Vill-Naggal, NH-73,
Barwala Panchkula, Haryana-134118
33. POWERGRID Warora Transmission Ltd, (PWTL)
WR-1 RHQ, Sampriti Nagar, Nari Ring Road,
PO: Uppalwadi, Nagpur-440026(Maharashtra)
34. Powergrid NM Transmission Limited Southern
Region Transmission system –II, RHQ, Near Driving Test Track,
Singanayakanhalli, Yelahanka Hobli, Bangalore-560064
35. Powergrid Jabalpur Transmission Limited, POWERGRID,
Plot No. 54, Jay Ambe School, Sama-Savli Road, Vadodara-390018, Gujarat
36. Alipurduar Transmission Ltd.(ATL)
Achalraj, Opp. Mayor Bungalow, Law Garden Ahmedabad-380006
37. KOHIMA-MARIANI Transmission Ltd.,
B-5, Tower-3, 3rd Floor, Okaya Business Centre,
Sector-62, Noida, (Uttar Pradesh) 201306, India
38. POWERGRID Medinipur Jeerat Transmission Ltd.
POWERGRID, Eastern Region II Headquarters, CF-17,
Action Area 1C, New Town, Rajarhat, Kolkata-700156
39. POWERGRID Mithilanchal Transmission Ltd.
POWERGRID, ERTS-I Regional Haed Quarter, Near Transformer Repair Works,
Board Colony, Shastri Nagar, Patna-800023 (Bihar)
40. POWERGRID Ajmer Phagi Transmission Ltd. SCO bay 5 to 10,



SECTOR-16A, FARIDABAD, HARYANA- 121002

41. Power Grid Corporation of India Ltd.
Load Dispatch & Communication (LD&C), B-9,
Qutab Institutional Area, Katwaria Sarai, New Delhi-110016Respondents

Parties Present:

Shri Samar Chandra De, NERLDC
Shri M. G. Ramachandran, Senior Advocate, STL
Ms. Suparana Srivastava, Advocate, CTUIL
Shri Tushar Mathur, Advocate, CTUIL
Ms. Astha Jain, Advocate, CTUIL
Shri Shubham Arya, Advocate, STL
Ms. Shikha Sood Advocate, STL
Ms. Reeha Singh, Advocate, STL
Ms. Pallavi Maitra, Advocate R-7 to 12
Shri Venkatesh, Advocate, NRSS XXXVI
Shri Anand Singh Ubeja, Advocate, NRSS XXXVI
Shri Mohit Mansharamani, Advocate, NRXX XXXVI
Shri Hemant Singh, Advocate, WTPL
Shri Chetan Garg, Advocate, WTPL
Shri Swapnil Verma, CTUIL
Shri Ranjeet S. Rajput, CTUIL
Shri Priyansi Jadya, CTUIL

ORDER

Central Transmission Utility (CTU) has filed the present Petition under Section 79(1)(f) of the Electricity Act, 2003, read with Regulation 111 of the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 1999, seeking directions for installation of optical ground wire for the 400kV Kurukshetra – Malerkotla transmission line established under the Northern Region System Strengthening Scheme XXXI(B).

2. The Petitioner has made the following prayers:
- i. *Issue appropriate directions to Respondent No.1 for allowing OPGW installation on the 400kV Kurukshetra-Malerkotla D/c line under the Reliable Communication Project approved for the Northern Region by Northern Region Power Committee to ensure early completion of the link.*
 - ii. *Issue further appropriate directions to Respondent No.1 for facilitating and allowing OPGW installation in the transmission elements implemented by transmission licensees in line with the mandate of Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020; any other applicable Regulations/Procedure in this regard, orders and directions of this Hon'ble Commission and*



the decision of coordinated meetings between entities such as Regional Power Committees (RPC), Central Electricity Authority (CEA), Central Transmission Utility (CTU), National/Regional Load Despatch Centres (NLDC/RLDC) and other statutory/regulatory stakeholders.

- iii. *Pass such further and other order(s) as this Hon'ble Commission may deem fit and proper in the facts and circumstances of the present case.*

Submission of Petitioner

3. Petitioner has made the following submissions:
- (a) Communication systems are essential to facilitate the secure, reliable and economic operation of the grid and are an important pre-requisite for the efficient monitoring, operation and control of the power system. The provisions relating to communication systems for the power sector have been initially spelt out in the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2010 (hereinafter "Grid Code, 2010") and the Central Electricity Authority (Technical Standard for Connectivity to the Grid) Regulation, 2013 (hereinafter "Grid Standard for Connectivity") whereunder, all requesters, users, Central/State Transmission Utilities are obligated to provide systems to telemeter power system parameters. Thereafter, on 15.5.2016, this Commission notified the Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017 (hereinafter "Communication System Regulations, 2017"), which lay down the rules, guidelines, and standards to be followed by various persons and participants in the system for the continuous availability of data for system operation and control including market operations.
- (b) Petitioner has been entrusted with the responsibility for the development of an efficient and coordinated communication system on a regional basis, which is to be connected to provide a backbone communication system spread across India as per the Manual of Communication Planning Criteria of the Central Electricity Authority, 2019. CEA has further notified the Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, 2020 (hereinafter "Communication Standards Regulations, 2020"), laying down the requirements for planning, implementation, operation and maintenance and up-gradation of a reliable communication system for all communication requirements including exchange of data for power system at the national level, regional level,



inter-State level and intra-State level. The Regulations envisage planning of backbone regional and national communication network using ISTS transmission lines by the Petitioner as per requirement.

- (c) The Communication Standards Regulations, 2020, envisage planning of backbone regional and national communication network using ISTS transmission lines by the Petitioner as per requirement. Regulation 26 of the said Regulations necessitates the construction of wideband communications using fibre optic communication.
- (d) Optical Ground Wire (OPGW) is an optical fibre embedded in the earth wire, which is used in overhead power lines. In furtherance of the regulatory mandate, the Petitioner has established the backbone communication network in the Northern Region as part of various projects such as the Unified Load Despatch & Communication (ULDC) Project, Microwave Replacement Project and Fiber Optic Expansion Projects, apart from other transmission projects.

The Reliable Communication Scheme under the Central Sector for Northern Region was proposed by the Petitioner in the 35th Technical Coordination Committee (TCC) Meeting held on 1.5.2017, which was approved in the 39th Meeting of the Northern Regional Power Committee held on 2.5.2017.

In this manner, the scheme for the installation of OPGW based reliable communication system with a network size of 7248kms (including OPGW replacement of ULDC Phase –I) by the Petitioner in the Northern Region was approved for its implementation. In accordance with the above approval, which was reiterated in the 40th Meeting, the Petitioner proceeded with the installation of around 7248 km of OPGW along with the communication equipment under the central sector in the Northern Region.

- (e) The implementation of an additional network with the Reliable Communication Scheme under the Central Sector for the Northern Region was approved in the 47th Meeting of the Northern Regional Power Committee held on 11.12.2019 and in the 44th Meeting of the Technical Coordination Committee held on 10.12.2019. Accordingly, the revised network size of the Reliable Communication Project will become 7398 Km. As a part of the above scheme, OPGW was also agreed to be installed on the 400kV Kurukshetra-Malerkotla line (180km) by replacing the existing earth wire.



- (f) The Petitioner has taken up implementation of the project wherein OPGW is to be installed on ISTS transmission lines by replacing existing earth wire. For that purpose, the Petitioner has entered into a contract dated 31.1.2019 with M/s Apar Industries Ltd. (APAR) after the selection of the same based on an open tender.
- (g) The 400kV ISTS transmission line connecting Kurukshetra-Malerkotla had been implemented by Respondent No.1 as part of the transmission scheme in the name of “Northern Region System Strengthening Scheme XXXI (B)” through the TBCB route as follows:
- i. 400 kV Kurukshetra-Malerkotla D/c line
 - ii. 400 kV Malerkotla-Amritsar D/c line
- (h) In view of the regulatory mandate for implementing the national backbone communication system, including for the Northern Region, the Petitioner approached Respondent No.1 for the installation of OPGW on the 400kV D/c Kurukshetra- Malerkotla line built by the Respondent. Further, vide email dated 15.9.2020, the Petitioner clarified certain queries raised by Respondent No.1
- (i) Respondent No.1 vide letter dated 5.10.2020 raised issues with respect to the installation of OPGW on the 400kV Kurukshetra-Malerkotla transmission line and stated that it was unable to understand the regulatory provision which allowed that part of TBCB asset could be removed/dismantled and adjusted against the capital cost of other cost-plus assets in order to achieve tariff optimization in cost plus project. As such, Respondent No.1 declined to grant its consent “to take away NTL earth wire including hardware & fittings by M/s. APAR Industries Ltd. after dismantling for executing OPGW Work”. Respondent No.1 also sought clarifications from the Petitioner with respect to the following:
- i. The available regulatory provisions and contractual provisions under the TSA under which implementation of OPGW ULDC scheme through its asset would not entail any impact on the revenue of the asset.
 - ii. Petitioner to hand over the verified quantity of earth wire, including accessories to Respondent No.1 after proper re-rolling on drums at its Patiala store.



- iii. Whether any damage to the assets of Respondent No.1 during the installation of OPGW by the Petitioner would be rectified by the Petitioner at its own to the level of satisfaction of Respondent No.1.
 - iv. Petitioner to provide schedule of work execution, planning, details of executing agency etc., to Respondent No.1 prior to mobilizing the work at the site for joint discussion purposes.
 - v. Whether the Petitioner would indemnify Respondent No.1 towards:
 - a. Outage/tripping of line implemented by Respondent No.1, which might reduce transmission line service availability.
 - b. Any perspective dispute, litigation or (RoW/crop) compensation claims raised by any of the landowners.
 - vi. From the lifetime operation and maintenance perspective after the completion, commissioning and capitalization of the OPGW work, clarification with respect to:
 - a. Ownership of the transmission line, particularly in view of the substitution of earth wire by the Petitioner and if the asset was to be handed over to Respondent No.1 for ease of its operation and maintenance in future.
 - b. Whether the Petitioner intended to utilize the transmission line commercially in any manner.
- (j) Petitioner vide letter dated 12.10.2020 informed Respondent No.1 that live-line installation of OPGW was field proven and more than 70,000 kms of installation had been completed by the Petitioner. As regards the return of earth-wire and other issues raised by Respondent No.1, the Petitioner stated that the same could be dealt with in line with the decision taken during the Meeting chaired by the Member Secretary, Northern Region Power Committee on 5.3.2019 on similar issues raised by M/s Parbati Koldam Transmission Company Limited (PKTCL) for OPGW installation on their lines. Petitioner's prayers are liable to be seen in the context and perspective of the obligations of Respondent No.1 in terms of the Transmission Service Agreement dated 02.01.2014.
- (k) Respondent No.1 is also obligated in terms of the provisions of the CERC (Procedure, Terms and Conditions for grant of Transmission License and other



related matters) Regulations, 2009, to maintain the project in accordance with the prudent utility practices and applicable directions passed by competent authorities.

- (l) The OPGW requirement on the said line under the Reliable Communication Project is vital for providing reliable and redundant communication of Malerkotla 400kV ISTS sub-station to the Northern Region Load Despatch Center and the Malerkotla 400 kV ISTS sub-station is important for evacuation of bulk power to Punjab through the downstream of 800 kV Champa-Kurukshetra HVDC line.
- (m) Respondent No.1 or any similarly placed transmission licensee may have inter alia the following concerns or issues, on which the Commission may be pleased to issue appropriate guidance and directions:
- i. Change in value (if any) of their assets upon replacement of existing earth-wire with OPGW (optical ground-wire) when such installation is being carried out at the behest of CTU/POWERGRID.
 - ii. Impact of this change in assets on the tariff (if any).
 - iii. Impact of tripping and shutdowns on their system availability (if any)
 - iv. Ownership of OPGW.
 - v. Permission for the licensee to use OPGW for any commercial purpose.
- (n) The Commission may issue directions and guidance in general governing the installation of OPGW wherever so required in accordance with the mandate of Communication Standards Regulations, 2020, Communication System Regulations, 2017 or any other applicable Regulations/Procedure in this regard; orders and directions of this Commission and the decision of coordinated meetings between entities such as Regional Power Committees (RPC), Central Electricity Authority (CEA), Central Transmission Utility (CTU), National/Regional Load Despatch Centres (NLDC/RLDC) and other statutory/regulatory stakeholders.

Hearing on 25.06.2021

4. Petition was admitted on 25.06.2021, and the Commission observed that the issues raised by CTUIL in the instant matter may arise in the case of other TBCB projects. Therefore, the Commission directed CTUIL to implead all the transmission



licensees implementing transmission projects under the TBCB route as respondents so that all of them may be heard and suitable directions could be issued in one order instead of deciding the issues in multiple petitions. The Commission further directed the Petitioner to implead PGCIL as a party to the proceedings. The Commission also directed STL to discuss with CTUIL and firm up the issues that may arise in the installation of OPGW in place of earth wire in various TBCB projects for smooth and proper adjudication of the issues involved.

Submission of Petitioner

5. Petitioner vide affidavit dated 30.11.2021 and dated 08.03.2022 has filed an “Amended Memo of parties” impleading other transmission licensees.
6. Petitioner vide affidavit dated 08.03.2022 submitted the Minutes of Meeting dated 14.07.2021 between CTU, NRSS XXXI(B) Transmission Ltd (NTL) & Powergrid and Minutes of the Meeting held on 13.08.2021 with ISTS licensees to discuss issues related to OPGW installation on Malerkotla - Kurukshetra line & LILO of Fatehgarh – Bhadla line at Fatehgarh-II. There were divergent opinions with respect to the implementation, ownership, maintenance and operation of OPGW and no consensus was arrived at in these meetings.

Hearing on 10.03.2022

7. The Commission directed CTUIL to hold a further meeting(s) with the transmission licensees and come out with a suitable proposal for smooth and proper adjudication of the issues involved.
8. The Commission directed the Petitioner to submit the list of transmission assets along with the transmission licensee’s name wherein this replacement of earth wire/ old OPGW is planned and any other issues being faced by CTUIL related to modifications required to be carried out in TBCB assets keeping in view the integrated nature of ISTS.



Submission of Petitioner

9. Petitioner vide affidavit dated 29.03.2022 has submitted as follows:

- (a) The list of the transmission assets along with the transmission licensee's name wherein the replacement of earthwire/old OPGW is planned (as on 29/03/2022) has been submitted comprising of majority assets of Powergrid and one line Western Transmission Power Ltd (Adani).
- (b) In case the replacement of earth wire/old OPGW is planned in additional transmission assets in future, the same would be informed to the Commission by the Petitioner.
- (c) The issues (including issues other than replacement of earth wire/old OPGW) being faced by the Petitioner related to modifications required to be carried out in TBCB assets is tabulated as below:

Sr. No.	Name of Owner Utility (TBCB/JV/ IPTC)	Name of lines	Issues raised by owner Utilities/likely to arise	Comments
1.	M/s. NTL (NRSS XXXI(B) Transmission Limited) M/s Sekura Ltd.	400kV Kurukshetra – Malerkotla TL (139Km)	<ul style="list-style-type: none"> a. Impact on tariff and revenue after replacement of Earthwire with OPGW (POWERGRID ownership). b. Handing over the Earthwire. c. Rectification of any damaged asset in the process of OPGW installation. d. Prior intimation of any work and responsible contractor. e. Indemnification of any outage or claimed compensation by any landowner. f. Ownership of OPGW and its O&M. g. Any commercial use of OPGW. 	POWERGRID has communicated that it has no objection if the implementation of the laying of OPGW is undertaken by M/s Sekura NRSS XXXI(B) Transmission Ltd (STL)
2.	M/s. PKTCL (M/s. IndiGrid) (JV with POWERGRID)	<ul style="list-style-type: none"> i. 400kV S/C Parbati III(HEP) – Parbati Pooling (7Km) ii. 400kV S/C Parbati II(HEP) – Parbati III (12Km) iii. 400kV Parbati Pooling – Koldam (65Km) 	<ul style="list-style-type: none"> a. Rectification of any damaged asset in the process of OPGW installation. b. Return of earthwire c. Any commercial use of OPGW. 	POWERGRID has communicated that M/s PKTCL may do the installation of OPGW on their own, as discussed during the meeting with Licensees on 13.08.21.
3.	Torrent Power Limited	(i) LILO of Pirana (PG) – Pirana (T) 400kV D/c line at Ahmedabad S/s with twin HTLS along	a. Long shutdown is required for the execution of reconductoring and bay upgradation work. This may	As such no issue has been raised by owner/implementer. However, the implementation work through TBCB for bay



	(TBCB)	with reconductoring of Pirana (PG) – Pirana(T) line with twin HTLS conductor (ii) Bay upgradation work at Pirana (PG) & Pirana (T)	affect the availability of other bays intermittently. b. Commercial issues may be raised by the owner for the modification.	upgradation works and reconductoring in the existing line of Torrent Power will require dismantling, breakage, and removal of existing infrastructure in the premises of Torrent Power by the new TSP.
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(d) The Ministry of Power vide its Order No. 15/3/2017-Trans-Pt(1) dated 09.03.2022 has issued the “Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)”. The Guidelines define the categories of Communication System Schemes for ISTS as Category (A) and Category (B) and provide their corresponding approval procedure. The categories A and B have been defined under the Guidelines as follows: -

- **Category (A):** Communication system directly associated with new ISTS as well as incidental due to implementation of new ISTS elements (e.g. LILO of existing line on new/existing S/s where OPGW/terminal equipment are not available on the existing mainline/substations etc.)
- **Category (B):** Upgradation/modification of existing ISTS Communication system pertaining to the following:
 - Missing Links Redundancy/ System Strengthening
 - Capacity upgradation (Terminal equipment)
 - Completion of life of existing communication system elements
 - Other standalone project e.g. Cyber Security, Unified Network Management System (UNMS)
 - Adoption of New Communication Technologies

(e) Under the Guidelines, the requirement for a communication system linked with the new ISTS, shall be included in the new ISTS package and the combined proposal shall be approved as per the directions contained in MoP’s Office Order dated 28.10.2021 regarding the Re-constitution of the “National Committee on Transmission” (NCT). In the case of Category (B), Communication Schemes/Packages proposed by CTUIL for the upgradation/modification of the existing ISTS Communication System, standalone projects, and adoption of new technologies shall be put up to RPC for their views, and RPC has to provide their views on the Schemes/Packages proposed by CTUIL within 45 days of receipt of



the proposal from CTUIL. The Schemes/Packages, along with the views of RPC shall be approved by NCT. Subsequent to communication received from POWERGRID that it has no objection if the implementation of laying of OPGW is undertaken by M/s Sekura NRSS XXXI(B) Transmission Ltd (STL), the installation of OPGW on 400kV Kurukshetra-Malerkotla Transmission Line in the instant petition may be undertaken as per the procedure prescribed for category (B) communication systems under the Guidelines.

- (f) The Guidelines formulated by the Ministry of Power settle the divergent opinions with respect to implementation, ownership, maintenance and operation of OPGW between the transmission licensee and CTUIL and therefore, difficulty/disputes which are under consideration in the present Petition are not likely to recur in near future.

Submission of Respondent Western Transco Power Limited (WTPL)

10. Respondent No.18 **Western Transco Power Limited (WTPL)** vide affidavit dated 29.04.2022 has mainly submitted as under:
- (a) Respondent No. 18, Western Transco Power Limited, is a Transmission Licensee and the 765/400kV Pune (PG) (GIS) – 400kV Parli (PG) was constructed by Respondent No. 18, which was commissioned on 01.12.2013.
- (b) If the Commission allows some other party to lay OPGW on the transmission asset owned and operated by another licensee, the same would necessarily entail the following issues, which need to be considered by this Commission:
- i. The ownership of the OPGW shall remain uncertain as the transmission asset will belong to one entity, and the OPGW shall be owned by another entity.
 - ii. The OPGW which shall be installed may be utilized for commercial purposes such as communication etc., which cannot be allowed to an entity which is not the owner of the transmission asset, and the said entity cannot be permitted to make undue monetary gains by using the said asset.
 - iii. During installation of the OPGW, there may be damage to the existing asset of the Applicant.



- iv. The suitability of OPGW to the existing transmission asset is an important factor, which also requires consideration by this Commission.
 - v. Issues as regards the Right of Way (“RoW”) during the extraction of the existing wire.
 - vi. The Applicant will be liable to be compensated in case of any damage caused by the licensee during the installation of OPGW.
 - vii. Deemed availability/ compensation of financial loss in case of tripping, breakdown, maintenance etc., due to the reason not attributable to the transmission licensee which owns the transmission line in question.
 - viii. Whether O&M will be carried out by the transmission licensee which owns the transmission line in question.
11. The Commission is precluded from granting a license or permission to any other party qua a transmission asset which is owned by Respondent No. 18.

Submission of other Respondents

12. The other Respondents NER-II Transmission LTD. (NERII), Parbati Koldam Transmission Co. LTD. (PKTCL), Gurgaon Palwal Transmission Co. LTD. (GPTL), Jabalpur Transmission Co. LTD. (JTCL), Maheshwar Transmission Co. LTD. (MTL), RAPP Transmission Co. LTD. (RTCL), Bhopal Dhule Transmission Co. LTD. (BDTCL), Odisha Generator Phase-II Transmission Co. LTD. (OGPTL), East North Interconnection Transmission Co. LTD. (ENICL), Patran Transmission Co. LTD (PTCL) and Purulia & Kharagpur Transmission Co. LTD (PKTCL), vide their individual affidavit dated 29.05.2022 have submitted the similar submission, which are as under:
- (a) The present Petitioner is obligated to comply with the provisions of Communication System Regulations, 2017, which requires the Petitioner to undertake only the planning of the communication system and not undertake installation of OPGW and communication system on the assets of the other transmission licensees.
 - (b) Section 17 of the 2003 Act has a bar on the Petitioner to acquire the transmission assets of any other licensee by any arrangement. The prayers made by the Petitioner are tantamount to the Petitioner acquiring the transmission assets of the



Respondent Licensee for installing OPGW. This is clearly stated in negative language in clause 1(a) of section 17 of the 2003 Act.

(c) The “Guidelines on Planning and Communication System for Inter State Transmission System” do not mandate the CTUIL or PGCIL to install OPGW on the transmission lines/transmission projects owned by other transmission licensees. The said Guidelines state that the proposal made by the Petitioner for the upgradation/modification of the existing ISTS communication system, etc., shall be put up to RPCs for their views.

(d) The following substantial issues arise in the present matter:

(A) Proposal may entail modification of license conditions:

- i. In the event that the Petitioner is to replace the earth wires of other transmission licensees, there may be an issue attracting license amendment, which *inter alia* requires prior permission of the Lenders. Moreover, if the ownership of OPGW is to remain with the Petitioner, then two different transmission licensees will have ownership over one TBCB asset, which will lead to complexities in terms of operation and maintenance of the asset, leveraging of the assets for another business, RoW/crop compensation, outage and availability related claims, etc.

(B) The issue of Deemed Availability.

(C) The issue of CTUIL engaging in “Other Business” under section 41 of the 2003 Act:

- i. The proposal of the Petitioner to install OPGW on the transmission assets of another Transmission Licensee entails the Petitioner to recover capital expenditure and other expenditure on installing the OPGW from the point of connection, transmission charges from the base of customers of the Petitioner.
- ii. Section 41 only allows the transmission licensee to engage in any business for “Optimum Utilization of its assets.” Therefore, under section 41 of the 2003 Act, one transmission licensee cannot engage in another business for utilization of another transmission licensee’s assets.
- iii. There is no basis in fact or in law based on which the Respondent No.1 transmission licensee or any other transmission licensee would permit the



- Petitioner or PGCIL to utilize their own transmission assets for CTUIL/PGCIL to derive revenue from installing the OPGW.
- iv. Under section 41, the Second Proviso thereto prohibits the Respondent No.1 licensee or other transmission licensees from providing their own transmission assets to CTUIL/PGCIL because that would be tantamount to encumbering its transmission assets for the loans/financial assistance that CTUIL/PGCIL would incur for the expenditure on OPGW installation.
 - v. Respondent No.1 licensee/other transmission licensees cannot be deprived of return on investment on their own transmission assets by depriving them of installing the OPGW on their own assets.

(D) The issue of Indemnification: The transmission licensees will be exposed to disputes on account of right-of-way issues with locals, outages, decrease in availability of transmission system, loss of revenue, etc., if the OPGW is installed by CTUIL/PGCIL and hence transmission licensees should be indemnified by CTUIL and/or PGCIL, as the case may be.

- (e) The dismantled earth wires will have to earn scrap value which will be amenable to treatment under the sharing of non-tariff income between the beneficiaries and LTTCs and transmission licensees. Can CTUIL nor PGCIL be permitted to replace the existing earth wires of the transmission assets of the Answering Respondent/other transmission licensees?

Submission of Petitioner

- 13. Petitioner vide affidavit dated 12.05.2023 has submitted that in compliance with the directions of the Commission, a meeting was held between CTUIL & ISTS Transmission Licensees on 08.05.2023, and the minutes of the same have been submitted.

Hearing on 15.05.2023

- 14. During the hearing on 15.05.2023, following has been recorded:

"3. Learned counsel for CTUIL informed that pursuant to the direction of the Commission given in the instant petition vide Record of Proceedings dated 10.3.2022, a meeting was held between CTUIL and ISTS transmission licensees on 8.5.2023, wherein it was recorded that in the earlier meeting held on 13.8.2021, between CTUIL and the transmission licensees, it was agreed by general consensus that unless otherwise requested, the work



regarding installation of OPGW shall be awarded to the asset owner. She further informed that a meeting was also held on 13.3.2023, amongst CTUIL, Powergrid and Sekura pursuant to the directions of the Commission vide RoP dated 10.3.2022 to discuss OPGW installation on 400 kV D/C Malerkotla- Kurukshetra line owned and operated by Sekura wherein Sekura suggested that OPGW work should be awarded to them as additional work being change in the original transmission line scope and cost of the same shall be recovered by revision in their existing TBCB tariff. Learned counsel for the CTUIL submitted that the work shall be awarded in RTM mode and tariff of the same shall be determined by the Commission as per the applicable regulations.

4. Learned counsel for Respondent No.18/WTPL submitted that while passing order in present petition, the Commission may bear in mind that the matter in issue is of Communication System and to what extent the powers under the Electricity Act, 2003 can be used in allowing revenue or in approving or determining tariff of Communication System which is not part of the transmission. In response, learned counsel for the CTUIL submitted that the Communication System is part of the transmission system CTUIL submitted that the work should be awarded in RTM mode and tariff of the same shall be determined by the Commission as per the applicable regulations.”

15. After hearing the Petitioner and Respondents, the Commission reserved the order in the matter on 15.05.2023.

Written Submission of Respondent No. 1, SEKURA NRSS XXXI(B) Transmission Ltd

16. Respondent No.1, **SEKURA NRSS XXXI(B) Transmission Ltd** has made written submissions dated 05.06.2023 as under:
- (a) CTUIL has proposed the following in view of MoP “Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)” dated 09.03.2022 and recent approvals of OPGW on existing lines:
- (i) OPGW installation work under ISTS Communication requirement shall be awarded to the transmission line asset owner.
 - (ii) Terminal equipment associated with OPGW cable shall be awarded to bay owner/s of the transmission line on which OPGW is proposed for installation.
- (b) A consensus has emerged that Respondent No. 1 can undertake the implementation of OPGW in the transmission assets owned by it and further that such OPGW cables will form part of its transmission assets, which ownership would also lie with Respondent No 1.
- (c) The NRSS project has been developed and operated by Respondent No. 1 as a Tariff based Competitive Bidding licensee. All transmission assets forming part of the NRSS XXXI B Project are subject to the tariff that has been arrived at pursuant to competitive bidding in accordance with the guidelines issued by the Ministry of



Power (“MOP”). Accordingly, the regime that governs the tariff of the NRSS XXXI B project falls under Section 63 of the EA 2003.

- (d) OPGW cables do not constitute a standalone asset. It is only a part of the transmission assets of a transmission licensee. The NRSS XXXI B Project is regulated under Section 63 of the EA 2003, it may not be appropriate to apply a separate regulated tariff mechanism for the upcoming OPGW cables of the NRSS XXXI B Project.
- (e) In view of the above, the OPGW cables forming part of the communication system would form an integral part of the transmission lines owned and operated by Respondent No. 1.
- (f) In the context of factoring in the implementation of the Reliable Communications Scheme in the tariff of the TBCB licensee, implementation of the Communication System as part of the NRSS XXXI B project by replacing the earth-wire with OPGW cables is an additional requirement under the mandate of law. Considering that the said requirement has cropped up after the bid deadline, the implications of the above should be considered under the Change in Law provision of the Transmission Service Agreement (TSA).
- (g) The consequences of the Change in Law and, in particular, the computation of the impact thereof upon the tariff have been set out in detail under the TSA. Considering that the TSA governs the tariff for the entire transmission assets in the NRSS project, any change in such tariff would fall within the purview of the TSA.
- (h) There is precedent for allowing additional expenditure incurred on account of a Change in Law to be passed through in the tariff. Reliance is placed on *Talwandi Sabo Power Limited vs Punjab State Electricity Regulatory Commission* [MANU/ET/0054/2020], wherein the Tribunal held that the MoEF and CC Notification constituted a Change in Law event and any additional expenditure incurred on account of the installation of flue-gas desulphurisation system was to be included as Additional Capital Cost. Reliance is also placed on the judgment of the Tribunal in *NRSS XXXI (B) Transmission Limited vs Central Electricity Regulatory Commission* [MANU/ET/0071/2021]. In this case, the Appellant has claimed compensation on account of the increase in the length of the transmission lines due to a change in the Gantry Coordinates from the one indicated in the Survey Report.



- (i) Further, vide its Final Order dated 13.05.2022 in remand proceedings in Petition no. 195MP2017, it was decided as follows:

“16. Accordingly, NTL shall recover from LTTCs the IDC and IEDC incurred for the extended period of SCOD and compensation for the actual change in the length of the Transmission lines as against the length of the Transmission lines in case the Gantry Coordinates would have been same as indicated in the Survey Report in accordance with Article 12.2.1 of the TSA i.e. increase in non-escalable transmission charges at the rate of 0.313% for a cumulative increase of capital cost of Rs. 1.158 crore incurred up to the extended SCOD of the project.”

- (j) Procedurally and administratively, it would be quite difficult and challenging for the TSP, CTUIL & other stakeholders involved actively in the ISTS transmission charges billing, collection & disbursement (BCD) process from a viewpoint that parts of the same transmission asset owned & operated by same Transmission Licensee would be treated under two different tariff regimes i.e. part asset under TBCB Tariff and part asset under RTM mode. The commission may please consider the single tariff regime under the available provision of the TSA for all such similar cases of OPGW laying in the existing transmission TBCB assets.

Analysis and Decision

17. We have considered the submissions of the Petitioner, and Respondents and perused all relevant documents on record. The following issues arise for our consideration:

Issue No. 1: Who shall be responsible for implementing the installation of optical ground wire (OPGW) to strengthen the communication network by replacing the earth wire on the existing transmission line owned by a transmission licensee?

Issue No. 2: What other factors need to be considered while such replacement is carried out, such as the impact on discovered tariff, availability, loss due to damage, etc. for the transmission licensee?

The above issues have been dealt with in succeeding paragraphs.



Issue No. 1: Who shall be responsible for implementing the installation of optical ground wire (OPGW), to strengthen the communication network by replacing the earth wire on the existing Transmission Line owned by a transmission licensee?

18. Petitioner has submitted that the Reliable Communication Scheme under Central Sector for Northern Region for installation of OPGW based reliable communication system with a network size of 7248 kms (including OPGW replacement of ULDC Phase-I), by the Petitioner, was approved in the 39th Meeting of the Northern Regional Power Committee held on 2.5.2017, which was revised to 7398 Km in the 47th Meeting of the Northern Regional Power Committee held on 11.12.2019.
19. Petitioner has taken up the implementation of the project wherein OPGW is to be installed on ISTS transmission lines by replacing existing earth wire for which it has entered into a contract dated 31.1.2019 with M/s Apar Industries Ltd. (APAR) as per which dismantled earth wire shall be taken away by the contractor.
20. Petitioner has approached Respondent No.1 for installation of OPGW on the 400kV D/c Kurukshetra-Malerkotla line, which was opposed by Respondent No. 1 seeking clarifications on the regulations under which Petitioner has proposed to take away part of its asset and the ownership of new OPGW among other queries.
21. Respondent Western Transco Power Limited (WTPL) has submitted that the OPGW which shall be installed may be utilized for commercial purposes such as communication etc., which cannot be allowed to an entity which is not the owner of the transmission asset, and that the said entity cannot be permitted to make undue monetary gains by using the said asset. Further, during the installation of the OPGW, there may be damage to the existing assets of the Applicant. WTPL. Further, the concerns on Deemed availability/ compensation of financial loss in case of tripping, breakdown, maintenance, etc., due to the reason not attributable to the transmission licensee which owns the transmission line in question need to be handled besides who will carry out O&M of such OPGW.
22. The Respondents NER-II Transmission LTD. (NERII), Parbati Koldam Transmission Co. LTD. (PKTCL), Gurgaon Palwal Transmission Co. LTD. (GPTL), Jabalpur Transmission Co. LTD. (JTCL), Maheshwar Transmission Co. LTD. (MTL), RAPP Transmission Co. LTD. (RTCL), Bhopal Dhule Transmission Co. LTD. (BDTCL), Odisha Generator Phase-II Transmission Co. LTD. (OGPTL), East North



Interconnection Transmission Co. LTD. (ENICL), Patran Transmission Co. LTD (PTCL) and Purulia & Kharagpur Transmission Co. LTD (PKTCL) have opposed the replacement of earth wire by any other licensee such as Petitioner.

23. Subsequent to the filing of the instant Petition, several rounds of meetings were undertaken by CTUIL with transmission licensees wherein consensus emerged during the meetings held on 13.3.2023 and 8.5.2023 regarding modalities for implementation of OPGW raised in the instant Petition.
24. We have considered the submissions of the Petitioner and Respondents and have also perused the facts on record.
25. The relevant extracts of the 39th Meeting of the NRPC held on 2.5.2017, and 47th Meeting of the NRPC held on 11.12.2019 are as under:

39th Meeting of the NRPC held on 2.5.2017

"NRPC Deliberations

B.6 Reliable Communication Scheme under Central Sector for Northern Region

B.6.7 NRPC approved the proposal by POWERGRID for installation of 5474 kms. of OPGW based communication scheme, at an estimated cost of Rs.137 Crs."

"B.17 Replacement of OPGW installed under ULDC Phase-I

B.17.6 POWERGRID informed that 24-F OPGW would be considered as per the existing philosophy and along with communication equipment for which the estimated cost would be Rs.59 Crs. The scheme would become part of existing Commercial Agreement signed for ULDC Project and would be implemented as part of Reliable Communication Scheme under Central Sector for Northern Region.

B.17.7 After detailed deliberations NRPC approved the proposal of replacement of old OPGW installed under ULDC phase-I..."

47th Meeting of the NRPC held on 11.12.2019

"B.6.4 After detailed deliberations, the following links were agreed upon:

<i>Sl. No.</i>	<i>Name of Link</i>	<i>Route Length (km)</i>	<i>Purpose</i>
<i>1</i>	<i>400kV Panchkula-Patiala</i>	<i>65.494</i>	<i>Physical Path Redundancy & route diversity for Panchkula S/s</i>
<i>2</i>	<i>400kV Jalandhar Moga</i>	<i>85.15</i>	<i>Physical Path Redundancy & route diversity for Jalandhar (PG) through Central Sector links.</i>
<i>3</i>	<i>400kV Parbati PS - Amritsar</i>	<i>250.53</i>	<i>Path Redundancy & route diversity of Parbati PS (Banala) & Hamirpur 4 through Central sector network.</i>
<i>4</i>	<i>LILO of Parbati - Amritsar at Hamirpur</i>	<i>6.7</i>	



5	400kV Kurukshetra-Malerkotla PG	180	Path Redundancy of Malerkotla (PG) through central sector network.
6	765kV Meerut - Moga	337.15	Route diversity of Moga S/S & creation of reliable ICCP link between Punjab, Rajasthan (through upcoming 765kV Bikaner Moga under GEC Part D & NRLDC).
7	400kV Dehradun-Bagpat	165	Physical path Redundancy & for route diversity of Bagpat S/S
8	400kV RAPP B -Jaipur South with LIL0 at Kota	226	Redundancy of Kota & RAPP through Central Sector network
9	400kV Allahabad-Singrauli	200	Redundancy of Singrauli
10	400kV Allahabad-Fatehpur 765	130	Strengthening of Inter Regional Connectivity (WR-NR). (400kV Fatehpur – Mainpuri is under implementation under Reliable Communication scheme)
11	400kV Kanpur - Ballabgarh	370	Redundancy of old Agra-Kanpur link which has reached the end of its useful life of 15 years.
12	Chittorgarh 400kV RVPN to Chittorgarh 220kV RVPN	07	Redundancy of Chittorgarh 220/132 through Central Sector network
13	400kV Lucknow – Kanpur	156	Redundancy of Network and avoiding multiple sub-stations
	TOTAL	2179.024	

B.6.5 POWERGRID further informed that in accordance with 39th & 40th NRPC meeting, implementation of 7248 Km OPGW is under execution. POWERGRID also informed that around 2031 km OPGW network is not coming up in the original reliable scheme (as approved in 39th NRPC) as some of the IPPs are not coming up and also connectivity for some were covered in different schemes. Considering the same and additional requirement of 2180 km as proposed for taking care of contingencies as per Communication Planning Criteria, the overall network size approved in 39th & 40th NRPC will increase by only 150 km considering new requirement of 2180 km in lieu of 2031km network not coming up as brought out above.

B.6.6 Accordingly, TeST sub-committee members have agreed for the implementation of 2180 Km of OPGW network under on-going Reliable Communication Project (7248 km) so that the same can be implemented within the same time period. The revised network size of Reliable Communication Project will become 7398 Km.

B.6.7 TCC recommended for the approval of the modified scheme as agreed by TeST subcommittee.

NRPC Deliberations

B.6.8 NRPC concurred with TCC deliberations.”

As per the above, the proposal of the petitioner for the installation of OPGW based communication network for Reliable Communication Scheme under the Central Sector for Northern Region was approved in 39th Meeting of NRPC held on 02.05.2017 and 47th Meeting of NRPC held on 11.12.2019, wherein the installation of OPGW on 400kV Kurukshetra - Malerkotla line (180km) by replacing the earth wire was agreed in 47th meeting of the NRPC.



26. Clauses 7.1.1 and 7.1.2 of the Transmission Service Agreement dated 02.01.2014 of Respondent No.1, as submitted by the Petitioner, provide as under:

“7. OPERATION AND MAINTENANCE OF THE PROJECT

7.1.1 The TSP shall be responsible for ensuring that the Project is operated and maintained in accordance with the Indian Electricity Grid Code (IEGC)/State Grid Code (as applicable), Transmission License, directions of National Load Despatch Centre/RLDC/SLDC (as applicable), Prudent Utility Practices, other legal requirements including the terms of Consents, Clearances and Permits and is made available for use by the Transmission Customers as per the provisions of applicable regulations including but not limited to the Central Electricity Regulatory Commission (Open Access in Inter-state Transmission) Regulations, 2004, Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, and the Central Electricity Authority Grid Standards of Operation and Maintenance of Transmission Lines (as and when it comes into force) as amended from time to time and provisions of this Agreement.

7.1.2 The TSP shall operate and maintain the Project in an efficient, coordinated and economical manner and comply with the directions issued by the National Load Despatch Centre, RLDC or the SLDC, as the case may be, in line with the provisions of the Electricity Act 2003 and Rule 5 of the Electricity Rules, 2005, and as amended from time to time.”

As per the above, the TSP (i.e. Transmission licensee) is responsible for ensuring the operation and maintenance of the project in an efficient, coordinated and economical manner and in compliance with the Indian Electricity Grid Code (IEGC)/State Grid Code (as applicable), Transmission License, directions of National Load Despatch Centre/RLDC/SLDC (as applicable), Prudent Utility Practices, other legal requirements.

Further, the “Prudent Utility Practices” defined in the TSA are as under:

“Prudent Utility Practices” shall mean the *practices, methods and standards that are generally accepted internationally from time to time by electric transmission utilities for the purpose of ensuring the safe, efficient and economic design, construction, commissioning, operation, repair and maintenance of the Project and which practices, methods and standards shall be adjusted as necessary, to take account of:*

- (i) operation, repair and maintenance guidelines given by the manufacturers to be incorporated in the Project,*
 - (ii) the requirements of Law, and*
 - (iii) the physical conditions at the Site*
-”*

As per the above, the TSP (i.e. Transmission licensee) is obligated to adopt the practices, methods and standards that are generally accepted internationally from time to time by electric transmission utilities for the purpose of ensuring the safe, efficient and economic design, construction, commissioning, operation, repair and maintenance of the Project and to take into account the guidelines given by the manufacturers, requirements of law and physical conditions at the site.



27. Regulation 7.2 of the Communication System Regulations, 2017, provides as under:

“7.2 Role of CTU (i) The CTU shall in due consideration of the planning criteria and guidelines formulated by CEA, be responsible for planning and coordination for development of reliable National communication backbone Communication System among National Load despatch Centre, Regional Load Despatch Centre(s) and State Load Despatch Centre(s) and REMCs along with Central Generating Stations, ISTS Sub - Stations, UMPPs, inter-State generating stations, IPPs, renewable energy sources connected to the ISTS, Intra-State entities, STU, State distribution companies, Centralised Coordination or Control Centres for generation and transmission. While carrying out planning process from time to time, CTU shall in addition to the data collected from and in consultation with the users consider operational feedback from NLDC, RLDCs and SLDCs.

(ii) The CTU shall plan the communication system comprehensively and prospectively for users considering the requirement of the expected nodes in consultation with Standing Committee to be constituted by CEA.”

As per the above, CTUIL shall be responsible for planning and coordination for the development of a reliable National communication backbone Communication System among the National Load despatch Centre, Regional Load Despatch Centre(s) and State Load Despatch Centre(s) and REMCs along with Central Generating Stations, ISTS Sub -Stations, UMPPs, inter-State generating stations, IPPs, renewable energy sources connected to the ISTS, Intra-State entities, STU, State distribution companies, Centralized Coordination or Control Centres for generation and transmission.

28. Clause (aa) of Regulation 2(i) and Regulation 7.8 of the Communication System Regulations, 2017, provide as under:

“2(i) aa) “User” means a person such as a Generating Company including Captive Generating Plant, RE Generator, Transmission Licensee [other than the Central Transmission Utility (CTU) and State Transmission Utility (STU)], Distribution Licensee, a Bulk Consumer, whose electrical system is connected to the ISTS or the intra-State transmission system.

.....

7.8 Role of Users:

(i) The Users including renewable energy generators shall be responsible for provision of compatible equipment along with appropriate interface for uninterrupted communication with the concerned control centres and shall be responsible for successful integration with the communication system provided by CTU or STU for data communication as per guidelines issued by NLDC.

(ii) Users may utilize the available transmission infrastructure for establishing communication up to nearest wideband node for meeting communication requirements from their stations to concerned control centres.

(iii) The Users shall also be responsible for expansion /up-gradation as well as operation and maintenance of communication equipment owned by them.”



As per the above, Users, inter-alia including transmission licensee, may utilize the available transmission infrastructure for establishing communication up to the nearest wideband node for meeting communication requirements and shall also be responsible for expansion /up-gradation as well as operation and maintenance of communication equipment owned by them.

29. Regulation 26(1) of the Communication Standards Regulations, 2020 provides as under:

“26. Requirements of fibre optic communication. (1) All wideband communications shall be established using fibre optic communication consisting of underground fibre optic cable, optical ground wire (OPGW) or underground fiber optic cable (UGFO) and all dielectric self supporting (ADSS).”

As per the above, all wideband communications shall be established using fibre optic communication.

30. The Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS) issued by MoP on 09.03.2022 provides as under:

“Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)

1. Introduction

In order to achieve safe, secure, stable and reliable operation of the grid as well as its economical and integrated operation, communication system plays a critical role. The communication system may be treated as an integral part of the transmission system. Therefore, it is imperative to carry out the planning for Communication System in Power Sector.

For planning, and coordination for development of communication system for inter-State transmission system, Central Transmission Utility is designated as the nodal agency.

Ministry of Power has formulated this guidelines named as “Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)”. This guidelines defines the categories of Communication System Schemes for ISTS and their corresponding approval procedure.

2. Objective

Considering the critical role of Communication System in ISTS, a separate guidelines for its planning is essential. This guideline on Planning of Communication System for Inter-State Transmission System (ISTS) is being formulated with the objective to help in efficient, coordinated, smooth, economical and uniform planning of Communication System for ISTS.

3. Applicability

i. This guideline shall come into force from the date of its issuance by the Ministry of Power.

ii. The guidelines shall be applicable for communication system for ISTS only.

4. Categorization of Communication Schemes/Packages



Communication Schemes/Packages under this policy are categorized as Category (A) and Category (B). The description of categories is as under:-

Category (A): Communication system directly associated with new ISTS as well as incidental due to implementation of new ISTS elements (e.g. LILO of existing line on new/existing S/s where OPGW/terminal equipment are not available on the existing main line/substations etc.)

Category (B): Upgradation/modification of existing ISTS Communication system pertaining to following:

- Missing Links
- Redundancy/ System Strengthening
- Capacity upgradation (Terminal equipment)
- Completion of life of existing communication system elements
- Other standalone project e.g. Cyber Security, Unified Network Management System (UNMS)
- Adoption of New Communication Technologies

5. Procedure for approval of Communication Schemes/Packages

Category (A): As planning of ISTS Communication System is an integral part of planning of new Inter-State Transmission System, the requirement for communication system linked with new ISTS shall be included in new ISTS package and combined proposal shall be approved as per the directions contained in MoP office order dated 28.10.2021 regarding Re-constitution of the "National Committee on Transmission" (NCT).

Further, Communication requirements which are incidental due to implementation of new ISTS elements (e.g. LILO of existing line on new/existing S/s where OPGW/Terminal Equipment are not available on the existing main line/substations etc.) are also to be approved alongwith that of respective transmission system package.

Category (B):

Communication Schemes/Packages proposed by CTUIL for upgradation/modification of existing ISTS Communication System, standalone projects, adoption of new technologies shall be put up to RPC for their views. RPC to provide their views on the Schemes/Packages proposed by CTUIL within 45 days of receipt of the proposal from CTUIL.

The Schemes/Packages alongwith the views of RPC shall be approved by NCT.

6. Communication system shall be planned in accordance with Central Electricity Authority (Technical Standards for Communication System in Power System Operations) Regulations, Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, Manual of Communication System Planning in Power System Operation published by Central Electricity Authority and other relevant regulations/guidelines/orders/policies issued by Government of India for development of reliable communication system for the power system."

As per the above, Communication Schemes shall be proposed by CTUIL for the upgradation/modification of the existing ISTS Communication System, standalone projects, and adoption of new technologies, respectively.

31. We observe that the modalities of implementation of the said OPGW by the existing transmission licensee or POWERGRID are not covered specifically in the MOP



Communication Guidelines. However, on the direction of the Commission, Petitioner has convened meetings on 14.07.2021,13.08.2021,13.03.2023 and 8.05.2023 with the ISTS licensees to come out with a suitable proposal for smooth and proper adjudication of the issues involved. Consensus for the installation of OPGW by replacing the existing earth wire has been reached in the meetings held on 13.03.2023 and 08.05.2023. The relevant extracts of the same are as follows :

Minutes of the Meeting held on 13.03.2023 between CTU, POWERGRID &NRSS XXXI (B) Transmission Ltd./ Sekura

“

3. CTU added that a compliance affidavit was submitted before CERC after receiving communication from POWERGRID that it has no objection if the implementation of laying of OPGW is undertaken by M/s NRSS XXXI (B) Transmission Ltd. / Sekura on its 400kV D/C Malerkotla - Kurukshetra line. Subsequently M/s NRSS XXXI (B) Transmission Ltd. / Sekura submitted a proposal to CTU via letter dtd. 23.01.2023 for OPGW installation on its 400kV Malerkotla - Kurukshetra line as well as on 400kV Malerkotla – Amritsar line of 48F OPGW on both the lines.
4. CTU further informed that after reviewing the proposal of M/s NRSS XXXI (B) Transmission Ltd. / Sekura, the 400kV D/C Malerkotla – Amritsar line was not found to be required at present for OPGW installation. Moreover, the OPGW fibre capacity of 24F is sufficient at present. In view of this CTU has put up an agenda in 63rd NRPC for OPGW installation on the 400kV D/C Malerkotla - Kurukshetra line with 24F OPGW. NRPC after deliberations, was of the view that Hon'ble CERC should be apprised about the proposal before reviewing in RPC and getting approved in NCT. If M/s NRSS XXXI (B) Transmission Ltd. / Sekura wants to install OPGW on its 400kV D/C Malerkotla – Amritsar line and 48F in place of 24F in both 400kV D/C Malerkotla - Kurukshetra line & 400kV D/C Malerkotla – Amritsar line, the cost of the OPGW with 48F on 400kV Malerkotla – Amritsar line and additional fibers of 400kV D/C Malerkotla - Kurukshetra line shall be borne by the M/s NRSS XXXI (B) Transmission Ltd. / Sekura.
5. CTU further stated that the various issues raised earlier by M/s NRSS XXXI (B) Transmission Ltd. / Sekura viz., impact on tariff and revenue after replacement of earthwire with OPGW (POWERGRID Ownership), handing over the earth wire to POWERGRID, rectification of any damaged asset in the process of OPGW installation, prior intimation & work planning of OPGW laying work and; details of responsible contractor, indemnification on of any outage or claimed compensation by any landowner, issue related to the ownership of the OPGW and its O&M, and issue related to any commercial use of OPGW etc. shall get resolved as the OPGW laying work shall be awarded to NRSS XXXI (B) Transmission Ltd. / M/s Sekura after NCT approval under RTM mode, and M/s Sekura being the Owner of this ISTS transmission line the ownership of this OPGW would also remain with them.
6. NRSS XXXI (B) Transmission Ltd. / M/s Sekura suggested that this OPGW work shall be awarded to them as additional work by change in the original transmission line scope and cost of the same shall be recovered by revision in their existing TBCB tariff. However, CTU stated that as the TBCB asset has already lived its prominent life so this work shall be awarded in RTM mode and tariff of the same shall be determined by the applicable RTM regulations of CERC.
7. CTU stated that deliberations of this meeting shall be communicated to CERC as part of Petition no. 94/MP/2021.



.....”

As per the above, NRSS XXXI(B) Transmission Ltd / M/s Sekura suggested installing 48 F OPGW in place of 24 Fibre suggested by CTUIL. Further, Sekura suggested that OPGW work may be awarded to them as additional work by a change in the original transmission line scope, and the cost of the same may be recovered by a revision in their existing TBCB tariff. However, CTU stated that this work shall be awarded in RTM mode, and the tariff of the same may be determined as per RTM regulations of CERC. Further, CTU also stated that various issues raised earlier by M/s NRSS XXXI (B) Transmission Ltd. / M/s Sekura shall also be resolved by awarding the OPGW work to them.

Minutes of the Meeting held between CTU & ISTS Transmission Licensees on 08.05.2023

“7. With reference to above ROP and MOP guidelines, CTU proposed below mentioned methodology for deliberation during the meeting:

Sr. No.	CTUIL proposal for deliberations
(i)	<p><i>In view of MoP “Guidelines on Planning of Communication System for Inter-State Transmission System (ISTS)” dtd. 09.03.2022 and recent approvals of OPGW on existing lines, following is proposed:</i></p> <p><i>(i) OPGW installation work under ISTS Communication requirement shall be awarded to the transmission line asset owner.</i></p> <p><i>(ii) Terminal equipment associated with OPGW cable shall be awarded to bay owner/s of the transmission line on which OPGW is proposed for installation.</i></p> <p><i>If the Asset owners refuses the work same shall be deliberated in the NCT and awarded to other party with consent of existing asset owner/s.</i></p>
(ii)	<p><i>Other views of Transmission licensees on the above</i></p>

8. Sekura agreed for the methodology put up by CTU, however they raised the concern of provision of Fibre Optic Terminal equipment (FOTE) at bays level for their line, 400kV Kurukshetra- Malerkotla. POWERGRID confirmed they shall provide FOTE as the bays are owned by them as suggested by CTU.

9. Indigrd enquired about the modalities of using OPGW for ISTS communication which is provided by the TSP which was not originally in the scope of RFP of a transmission line. CTU informed that such issues shall be dealt on case-to-case basis in the RPC forum, in view of ISTS system requirement.

10. Other licenses also agreed to the CTU proposal.

.....”

As per the above, it was agreed that OPGW installation work under ISTS Communication requirement might be awarded to the transmission line asset



owner, and if the asset owners refuse the work, same may be deliberated in the NCT and awarded to another party with the consent of existing asset owner(s).

32. We observe that Communication systems are essential to facilitate secure, reliable and economic operation of the grid and are an important pre-requisite for the efficient monitoring, operation and control of the power system CTU, has been entrusted with the responsibility of planning and coordination for the development of an efficient and coordinated communication system on a regional basis to provide a backbone communication system for the ISTS under various Regulations of CEA and CERC and Guidelines of MOP.

33. We observe that during the meetings held on 13.03.2023 and 8.5.2023, Petitioner CTUIL and Respondent No.1 Sekura have agreed on the modalities of implementation of OPGW on instant transmission asset of Malerkotla-Kurukshetra line. Further, during the hearing on 15.05.2023, CTUIL based on the meeting held on 08.05.2023 between CTU and various transmission licensees, submitted that the OPGW work may be awarded to the transmission line asset owner. Accordingly, the work of replacement of earth wire under instant case may be allowed to be executed by the transmission licensee owning such earth wire following the required procedure with the approval of the competent authority.

Issue No. 2: What other factors need to be considered while such replacement is carried out, such as impact on discovered tariff, availability, loss due to damage etc, for the Transmission licensee?

34. During the Meeting held on 13.03.2023 and during a hearing on 15.05.2023, CTU has submitted that the work may be awarded in RTM mode and the tariff of the same may be determined by the Commission as per the applicable regulations.

35. Respondent No.1 has submitted that the implementation of the Communication System by replacing the earth-wire with OPGW cables is an additional requirement under the mandate of law, and the same may be considered under the Change in Law provision of the Transmission Service Agreement (TSA). Further, the consequences of Change in Law and, in particular, the computation of the impact thereof upon the tariff have been set out in detail under the TSA, and any change in tariff would fall within the purview of the TSA.



36. We observe that installation of OPGW is a requirement which has emerged at a stage after the TBCB project has been declared commercial. Further, we observe that the tariff of the TBCB Project is governed in terms of TSA and are of the view that appropriate compensation needs to be provided for recovery of additional expenditure towards OPGW installation and its maintenance by the licensee.
37. We have perused the TSA signed on 02.01.2014 between NRSS XXXI (B) Transmission Limited and LTTCs, submitted in another Petition No. 89/TT/2014, which provides the treatment of Change in Law as under:

“12 CHANGE IN LAW

12.1 Change in law

12.1.1 *Change in law means the occurrence of any of the following after the date, which is seven (7) days prior to the Bid Deadline resulting into any additional recurring/ non – recurring expenditure by the TSP or any income to the TSP:*

- *The enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law;*
- *a change in the interpretation or application of any Law by any Indian Governmental Instrumentality having the legal power to interpret or apply such Law, or any Competent Court of Law;*
- *the imposition of a requirement for obtaining any Consents, Clearances and Permits which was not required earlier;*
- *a change in the terms and conditions prescribed for obtaining any Consents, Clearances and Permits or the inclusion of any new terms or conditions for obtaining such Consents, Clearances and Permits;*
- *any change in the licensing regulations of the Appropriate Commission, under which the Transmission License for the Project was granted if made applicable by such Appropriate Commission to the TSP;*
- *any change in the Acquisition Price; or*
- *any change in tax or introduction of any tax made applicable for providing Transmission Service by the TSP as per the terms of this Agreement*

12.2 Relief for Change in Law

12.2.1 During Construction Period

During the Constriction Period, the impact of increase/decrease in the cost of the Project in the Transmission Charges shall be governed by the formula given below:

- *For every cumulative increase/decrease of each Rupees One Crore Fifteen Lakhs Eighty Thousand Only (Rs. 1.158 Cr) in the cost of the Project up to the Scheduled COD of the Project, the increase/decrease in Non-Escalable Transmission Charges shall be an amount equal to Zero Point Three One Three percent (0.313%) of the Non-Escalable Transmission Charges.*

12.2.2 During the Operation Period:

During the Operation Period, the compensation for any increase/decrease in revenues shall be determined and effective from such date, as decided by the Appropriate Commission whose decision shall be final and binding on both the Parties, subject to rights of appeal provided under applicable Law.

Provided that the above mentioned compensation shall be payable only if the increase/decrease in revenues or cost to the TSP is in excess of an amount equivalent to one percent (1%) of Transmission Charges in aggregate for a Contract Year.



12.2.3 For any claims made under Articles 12.2.1 and 12.2.2 above, the TSP shall provide to the Long Term Transmission Customers and the Appropriate Commission documentary proof of such increase/decrease in cost of the Project/ revenue for establishing the impact of such Change in Law.

12.2.4 The decision of the Appropriate Commission, with regards to the determination of the compensation mentioned above in Articles 12.2.1 and 12.2.2, and the date from which such compensation shall become effective, shall be final and binding on both the Parties subject to rights of appeal provided under applicable Law.”

We observe that the instant case of replacement of earth wire with OPGW is a work which was not part of the original scope of TSA. Since the OPGW has not been provided with a separate transmission licence, we are not inclined to consider the suggestion of CTU to consider the instant work of replacement under RTM. We observe that TSA provides for treatment of additional expenditure under “Change in Law”. We are of the considered view that additional expenditure on account of the replacement of earth wire after adjusting the buy-back or the scrap value of that earth-wire shall be treated in the manner as expenditure under Change in Law so that its recovery is simplified. The transmission licensee is directed to follow a transparent process of competitive bidding while implementing such work. After implementation of the work, the transmission licensee is required to approach the Commission for approval of such expenditure along with audited data of the expenditure and details of competitive bidding carried out by it. The transmission licence shall not be required to be amended to include OPGW since the transmission licence issued to Respondent No.1 does not specifically provide the specification of earth wire, and OPGW shall be considered within the same transmission licence.

38. Further regarding the treatment of deemed availability for the period when such replacement is carried out, we have perused the TSA signed on 02.01.2014 between NRSS XXXI (B) Transmission Limited and LTTCs, submitted in another Petition No. 89/TT/2014, which provides the provision for availability of the project as under:

“8 AVAILABILITY OF THE PROJECT

8.1 Calculation of Availability of the Project:

Calculation of Availability for the Elements and for the Project, as the case may be, shall be as per Appendix IV of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009, as applicable seven (7) days prior to the Bid Deadline and as appended in Schedule 9.

.....



Schedule 9

Appendix IV of Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009

Procedure for Calculation of Transmission System Availability Factor for a Month

.....
5. The transmission elements under outage due to following reasons shall be deemed to be available:

i. Shut down availed for maintenance or construction of elements of another transmission scheme. If the other transmission scheme belongs to the transmission licensee, the Member-Secretary, RPC may restrict the deemed availability period to that considered reasonable by him for the work involved.

ii. Switching off of a transmission line to restrict over voltage and manual tripping of switched reactors as per the directions of RLDC.

.....”

As per the above, the transmission elements under outage due to shutdown availed for maintenance or construction of elements of another transmission scheme, which may be of the same transmission licensee also, shall be deemed to be available. Hence the issue of deemed availability shall be handled accordingly.

39. Considering the above we are of view that the treatment of deemed availability during the period of OPGW installation work by replacing the exiting earth wire, shall be treated in terms of the provisions under TSA.

40. CTUIL is directed to follow similar principles for facilitating and allowing OPGW installation by other transmission licensees.

41. The Petition No. 94/MP/2021 is disposed of in terms of the above.

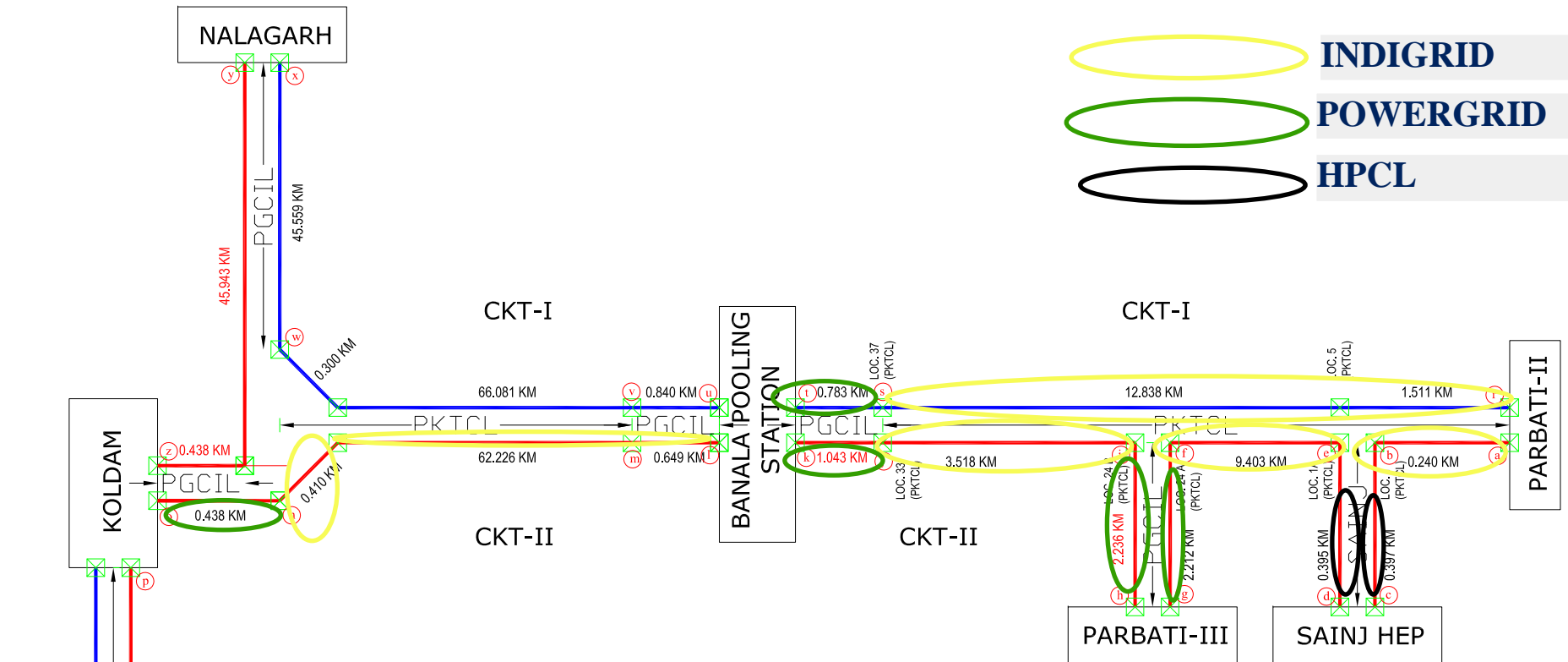
Sd/
(P. K. Singh)
Member

Sd/
(Arun Goyal)
Member

Sd/
(I. S. Jha)
Member

Sd/
(Jishnu Barua)
Chairperson





LINE LENGTH OF ELEMENTS:

S.NO.	NAME OF ELEMENT	LINE LENGTH IN CKT-KM			
		PKTCL	PGCIL	SAINJ	TOTAL
1.	PARBATH-II TO SAINJ (a-b-c)	0.240	-	0.397	0.637
2.	SAINJ TO PARBATH-III (d-e-f-g)	9.403	2.212	0.395	12.010
3.	PARBATH-III TO BANALA (h-i-j-k)	3.518	3.279*	--	6.797
4.	BANALA TO KOLDAM (l-m-n-o)	62.636	1.252	--	63.888
5.	KOLDAM TO LUDHIANA (CKT-I) (p-q)	150.642	-	--	150.642
6.	KOLDAM TO LUDHIANA (CKT-II) (p-q)	150.642	-	--	150.642
7.	PARBATH-II TO BANALA (r-s-t)	14.349	0.783	--	15.132
8.	BANALA TO NALAGARH (u-v-w-x)	66.381	46.399	--	112.780
9.	NALAGARH TO KOLDAM (y-z)	-	46.381*	--	46.381
	TOTAL	457.811	100.306	0.792	558.909

* Distance needs to be verified from PGCIL

DRAWING NOT TO SCALE.

ALL DIMENSIONS ARE IN KM.

PARBATHI KOLDAM TRANSMISSION CO. LTD

LINE DIAGRAM OF
400 KV S/C, D/C PARBATHI-KOLDAM-LUDHIANA
TRANSMISSION LINES

PREPARED BY

CHECKED BY

APPROVED BY

SCALE : N.T.S

DATE : 26.04.2018

PKTCL/GGN/ID/REV:



H P POWER TRANSMISSION CORPORATION LIMITED
(A State Government Undertaking)

Annexure-XVI

DGM (Protection & Communication), Chowki Jamwalan, Hamirpur (HP)
Email- dgmprot.tel@hpmail.in

No: HPPTCL/DGM(P&C)/Lahal/PC-67/2024-775-779

Dated: 07/02/2024

To

The Superintending Engineer,
Northern Regional Power Committee,
New Delhi - 110016.

Subject: Approval for sharing of Fiber Pairs on OPGW of 400 kV Lahal-Rajera (Chamera Pooling) and 220 kV Lahal-Budhil for redundant for Chamera-III (NHPC) & Budhil (Green Co.).

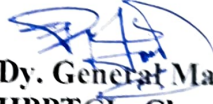
Sir,

With reference to the subject cited matter, the competent authority of HPPTCL has given the approval with some terms and conditions vide letter no. HPPTCL/Proj./F-143 23-24-1327258/2024 dated 23.01.2024 (Copy attached).

This is for your kind information and further necessary action, please.


Yours faithfully,

DA: As Above.


Dy. General Manager (P&C),
HPPTCL, Chowki Jamwalan,
Hamirpur (HP).

Copy to following for kind information & necessary action, please: -

1. The GM (Projects), HPPTCL, Himfed Bhawan, Shimla-5.
2. The GM (C&D), HPPTCL, Himfed Bhawan, Shimla-5.
3. The DGM (Projects), HPPTCL, Chamba (H.P.).
4. The Sr. Manager (Proj.), HPPTCL, PIU Lahal Distt. Chamba (H.P.).


Dy. General Manager (P&C),
HPPTCL, Chowki Jamwalan,
Hamirpur (HP).

/327258/2024

Web: - www.hpptcl.com

H. P. POWER TRANSMISSION CORPORATION LTD.

(A State Govt. Undertaking)

Regd. Office: Himfed Bhawan, New ISBT Road, Panjari, Shimla-171005

Ph.: - 0177-2831283, 2831284 FAX -0177-2831284

(CIN): U40101HP2008SGC030950

(GSTIN): 02AACCH1548M1ZP

No. HPPTCL/Proj./F-143/23-24 - I/327258/2024

Dated: 23/01/2024.

To

The DGM (P&C), HPPTCL,
Chowki Jamwalan,
Hamirpur(H.P.)

Subject: - Approval for sharing of Fiber Pairs on OPGW of 400kV Lahal-Rajera(Chamera Pooling) and 220kV Lahal-Budhil for redundant for Chemra-III(NHPC) & Budhil(GreenCo.).

Ref: Letter no. HPPTCL/DGM(P&C)/PC-67/2023-491-493, dated: 07/10/2023.

Dear Sir,

With reference to your letter dated 7/10/2023 on the subject matter, it is hereby conveyed that the capital investment made by HPPTCL for establishing its transmission and associated communication infrastructure is or will be recovered from the users of its transmission system. The users hold the rights of usage of the transmission system under the regulatory framework. While there are regulatory guidelines for sharing transmission assets, this office is not aware of any Central or State regulatory provision permitting or requiring HPPTCL (STU-HP) to share dark fibers in its transmission network for non-commercial usage by other agencies.

However, considering the nature of the request—establishment of a redundant communication system for Lahal-Budhil-Chamera-III, as discussed in the 23rd Meeting of the Telecommunication, SCADA, & Telemetry Sub-Committee on 21/09/2023—the competent authority of HPPTCL has approved the provision of a total of 3 pairs (6 fibers) to PGCIL/ULDC on the 1. 220kV Lahal(HPPTCL)-Budhil(GreenCo) and 2. 400 kV Lahal(HPPTCL)- Chamera Pooling(PGCIL) Transmission Lines. This approval is subject to the following conditions:

1. The fibers shall be strictly used for the Non-Commercial Grid Telemetry Communication System for the transmission of electricity.

Er. Abhishek Kumar
30/01/24



SM (C)
A

1327258/2024

2. HPPTCL reserves the right to withdraw the approval of sharing with a one-month notice at its discretion.
3. Any policy/regulation from statutory bodies regarding the sharing of OPGW on transmission lines shall override this approval.
4. Any charges payable for sharing dark fibers, if determined by the appropriate authority, shall apply.

This is for your kind information and further necessary action please.

Signed by

Anil Gautam

Date: 23-01-2024 10:48:58

**General Manager (Projects),
HPPTCL, Himfed Bhawan,
Panjari Shimla, 171005**

Copy to:

1. The General Manager(C&D), HPPTCL, Himfed Bhawan, Shimla-05.

— Sd —

**General Manager (Projects),
HPPTCL, Himfed Bhawan,
Panjari Shimla, 171005**

Minutes of Meeting for Planning of Communication system for Inter-State Transmission system (ISTS) among RLDCs, POWERGRID, CTUIL and CEA held in Virtual Mode on 05.04.2023.

Meeting started with opening remarks from Sr. GM (CTUIL). He welcomed all the participants in communication planning meeting for deliberating the planning aspects common to all regions for which the agenda has been circulated.

List of participants is attached at **Annexure-I**.

1) Dual reporting of RTU, PMU, VOIP, AGC etc applications on dual channel to RLDC and Back up RLDC.

Presently, all the data channels and voice channels are reporting in main and backup mode with a main channel to RLDC and protection channel to Backup RLDC. It is suggested by ERLDC & WRLDC that for increase of redundancy in the system both main and protection channels should report to RLDCs as well as back up to RLDCs in dual mode considering the criticality of real time grid operations by the ERLDC.

Deliberation:

NRLDC stated that as per communication regulation/IEGC dual channel reporting for all communication applications from each ISTS station is required for both main and back up RLDCs. This requirement has also been conveyed by ED, NLDC to ED, GA & C vide letter dtd.16.03.2020

It is stated that present channel configuration operational at different RLDCs for main and back up CC respectively is as follows:

- a) NRLDC:1+1 & 2+1(for few stations)
- b) SRLDC:1+1
- c) WRLDC:2+1
- d) ERLDC:1+1
- e) NERLDC:1+1

POWERGRID stated that they are designing the ISTS Communication system with 1+1 channel configuration i.e one channel for main and the other for back up.

CTUIL finally stated that NRLDC/CEA shall suggest the requirement of channel/s for each communication application based on the available communication regulation/standards etc.

CEA/NRLDC agreed for the same and shall provide the information in this regard within a week.

2) Frequent failure of VOIP exchange/ voice communication at ERLDC

ERLDC representative informed in the 12th TeST meeting that for last few months it has been observed that VOIP exchange at ERLDC was down around 6 to 7 times in odd hours and restoration of the same took long hours. ERLDC suggested that an additional voice communication channel need to be configured and integrated with NLDC VOIP exchange from all ISTS and SLDC in 1+1 mode configuration with NLDC /ERLDC.

ERPC suggested that a standard format regarding backup of communication equipment and their configuration at SLDC/ERLDC/NLDCs etc shall be evolved as per requirement.

Deliberation:

ERLDC stated that as of now the present system is running smoothly but the new VOIP system may be planned in 1+1 mode configuration.

POWERGRID stated that for the present VOIP system, AMC extension for one year is being taken up. They also informed that this issue will affect multiple regions & utilities, as OEM of PABX has expressed its inability in extending further AMC support for the existing systems due to old version. Further, they also stated that upgradation of VOIP system is required for maintaining it for another five years. POWERGRID requests CTUIL & Grid-India to take advance action for planning of upgradation or replacement of PABX system for all utilities. In this regard, POWERGRID has provided letter from OEM which is attached at **Annexure II**.

CTUIL suggested that POWERGRID shall convene a meeting with POSOCO and CTUIL along with OEM for discussing the upgradation features of PABX.

CTUIL stated that many TSPs have also requested for their requirement of voice connectivity as stated in the agenda at Sr. no. 6 which was taken up in NRPC and yet to be decided. This aspect may be also taken up while deliberating for upgradation of VOIP system by POWERGRID.

3) Unified approach for IP addressing and proper documentation of communication system of ISTS and STU network:

All the applications like RTU, VOIP, PMU, AMRs, Firewalls, Data Center equipment etc are going to use TCP/ IP model (some of applications already using) architecture including associated communication system gradually. In such scenario, unified IP addressing scheme is very much required for all the users of inter connected system for avoiding IP conflicts and ensure proper maintenance of network.

Deliberation:

Grid-India stated that a uniform IP addressing scheme for ISTS and STU communication assets needs to be prepared to avoid IP conflicts, which have occurred in the past.

At present, IP addresses for SCADA, AGC & PMU assets are being allotted by GRID INDIA for all ISTS TSPs, ISGS, RE generators etc where as for voice communication assets i.e exchange etc. POWERGRID is doing the same for all ISTS TSPs and STU control centres. CTUIL requested CEA to give their inputs for the same.

CTUIL stated that the uniform IP addressing scheme shall be taken up by Grid-India for all assets stated above.

POWERGRID agreed to share IP address details with GRID INDIA for formulating the addressing scheme.

CTUIL further suggested that the agenda may be put up in TeST meeting forum by Grid-India.

4) UNMS Console at RLDCs:

ERLDC & NRLDC requested the console for monitoring of ISTS Communication Network. Because, without this console it would not be possible to monitor the network by RLDC.

POWERGRID informed in 3rd Communication Planning Meeting (CPM) that as of now provision of console at RLDCs is not in the scope of project.

Deliberation:

POWERGRID informed that UNMS project is not having provisions for consoles at RLDCs & NLDC. They stated that amendment in contract after RPC/NCT approval (as applicable) may be done for requirement of console at RLDCs and CTUIL. Approval on said requirement may be given to POWERGRID before June to incorporate through amendment under the awarded packages. POWERGRID also agreed to provide cost estimate for provisioning of console at RLDCs and CTUIL before TCC/RPC.

CTUIL stated that different regional LDCs may give their agenda for requisition of separate console so that it may be taken up in respective regional TeST meeting and subsequently approval of RPC/NCT.

5. Redundancy philosophy in case of availability of only one transmission line from one ISTS/ISGS station to the DCP:

In many cases, especially in the case of terminal nodes, it is observed that they are connected to only one transmission line and protection path via alternate OPGW on separate transmission line is not feasible. In this scenario, for providing protection path following options may be explored:

- a) OPGW on same transmission line on second peak.

- b) VSAT
- c) Lease line

Deliberation:

POWERGRID expressed concerns on “Communication Availability” in view of OPGW on same tower on second peak, VSAT & leased line. POWERGRID requests CTUIL & Grid-India to clarify on the communication availability in case both OPGW outages occur (same tower having two OPGWs or OPGW-ADSS) & in case downtime of VSAT due to weather conditions.

Grid-India replied that NPC has already released the Communication Availability criterion & POWERGRID’s concerns will be considered at the time of planning.

Further, Grid-India (ERLDC) suggested that VSAT or leased line both being third party networks are not recommended due to the following considerations:

1. Cyber security issue.
2. Monitoring of VSAT link at the service provider’s hub only.
3. Latency issues.

CTUIL stated that for such cases, OPGW on second peak of same transmission line is sufficient as a redundant path. Further, ADSS may be opted for where second peak for the same transmission line is not available.

6. Voice connectivity to TSPs control centre with Grid-India control centres:

Some TSPs have requested for such requirement for their upcoming control centres in NCR. They have stated that from these control centres they will monitor their ISTS assets throughout the country.

Deliberation:

Deliberation for agenda Sr. no. 2 may be referred.

7. Updation of ISTS communication map:(agenda by NRLDC)

NRLDC stated that updated map of ISTS communication system is required for proper monitoring and supervision of communication system.

Deliberation:

CTUIL agreed to update the ISTS communication system map and share it with GRID INDIA. CTUIL also stated that ISTS links in the ongoing projects under NERPSIP and Comprehensive scheme can only be updated in map on receipts of inputs by NERLDC/POWERGRID.

NERLDC agreed to provide the inputs within one week.

8. Redundant fiber connectivity to ERLDC and SLDCs (agenda by ERLDC):

ERLDC requested CTUIL to plan for redundant fiber connectivity to SLDCs and ERLDC. Further, such connectivity are also required in other regions also.

Deliberation:

CTUIL stated that planning of redundant fiber path connectivity of various SLDCs of ER with ERLDC shall be taken up by CTUIL in regular communication planning meetings after receiving inputs of such links by ERLDC. Moreover, other regions shall also provide these inputs to be taken up in communication planning meeting of their regions.

Meeting ended with a vote of thanks from CTUIL.

Annexure-I

The list of participants is listed below:

CEA

Ms Prium Srivastava D.Dir

CTUIL

Sh H.S. Kaushal Sr.GM
Sh S.K Gupta Sr. DGM
Sh T P Verma Ch. Mgr
Sh Kaushal Suman Manager

POWERGRID

Ms Shyama Kumari DGM
Sh Sundeep Gupta Ch. Manager

NLDC

Sh Harish Kr Rathour GM

SRLDC

Sh M.K Ramesh CGM
Sh Abdullah Siddique Ch. Mgr
Sh Sudeep. M Mgr

ERLDC

Sh L Muralikrishna Sr.DGM
Sh D. Biswas Sr.DGM
Sh B. Mondal Mgr

WRLDC

Sh M M Mehendale CGM
Sh Sanjeev Chandrakar GM

NERLDC

Sh S P Burnwal Sr.GM
Sh Akhil Singhal DGM
Sh Sakaldeep Asst. Mgr
Sh Pouminlal Dongel Engr

NRLDC

Sh M M Hassan CGM
Sh Ankur Gulati Ch. Mgr

To,
Chief Manager (NR-ULDC)

Date-09-03-23

POWERGRID

RHQ, NRTS-I, Faridabad

Ref: Upgradation/Extension of AMC for EPABX System installed under Hot Line Speech Communication System (Alcatel Lucent)

Name of work: PROCUREMENT OF IP Based EPABX System.

Dear Sir,

With reference to mentioned subject we would like to mention that EPABX system which has been installed in 2016-17 under mentioned project has older version only i.e. 11.0.

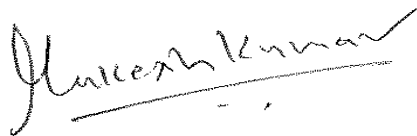
At present 100.1 version is available and all new hardware which is available will be supportable to new version only.

So to continue with Comprehensive AMC we need to first upgrade/migrate the system with the latest software version then we can continue for AMC.

We here by also confirm that post upgration we can support for further minimum 5 years.

Please suggest how can we proceed.

Sincerely yours,
for ALE India Pvt. Limited



Authorised Signatory
Name: Mukesh Kumar
Designation: Deputy General Manager
E-mail Id-Mukesh.kumar-sharma@al-enterprise.com

Minutes of the Meeting(Virtual mode) held on 09.05.2023 (Tuesday)regarding dual reporting of RTU, PMU, VOIP, AGC etc. applications

A meeting on the subject was held on 09.05.23 at 11:00 AM with participants from CEA, RLDCs, CTUIL, Grid-India, and POWERGRID. List of the participants is enclosed at Annexure-I. 2. At the outset Sr. .DGM (CTU) welcomed the participants and explained the agenda to all the participants. He requested all the participants to contribute their valuable suggestion for agenda to reach at some conclusion.

Agenda: Dual reporting of RTU, PMU, VOIP, AGC etc. applications on 2+2 channel to main RLDC and Backup RLDC

Presently, one data channel and one voice channel are routed for reporting to main RLDC and similarly one data & one Voice channel is reporting at backup RLDC.

It is proposed by GRID INDIA that to increase of the redundancy in the system at least two data channels and two voice channels shall be routed for reporting to main RLDC and another two data & two Voice channels shall report at backup RLDC.

A detailed deliberation in meeting dated 05/04/23 was done among RLDCs, POWERGRID, CEA for evolving a common planning philosophy for all regions.

In the meeting GRID INDIA stated that as per communication regulation 2017/IEGC dual channel reporting for all communication applications from each ISTS station is required for both main and back up RLDCs. This requirement has also been conveyed by ED, NLDC to ED, GA & C vide letter dtd.16.03.2020

It was stated in the meeting that present channel configuration operational at different RLDCs for main and back up CC respectively is as follows:

- a) NRLDC:1+1 & 2+1(for few stations)
- b) SRLDC:1+1
- c) WRLDC:2+1
- d) ERLDC:1+1
- e) NERLDC:1+1

POWERGRID stated that they are designing the ISTS Communication system with 1+1 channel configuration i.e. one channel for main RLDC and one channel for back up RLDC.

However, CEA recommended as follows: Manual of Communication Planning in Power System Operation clause 4.1.2 states:- “To ensure redundancy with route diversity, each communication channel (working path) planned for the Users shall be provided with alternate channel (protection path) in different routes, i.e., the working path and protection path should be resource disjoint. For last mile connectivity to load dispatch center(s), additional redundancy in different route may be considered. In case of failure of the working path, the protection path shall be available for the required communication services.”

Therefore, dual redundancy may be planned for both main and back-up load dispatch centers.

At present following services are working on ISTS communication network:

- i.** SCADA
- ii.** PMU
- iii.** Tele protection
- iv.** Telecontrol
- v.** AGC
- vi.** Voice
- vii.** Automated Metering Application
- viii.** Telemetry
- ix.** Video conferencing
- x.** ICCP (between control centers)
- xi.** PDC
- xii.** PDC to PDC
- xiii.** Supervision of communications System
- xiv.** Video Surveillance
- xv.** Data Sync between MCC & BCC

The above applications need to be deliberated for dual redundancy requirement.

POWERGRID shall implement this redundancy for both main and backup Regional load dispatch center(s) in all the regions wherever possible with the existing resources in coordination with GRID INDIA.

In case of any additional requirement for implementation of redundancy POWERGRID may update the details region wise i.e. availability of SAS gateway ports, spare ethernet ports in existing FOTE, new FOTE if any etc. . POWERGRID shall quantify these requirements along with tentative costs on Regional basis.

The action to be taken up by TSPs, IPPs, ISTS, ISGS besides POWERGRID also needs to be discussed.

Deliberations: CGM(SRLDC) explained that Main and Backup control centre is old terminology and now Main-I & Main-II control centre terminology is being used and at each control centre one main & one backup channel is required. Grid India(NRLDC) explained that at present data is being transmitted to respective main & Backup RLDCs using 101 protocol through terminal server/DCPC for old RTUs and by using 104 protocol for SAS. Grid India agreed to share this detail in a week time. Further, POWERGRID informed that RTUs are being replaced with SAS (104 PROTOCOL) as soon as their life is completed. POWERGRID shall share the plan for replacement of RTUs communicating on 101 Protocol.

POWERGRID queried that in CEA planning manual, only route redundancy is mentioned and no where port redundancy is stated. Hence it needs to be clarified whether port level redundancy is also required. CEA clarified that path should be resource disjoint and so both path and ports should be resource disjoint. POWERGRID (NR-ULDC), stated that there is constraint of ports for dual redundancy of SCADA data in the RTUs procured under sub-station package and agreed for upgradation of same subject to approval. POWERGRID further clarified that RTUs with sufficient ports for dual redundancy are being planned recently as requested by ED(NLDC) -GRID INDIA vide letter dated 16.03.2020.

At present PMU data is reporting to single location i.e. Main RLDC as per current planning under URTDSM project. Grid India further stated that PMU data is transmitted on dual channel through switch to main RLDC. Grid India require multi ports at PMU for dual redundancy. Further redundant communication between SLDC PDC to RLDC PDC, RLDC PDC to Main/backup NLDC PDC shall also be required.

Tele protection & Telecontrol are operated by TSPs and should be in dual redundancy.

For AGC services dual redundancy is already considered & being implemented by TSPs . Dual channels to Main and Backup NLDC are required for AGC.

For Voice dual redundancy is also required. For the same, exchange to exchange dual redundancy shall be planned. Exchanges are placed at all SLDCs & RLDCs. At present Substation to Exchange link level protection is already available.

For AMR dual redundancy is also required. At present single channel is reporting to RLDC. For video conferencing Grid India is requested to justify the requirement of dual redundancy as per industry practice as mentioned in 'Manual For Communication Planning' as suggested by CEA.

For ICCP dual redundancy is required for main RLDC to Backup RLDC, Main RLDC to main SLDC, Main RLDC to backup SLDC, Backup RLDC to Main SLDC, Backup RLDC to backup SLDC as planned under new SCADA system.

For PDC to PDC dual redundancy is also required. CTU requested Grid India to share the architecture of new SCADA, PDC communication, ICCP.

Supervision of communication channels & Video Surveillance are not used by Grid India. However, TSPs/ CTU may plan as per their requirement.

For data sync dual redundancy between MCC and BCC is also required.

ERLDC, Grid India suggested that planning for terminal equipment(SDH/PDH)at dual redundancy is also required. However, it is suggested that dual redundancy of terminal equipment may be planned for critical locations such as AGC, SPOFs(Single point of failures).

As per discussion, following applications are summarised below for dual redundancy up to existing and upcoming control centres of Grid India.

- i. SCADA
- ii. PMU
- iii. AGC
- iv. Voice
- v. Automated Metering Application
- vi. ICCP (between control canterers)
- vii. PDC to PDC
- viii. Data Sync between MCC & BCC

Conclusion

1. Grid India shall share the data for all the RTUs/SAS , their connectivity type(single or dual redundancy) & all other relevant data for all the TSPs(IPPs, ISGS, TBCB,RTM etc.) within a week time.
2. POWERGRID shall analyse the existing system for dual redundancy and implement the dual redundancy with existing resources wherever possible.
3. POWERGRID shall further state the additional requirements of ports/cards/equipment etc. along with cost for implementation of dual redundancy to above mentioned services on priority where dual redundancy cannot be implemented because of resource constraints. Same shall be discussed at respective RPC forum and shall be finally approved in NCT.

Annexure-I

List of participants of the meeting

- **CEA**

1. Sh. Prateek Srivastava, Assistant Director, PCD
2. Sh. Akshay Dubey,
3. Ms. Priyam, Dy. Director, PSPA-I

- **CTUIL**

1. Sh. Shiv Kumar Gupta, Sr.DGM, CTUIL
2. Sh. Tej Prakash Verma, Ch.Mgr., CTUIL
3. Kalpana Shukla,DGM, CTUIL
4. Kaushal Suman, Manager, CTUIL

- **Powergrid**

1. Sh. Ajaya Kumar P, Sr.GM, ULDC
2. Sh. Satish Kr Sahare, GM, ULDC
3. Smt. Shyama Kumari, DGM, GA&C
4. Sh. Kapil Gupta, DGM, GA&C
5. Sh. Mahesh M, Ch. Mgr, ULDC
6. Sh. Narendra Kumar Meena, Ch. Mgr. ULDC
7. Sh. Santanu Rudrapal, Ch. Mgr, ULDC
8. Sh. Vishal Badlas, Mgr, GA&C
9. Sh. Kashif Bakht Muhammad Nabi, Dy. Mgr, ULDC
10. Sh. Ashish Kumar Das, Asst Mgr, ULDC

- **GRID- India**

1. Sh. MK Ramesh, CGM, SRLDC
2. Sh. Harish Kumar Rathour, GM, NLDC
3. Sh. Sanjeev, GM, WRLDC
4. Sh. L. Murlikrishna, Sr. DGM
5. Sh. Ankur Gulati, DGM, NRLDC
6. Sh. Sakal Deep, Engineer, NERLDC
7. Sh. Koti Naveen
8. Sh. Ananthakrishnan
9. Sh. Rakesh
10. Sh. Sudeep M
11. Bijender Singh Chhoer
12. P Dounel

RNOD (Recoded Notes of the discussion) of the virtual meeting held on 27.06.2023 (Tuesday) regarding dual redundancy of RTU, PMU, VOIP, AGC etc.

A meeting on cited subject was held on 27.06.2023 at 10:30 A.M. with the participants from CEA, RLDCs, CTUIL, GRID-India and POWERGRID. The list of the participants is enclosed at Annexure-I. At the outset Sr. GM (CTUIL) welcomed the participants and stated the requirement of two channels each at main and backup control centres, already discussed in the meeting held on 09.05.2023 and confirmed by PCD(CEA) subsequently. In view of this CTU requested the participants to provide their valuable views/suggestions for each application for the said redundancy.

Deliberation:

CTU stated that at present one data channel and one voice channel are routed for reporting to main RLDC and similarly one data & one voice channel is reporting at backup RLDC. However, during the meeting held on 09.05.2023, GRID-India requested for at least two data channels and two voice channels for reporting to each RLDC i.e. main RLDC and backup RLDC, to increase the redundancy in the system.

Further CTU stated to deliberate on all the data and voice applications being used from stations to control centres (CC) and among CCs viz SCADA, PMU, AGC, VOIP etc.. CEA suggested that the redundancy shall be developed in a phased manner and the constraints on the existing communication network shall be explicitly reviewed and taken up accordingly.

Detailed deliberations were held among GRID-INDIA-RLDCs, POWERGRID, CEA, CTU for the same and ISTS communication system was proposed for different services with redundancy:

1. SCADA
2. PMU
3. AGC
4. VOIP
5. Automated Metering Application(AMR)
6. ICCP (Between control centers)

7. PDC to PDC

8. Data sync between MCC & BCC

GRID-INDIA has submitted the data regarding present status of redundancy of these services which is enclosed as Annexure-I. POWERGRID has also submitted the data of utilization of optical fiber network for some links of Eastern region which is enclosed as Annexure-II. CTU again requested POWERGRID to provide requisite data for the implementation of said redundancy scheme.

It was also felt to analyze the enhancement required for the above mentioned 8 services on 2+2 redundancy as discussed below:

1. **SCADA** :- Currently SCADA is reporting through 1+1/2+1/2+2/1+0 (radial) channel in different regions. For 2+2 redundancy of SCADA data, it requires extra ethernet ports at RTU, SAS Gateway & FOTE along with suitable bandwidth in optical fiber network. CTU stated that POWERGRID shall provide data of utilized and spare ethernet ports for existing RTUs, SAS Gateways and FOTE and shall also assess the data for additional requirement of the said redundancy. POWERGRID agreed the same.
2. **PMU** :- POWERGRID stated that presently one port of central sector PMUs is split into two channels at MUX (SDH) level from where onwards one channel reports to NTAMC (PG) and other reports to PDC (RLDC). GRID-India stated that as at present there is no plan of backup PDC, hence PMU data may be sent to PDC at RLDC in 1+1 mode only. Accordingly, one additional channel is required from PMUs to RLDCs. POWERGRID is requested to check availability of additional port on PMU and FOTE along with bandwidth requirement for configuration of additional backup channel to RLDC. POWERGRID agreed the same.
3. **AGC** :- GRID-India-NLDC stated that currently 2 channels are reporting from generators up to HMI of the station and there after through fibre optic network to NLDC Main Control Centre (MCC). GRID-India explained that a separate RTU is provided to integrate the generator data and route it further through the existing FOTE. This is in addition to existing RTU/SAS Gateway reporting to RLDCs.. As per redundancy requirements of control centre, 2 additional channels for AGC from generator station (in addition to the SCADA data) are required for data reporting to Backup Control Centre (BCC). GRID-INDIA also

stated that AGC signal to generator is being planned from RLDC in future. POWERGRID is requested to check availability of ports on RTU (both SCADA and Generation), SAS Gateway of AGC system and FOTE for implementation of same. POWERGRID agreed the same.

4. **VOIP** :- POWERGRID stated that currently VOIP is communicating through single channel only. GRID-India stated that they require redundancy on Port level and additional port shall be required at VOIP phone, exchange & FOTE. As present VOIP exchange has completed its life, it is suggested that requisite features for VOIP phones & exchange shall be included during system upgradation/ replacement. POWERGRID agreed to provide relevant data for the same.
5. **AMR** :- GRID-India stated that new AMR architecture is in planning phase and they will provide required inputs after looking in architecture.
6. **ICCP** :- GRID-India stated that currently ICCP (Between NLDC, RLDC and SLDC) is working on 2 communication channels for main-to-main control center and 2 communication channels for backup to backup control center only. For redundancy, GRID-India requires 4 extra channels, 2 channels for main RLDC to backup SLDC communication and 2 channels for backup RLDC to main SLDC communication. POWERGRID is requested to provide additional requirements (if any) for implementation of same. POWERGRID agreed the same.
7. **PDC to PDC** :- GRID-India stated that at present '1' channel is provided between PDC(SLDCs) to PDC (RLDC), for redundancy in PDC(SLDCs) to PDC(RLDC) communication additional 1 channel is required as discussed in PMU above.
8. **Data Sync between MCC & BCC** :- GRID-India stated that presently 1 channel is working for data sync between Main Control Center and Backup Control Center i.e. main SLDC to backup SLDC, main RLDC to backup RLDC, main NLDC to backup NLDC, further it is required to provide 1 additional channel for redundancy.

As per above discussion POWERGRID is requested to provide the requisite data for implementation of redundancy of services as discussed above within 21 days. POWERGRID agreed for the same. Meeting ended after vote of thanks by SR.GM(CTU).

List of participants of the meeting

- **CEA**

1. Sh. Prateek Srivastava, Assistant Director, PCD
2. Ms. Priyam, Dy. Director, PSPA-I

- **CTUIL**

1. Sh. H.S. Kaushal, CGM, CTUIL
2. Sh. Shiv Kumar Gupta, Sr.DGM, CTUIL
3. Sh. Tej Prakash Verma, Ch.Mgr., CTUIL
4. Sh. Divesh Kamdar, AET, CTUIL

- **POWERGRID**

1. Sh. Satish Kr Sahare, GM, ULDC
2. Smt. Shyama Kumari, DGM, GA&C
3. Sh. Kapil Gupta, DGM, GA&C
4. Sh. Mangesh Shriram Bansod, DGM, IT
5. Sh. Sundeep Kumar Gupta, Ch. Mgr, GA&C
6. Sh. Narendra Kumar Meena, Ch. Mgr. ULDC
7. Sh. Santanu Rudrapal, Ch. Mgr, ULDC
8. Sh. Vishal Badlas, Mgr, GA&C
9. Sh. Hemanth Kumar, Asst. Mgr, ULDC

- **GRID- India**

1. Sh. Harish Kumar Rathour, GM, NLDC
2. Sh. Aukur Gulati, Ch. Mgr, NRLDC
3. Sh. Sakal Deep, Engineer, NERLDC
4. Sh. Akhil Singhal, NERLDC
5. Sh. P. Dounge, NERLDC
6. Sh. Amba Prasad Tiwari, NERLDC
7. Sh. Mohneesh Rastogi, NLDC
8. Sh. Ganesh, SRLDC
9. Sh. Rakesh, SRLDC
10. Sh. Ashutosh Pagare
11. Sh. Koti Naveen, WRLDC

Annexure-V

List of Substaions where SAS/RTU upgradation is required

Sr. No.	Region	Name of Substation	Data reporting RLDC through RTU/SAS GW
1	NR-I	Ajmer 765/400kV	SAS GW
2	NR-I	Bahadurgarh 400/220kV	RTU
3	NR-I	Baghpat 400/220kV GIS	SAS GW
4	NR-I	Bassi 400/220kV	RTU
5	NR-I	Bhadla 765/400/220kV	RTU
6	NR-I	Bhadla-II 765/400/220kV	SAS GW
7	NR-I	Bhinmal 400/220kV	SAS GW
8	NR-I	Bhiwadi 400/220kV	RTU
9	NR-I	Bhiwadi HVDC	SAS GW
10	NR-I	Bhiwani 765/400/220kV	SAS GW
11	NR-I	Bikaner 765/400/220kV	SAS GW
12	NR-I	Dehradun 400/220kV	SAS GW
13	NR-I	Fatehgarh-II 765/400/220kV	SAS GW
14	NR-I	Jaipur(S) 400/220kV	SAS GW
15	NR-I	Jhatikara 765/400kV	SAS GW
16	NR-I	Jind 400/220kV	SAS GW
17	NR-I	Kankroli 400/220kV	SAS GW
18	NR-I	Kotputli 400/220kV	RTU
19	NR-I	Koteshwar 765/400kV GIS	SAS GW
20	NR-I	Kurukshetra 400/220kV GIS	SAS GW
21	NR-I	Kurukshetra HVDC	SAS GW
22	NR-I	Manesar 400/220kV GIS	SAS GW
23	NR-I	Meerut 765/400/220kV	SAS GW
24	NR-I	Neemrana 400/220kV	SAS GW
25	NR-I	Sikar 400/220kV	SAS GW
26	NR-I	Sonipat 400/220kV	SAS GW
27	NR-I	Khetri 765/400kV	SAS GW
28	NR-I	Bikaner-II 400/220kV	SAS GW
29	NR2	Chamba	ABB SAS
30	NR2	New Wanpoh	ABB SAS
31	NR2	Panchkulla	ABB SAS
32	NR2	Fatehabad	ABB SAS
33	NR2	Nalagarh	GE SAS
34	NR2	LEH	GE SAS
35	NR2	Kargil	GE SAS
36	NR2	Drass	GE SAS
37	NR2	Khalsti	GE SAS
38	NR2	Samba	GE SAS
39	NR2	Amritsar	GE SAS
40	NR2	Patiala	GE SAS
41	NR2	Ludhiana	GE SAS
42	NR2	Moga 765	GE SAS
43	NR2	Malerkotla	Siemens
44	NR2	Kalaamb	Siemens
45	NR2	Banala	Siemens SAS
46	NR2	Hamirpur	Siemens SAS

List of Substaions where SAS/RTU upgradation is required

Sr. No.	Region	Name of Substation	Data reporting RLDC through RTU/SAS GW
47	NR2	Jalandhar	Synergee RTU
48	NR-III	BALLIA HVAC	SAS GW
49	NR-III	BALLIA HVDC	SAS GW
50	NR-III	BAREILLY 765KV	SAS GW
51	NR-III	FATEHPUR	SAS GW
52	NR-III	FEROZABAD	SAS GW
53	NR-III	KANPUR GIS	SAS GW
54	NR-III	LUCKNOW 400KV	RTU
55	NR-III	LUCKNOW 765KV	SAS GW
56	NR-III	ORAI	SAS GW
57	NR-III	RAEBARELI	RTU
58	NR-III	SHAHJAHANPUR	SAS GW
59	NR-III	SITARGANJ	SAS GW
60	NR-III	SOHAWAL	SAS GW
61	NR-III	VARANASI	SAS GW
62	NR-III	VINDHYACHAL	SAS GW
63	NR-III	JAULJIBI	SAS GW
64	NR-III	RAMPUR	SAS GW

State utility wise link details where fibre sharing is required are given below:

UPPTCL:

A. Links/Paths where fibre Sharing is required for NAPP (NPCIL):

1. Simbhavali (UP) - Shatabdi Nagar (UP)
2. Shatabdi Nagar (UP) - Modipuram (UP)-having ISTS FOTE

B. Links/Paths where fibre Sharing is required for Saharanpur (PG):

1. Saharanpur (PG)- Deoband (UP)
2. Deoband (UP)- Saharanpur (UP)
3. Saharanpur (UP) -Nanauta (UP)
4. Nanauta (UP)-Shamli (UP)
5. Shamli (UP) -Muradnagar (UP)-having ISTS FOTE

PTCUL:

A. Links/Paths where fibre Sharing is required for Pithoragarh (PG):

1. Pithoragarh (PG) – Pithoragarh (PTCUL)
2. Pithoragarh (PTCUL) – Almora (PTCUL)
3. Almora (PTCUL) -Bhawoli (PTCUL)
4. Bhawoli (PTCUL) -Haldwani (PTCUL)
5. Haldwani (220kV) (PTCUL) Kamalwaganj (PTCUL)
6. 220kV Kamalwaganj (PTCUL) - Pantnagar (PTCUL)
7. Pantnagar (400kV) (PTCUL) Kashipur (PTCUL)

B. Links/Paths where fibre Sharing is required for Sitarganj (PG):

1. Sitarganj(PG) - Sitarganj(PTCUL)
2. Sitarganj(PTCUL) - Kiccha(PTCUL)
3. Kiccha(PTCUL) - Rudrapur(PTCUL)
4. Rudrapur (PTCUL) - Pantnagar (PTCUL)
5. Pantnagar (PTCUL) – Kashipur (PTCUL)

JKPTCL:

Links/Paths where fibre Sharing is required for Alusteng(PG), Drass(PG), Kargil(PG), Khalasti(PG), Leh(PG):

1. Alusteng (PG) - Zainakote (JKPTCL)
2. Zainakote (JKPTCL) - Wagoora (PG)



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Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

सं. उक्षेविस/ प्रचालन /108/04/2019/ 9691-9725
No. NRPC/ OPR/108/04/2019/

दिनांक: 03 सितम्बर, 2019
Dated : 03rd September, 2019

सेवा में / To,

Members of TeST Sub-Committee (As per List)
टेस्ट उप समिति के सभी सदस्य (संलग्न सूचीनुसार)

विषय: टेस्ट उप-समिति की 15 वीं बैठक का कार्यवृत्त।

Subject: 15th meeting of TeST Sub-Committee – Minutes.

महोदय ,
Sir,

उत्तर क्षेत्रीय विद्युत समिति की टेस्ट उप-समिति की 15 वीं बैठक दिनांक 07 अगस्त, 2019 को उत्तर क्षेत्रीय विद्युत समिति, सम्मलेन कक्ष, कटवारिया सराय, नई दिल्ली में आयोजित की गई थी। इस बैठक के कार्यवृत्त की एक प्रति आपकी सूचना व आवश्यक कार्यवाही हेतु इस पत्र के साथ संलग्न है।

15th TeST Sub-Committee meeting of NRPC was held on 07th August, 2019 at NRPC, Conference Hall, Katwaria Sarai, New Delhi. A copy of the minutes of the meeting is enclosed herewith for favour of information and necessary action.

भवदीय
Yours faithfully,

(आर.पी. प्रधान)

(R.P. Pradhan)

अधीक्षण अभियंता
Superintending Engineer

substations of BBMB, so as to rectify the discrepancy in the phasor mismatch being observed in the PMUs installed under URTDSM Scheme.

POWERGRID agreed that they would take up the matter.

6. OTHER AGENDA

6.1 Establishment of State-of-the-Art Unified Centralized Network Management System U-NMS for ISTS and State Utility Communication Network. (Agenda by POWERGRID)

POWERGRID briefed the committee about the CERC notified Communication Regulation which envisages Centralized Supervision System for ISTS Communication. As per the regulation clause no 7.2 (vii): *“CTU shall be the Nodal Agency for supervision of communication system in respect of inter-State communication system and will implement centralized supervision for quick fault detection and restoration.”*

POWERGRID informed that in line with regulation, provisions of Centralized NMS and Centralized Monitoring by integrating its NMS with other users NMS, has been kept in the documents of Technical standard & Manual of Communication Planning Criteria being finalized by CEA. In addition to this guideline on availability of Communication system for ISTS has been submitted to CERC by CEA for which centralized NMS/OSS is considered essential.

POWERGRID made a detailed presentation (a copy of the same attached at **Annexure-6.1**) on Unified Network Management System (U-NMS) Project to be implemented for managing ISTS Communication System at Regional and National level. Presentation covered various technical aspects of U-NMS, configuration at Regional and National level, integration of existing NMSs and Network Elements not having visibility in NMSs etc.

POWERGRID further added that that U-NMS configuration proposed at Regional and National levels shall provide graphical representation of topology of nodes and links, auto discovery and rediscovery of Network Elements and sub-systems, Facility of end to end provisioning of bandwidth centrally, Fast fault resolution and reduced restoration times, Proactive maintenance and Customer support and working out channel availability etc. apart from analytics for predictive maintenance etc.

POWERGRID informed that U-NMS Project is conceived to facilitate Centralized Supervision for ISTS Communication in compliance to CERC Regulation for Communication System notified in May'17 as present NMSs do not have visibility of entire network and are not capable to support the requirements envisaged for ISTS Communication in CERC Regulation.

Proposed U-NMS configuration at regional level shall also consider integration of NMSs of State Communication Network to facilitate STUs to monitor and maintain their network with the help of Work Station provided at their location having direct access of Regional Server.

POWERGRID further stated that U-NMS Project implementation Schedule is considered as 24 months and estimated cost for National and Regional U-NMS is Rs. 120 Cr (Rs. 99.93 Cr for each Regional and Rs. 20Cr for National U-NMS, considering 100Cr for National level covering all 5 Regions i.e. NR, ER, NER, WR and SR) excluding AMC cost which is estimated as Rs. 2.6 Cr for 6 years after Warrantee period. However, the actual cost shall be discovered only after implementation. The Tariff for the investment made is to be shared by all constituents as per CERC notification. The scheme shall become part of existing Commercial Agreement signed for ULDC Project.

Members deliberated on U-NMS proposal. The need of implementation of U-NMS at Regional and National level was agreed by all members considering provisions of Communication Regulation.

Member Secretary, NRPC requested utilities for their technical comments. He further stated that utilities can also send their comments, if any, via email at sec-nrpc@nic.in by 31st August, 2019.

NRLDC enquired regarding the space availability for U-NMS installation.

POWERGRID stated that they would install U-NMS in their premises and informed that CTU shall manage the system after installation.

Sub-Committee agreed for in-principal technical approval of the scheme and recommended for further deliberations in the next TCC/NRPC meetings.

6.2 Mapping of analogue data and digital status of SPS operation related information in SCADA (Agenda by NRLDC)

NRLDC requested all concerned to integrate SPS signals in RTU so that same can be visualized in SCADA. Further it was SPS signals originating from DTPC to various sub-stations shall be integrated by POWERGRID. Further signals shall also be wired and integrated at receiving end by respective utility.

NRLDC informed that as per the decision taken in various meeting, all mapping of SPS signal for new SPS should be done by the agency who is responsible for SPS installation.

Further NRLDC requested all concerned utilities to integrate SPS signals on priority basis.

All utilities informed that integration work is in process and will be integrated at the earliest.



सत्यमेव जयते

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उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

सं. उक्षेविस/ वाणिज्यिक/ 209/ आर पी सी (46 वीं)/2019/12509-12556
No. NRPC/ Comml/ 209/ RPC (46th)/2019/

दिनांक : 14 अक्टूबर, 2019
Dated: 14th October, 2019

सेवा में / To,

उ.क्षे.वि.स. के सभी सदस्य
Members of NRPC/TCC

विषय: उत्तर क्षेत्रीय विद्युत समिति की 46 वीं तथा तकनीकी समंवय उप-समिति की 43 वीं बैठक कार्यवृत्त ।

Subject: 46th meeting of Northern Regional Power Committee and 43rd meeting of TCC – Minutes.

महोदय / Sir,

उत्तरी क्षेत्रीय विद्युत समिति की 46 वीं बैठक दिनांक 24 सितम्बर, 2019 को तथा तकनीकी समंवय उप-समिति की 43 वीं बैठक दिनांक 23 सितम्बर, 2019 को कोवलम, थिरुवानाथापुरम में आयोजित की गयी थी । इन बैठकों के कार्यवृत्त की प्रति आपकी सूचना व आवश्यक कार्यवाही हेतु इस पत्र के साथ संलग्न है।

The 46th meeting of Northern Regional Power Committee was held on 24th September, 2019 and 43rd meeting of TCC was held on 23rd September, 2019 at Kovalam, Thiruvananthapuram. A copy of the minutes of the meetings is enclosed herewith for your information and necessary action.

भवदीय/Yours faithfully,

(नरेश भण्डारी)
(Naresh Bhandari)

सदस्य सचिव

Member Secretary

- B.15.5 Punjab conveyed that after going through the minutes of the last TeST sub-committee meeting, it appears that the proposed scheme has been recommended by TeST sub-committee without much deliberation. Also, this project could be considered for PSDF funding as Punjab had also got PSDF funding for similar type of state projects. Regarding less deliberation in TeST, MS, NRPC stated that state representation in meetings other than TCC/NRPC has reduced to a level that in some states AE or AEE participate against Chief Engineer, nominated member. Regarding PSDF support, POWERGRID stated that PSDF support of 50% is for the state sector, but for central sector no such provision is available in this scheme.
- B.15.6 After detailed deliberations, it was decided that this agenda would be again taken up in the next TeST meeting. PSTCL and RRVPNL informed that they are ready to clear the scheme in 15 days if POWERGRID deputed their engineer and they are convinced that while making scheme due diligence has been given to use state network. States also agreed to depute officer not below SE level in the meetings other than TCC/NRPC.

B.16 Establishment of State-of-the-Art Unified Centralized Network Management System U-NMS for ISTS and State Utility Communication Network

TCC Deliberations

- B.16.1 POWERGRID informed that provisions of Centralized NMS and Centralized Monitoring by integrating its NMS with other users NMS has been kept in the draft Technical standard and Communication Planning Criteria Manual of CEA. In addition to this, guideline on availability of Communication system for ISTS has been submitted to CERC by CEA for which centralized NMS/OSS is considered essential. MS, NRPC stated that the scheme has been recommended by TeST sub-committee in its 15th meeting and same may be deliberated in NRPC for approval.

NRPC Deliberations

- B.16.2 POWERGRID stated that scheme has been discussed at length in last meeting of TeST sub-committee wherein POWERGRID had made a detailed presentation before the members. The estimated cost of Rs 600 Cr is for all regions.
- B.16.3 Haryana stated that U-NMS is a necessary system because different make of communication systems are to be integrated at common platform. POWERGRID stated that in line with CERC's regulations mentioning communication system availability, the proposed U-NMS is also capable to calculate the availability of the communication system besides providing holistic view of network.
- B.16.4 The Committee after detailed deliberation, approved the scheme.

I/30353/2023



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Ministry of Power

केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन प्रभाग- II

Power System Planning & Appraisal Division-II

सेवा में /To

As per list of Addresses

विषय: ट्रांसमिशन पर राष्ट्रीय समिति (एनसीटी) की पन्द्रहवीं बैठक का कार्यवृत्त - के सम्बन्ध में।

Subject: Minutes of the 15th Meeting of National Committee on Transmission (NCT) – regarding.

महोदया (Madam) / महोदय (Sir),

The 15th meeting of the "National Committee on Transmission" (NCT) was held on 25th August, 2023. The minutes of the meeting are enclosed herewith.

भवदीय/Yours faithfully,

(राकेश गोयल / Rakesh Goyal)

मुख्य अभियन्ता एवं सदस्य सचिव, एन.सी.टी.

/ Chief Engineer & Member Secretary (NCT)

प्रतिलिपि / Copy to:

Joint Secretary (Trans), Ministry of Power, New Delhi

4.5 North Eastern Region Expansion Scheme-XXI Part-B (NERES-XXI Part-B)

- 4.5.1 The existing 132 kV Badarpur (POWERGRID) switching station was commissioned in 1999 and shall be completing 25 years in service by 2024. POWERGRID, the owner of the substation has informed that they are facing issues in O&M of the switching station and to improve the reliability it would be prudent to upgrade the switching station from single main and transfer bus scheme to double main transfer bus scheme by converting from AIS to GIS.
- 4.5.2 The scheme was also discussed in the 23rd TCC & NERPC meetings held on 18th-19th November 2022 wherein the subject upgradation was agreed to be carried out in Green GIS.
- 4.5.3 Chairperson, CEA, opined that life of sub-stations is generally about 35 years and hence, the reasons for replacement/upgradation of switching station after 25 years needs to be ascertained.
- 4.5.4 After detailed deliberations, it was decided to review the scheme subsequently.

4.6 **Implementation of Unified Network Management System (UNMS) in the Western Region**

- 4.6.1 Representative of CTUIL informed that Central Electricity Regulatory Commission (Communication System for inter-State transmission of Electricity) Regulations 2017, mentions that, CTU shall in due consideration of the planning criteria and guidelines formulated by CEA be responsible for planning and coordination for development of reliable National communication backbone for Inter-State Transmission System (ISTS). CEA Technical Standards 2020 calls for centralized monitoring by integrating its network management system with network management system of other users and standalone network elements on regional and national basis. Further, CTUIL shall implement centralized supervision for quick fault detection and restoration.

Accordingly, communication scheme i.e. Establishment of State-of Art Unified Network Management System (U-NMS) for ISTS and State Utility Communication System for all the Regions have been envisaged for five Regional systems and one National system integrating all the regional ones; in main & backup configuration. This will facilitate centralized supervision of ISTS as well as Intra-state communication system at State level, Regional level and Inter-Regional Communication system at national level.

CTUIL updated status for nationwide UNMS Scheme implementation being undertaken by POWERGRID; UNMS for Northern, Eastern and Northeastern Regions are scheduled for commissioning in year 2023/ 2024. And Southern Region scheme approved in 13th NCT meeting in May'23 is under bidding stage.

- 4.6.2 WRPC has approved implementation of the WR-UNMS project in RTM mode in 47th WRPC meeting held on 14th & 15th June 2023.
- 4.6.3 Representative of PCD Division, CEA, stated that a workstation console with redundant connectivity would be required under UNMS-WR scheme at WRPC. It was also suggested to include feature for Long, Medium & Short Term Planning for preparing planning projections while including user configurable inputs such as topology, congestion status, utility/ area wise, type of network, product life cycle, sector growth etc. and provision for import of data in .xls or other similar forms for consuming in preparing the planning projection for 2 years, 5 years, 10 years.
- 4.6.4 It was also discussed that UNMS workstation console with its associated hardware & software along with redundant connectivity is required at all RPC locations for the previously approved regional UNMS Scheme for NER, NR, ER and SR.
- 4.6.5 Chairman, NCT, stated that central planning of the communication network for ISTS and State system shall take the leverage from these Regional & National UNMS having the details of both ISTS and State sector communication network. He also emphasized that National UNMS system should be planned at the earliest to have a holistic view of the network comprising of regional, intra-regional and intra state network and this scheme shall have additional scope of Planning Software tool having features as enlisted by representative of PCD Division.
- He also emphasized that SOP for Centralized supervision & Maintenance of ISTS Communication system should be finalized at the earliest while specifying the roles & responsibilities of concerned entities/ agencies for smooth implementation of the hierarchical UNMS Scheme situated in state, regional & national level.
- 4.6.6 After detailed deliberations, the followings were approved:
- WR UNMS scheme as per agenda along with additional scope listed below to be implemented under RTM mode by POWERGRID.
 - a. Inclusion of Workstation Console and associated HW & SW along with redundant communication link & AMC at WRPC location.
 - b. Additional feature of Planning Tool
 - The National UNMS project proposal to be taken up at the earliest, as all regional systems have been approved for implementation. The national UNMS scheme shall have additional scope of Planning Software tool having features for Long, Medium & Short Term Planning for preparing planning projections while including user configurable inputs such as topology, congestion status, utility/ area wise, type of network, product life cycle, sector growth etc and provision for import of data in .xls or other similar forms for consuming in preparing the planning projection for 2 years, 5 years, 10 years., along with Workstation Console and associated hardware/software with redundant connectivity at PCD Division, CEA.

- Additional scope for Supply, Installation & AMC for UNMS workstation console with its associated hardware & software with redundant connectivity at all four RPC locations for the previously approved regional UNMS Scheme for NER, NR, ER and SR.

4.6.7 Summary of the WR UNMS scheme is as given below:

Sl.No.	Name of the scheme and implementation timeframe	Estimated Cost (Rs. Crores)	Remarks
1.	Establishment of State-of Art Unified Network Management System (U-NMS) for ISTS and State Utility Communication System for Western Region Tentative Implementation timeframe: 24 months from date of allocation	Rs. 84* Crs. (approx.) and 19.07 Crs. AMC charges for 7 years.	Approved to be implemented under RTM mode by POWERGRID

4.6.8 Detailed scope of the scheme is as given below:

Sl. No.	Scope of the scheme	Estimated Cost (Rs. Crs)
1.	<ul style="list-style-type: none"> • Main & Back-up UNMS software and hardware along with required Application software including Video Projection System (VPS), firewall and IDPS. • Remote Workstation for SLDCs. • Video Projection System (VPS), Printer, furniture etc. at main & back-up U-NMS location. • Integration of existing NMS/NEs of ISTS and State Utility in a region in the proposed UNMS. • Integration of upcoming U-NMS for National & other regions and upcoming NMS/NEs of ISTS and State Utility in a region during implementation and AMC period of the project. • Operational support, training & maintenance for proposed UNMS software and hardware. • Auxiliary Power System for U-NMS system. • Workstation Console along and other associated software and hardware such as firewall, router, switch etc. at WRPC, CTUIL HQ and WRLDC location • Bandwidth connectivity & Its recurring charges for WRPC & CTUIL HQ Office. 	Rs. 84* Crs. (approx.) and 19.07 Crs. AMC charges for 7 years.

Reference: CC/HRD/NRPC/2023-24/Overseas

Date: 26 Feb 24

To,

**The Executive Engineer (Protection),
Northern Regional Power Committee Secretariat,
New Delhi.**

Kind Attention: Sh Reeturaj Pandey

Sub: Overseas Program on "**International Best Practices in Energy Transition (With study tour to Norway & Finland)**" for NRPC constituents.

Dear Sir,

A. In reference to your request for the subject mentioned program, please find below our offer. The details may be seen below.

1. **Venue:** PAL Manesar (Domestic portion), Norway & Finland (Overseas portion)
2. **Duration:** Domestic Portion:
 - i. One day domestic at PAL, Manesar
 - ii. Overseas portion including travel: Seven days.
3. **Dates:** around May to Sep 24 (All three batches) will be finalized after mutual discussion.

B. The **scope of services** will be as mentioned below:

1. Tuition fees
2. Air fare economy class (Delhi to Oslo, Helsinki to Delhi),
3. Medical cum travel insurance
4. Visa
5. Airport transfers
6. Boarding & Lodging
7. Disbursal of per-diem,
8. Training kit including trolley bags & Blazer,
9. Tickets (if any) to official engagements (entry tickets to sight-seeing, conferences etc.
10. Membership to ASCI alumni network.

C. **Fee** (including GST):

1. Fee for one batch upto 20 participants: INR 3,35,63,000.00
2. Per Participant fee for additional participants above 20: INR 16,78,150.00
3. Fee for three batches with total 60 participants: INR 10,06,89,000

D. **Payment Terms:**

1. 70% payment before the start of each batch based on proforma invoice submitted by POWERGRID to NRPC.
2. 30% after the successful conduct of each batch and submission of GST invoice by POWERGRID to NRPC.

E. **Validity:** This offer will be valid for till 31.12.2024

Kindly acknowledge the offer and convey your acceptance.

Yours faithfully,
For and on behalf of
Power Grid Corporation of India Limited



Shafiqur Rahman
Chief Manager (HRD)
9599192365, shafiqur@powergrid.in

**Capacity Building Programme on
“International Best Practices in Energy Transition”
for Constituents of Northern Regional Power Committee
(NRPC)**

*Proposal Submitted by Member Secretary on
behalf of Northern Regional Power Committee*

March 2024

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1. ABOUT NORTHERN REGIONAL POWER COMMITTEE

- With an objective to facilitate integrated operation of power system in Northern Region, Government of India, under the provision of Section 2, Subsection 55 of the Electricity Act 2003 vide resolution F.No. 23/21/2021-R&R dated 3rd December 2021 (repealed resolution dated. 25.05.2005) published in the Gazette of India has established the Northern Regional Power Committee comprising of states of Delhi, Haryana, Himachal Pradesh, Punjab, Rajasthan, Uttaranchal and Uttar Pradesh and the Union Territories of Chandigarh, Jammu & Kashmir and Ladakh.
- Manpower is posted by Central Electricity Authority (CEA).
- RPCs have been envisioned as self-financed. The expenditure of RPCs is met from contribution collected from constituent members of region.
- Member Secretary is HoD of NRPC Secretariat and is convenor of RPC.

2. MEMBERS OF NRPC:

- a.) Member (Grid Operation), Central Electricity Authority (CEA).

- b.) One representative each of Central Generating Companies, Central Transmission Utility (CTU), Central Government owned Transmission Company, National Load Despatch Centre (NLDC) and the Northern Regional Load Despatch Centre (NRLDC).
- c.) From each of the States in the region, the State Generating Company, State Transmission Utility (STU), State Load Despatch Centre (SLDC), one of the State owned distribution companies as nominated by the State Government and one distribution company by alphabetical rotation out of the private distribution companies functioning in the region.
- d.) A representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.
- e.) A representative each of every generating company (other than central generating companies or State Government owned generating companies) having more than 1000 MW installed capacity in the region.
- f.) A representative of the generating companies having power plants in the region (not covered in (b) to (e) above) by alphabetical rotation.
- g.) A representative of one private transmission licensee, nominated by Central Government, operating the Inter State Transmission System, by alphabetical rotation out of such Transmission Licensee operating in the region.
- h.) One member representing the electricity traders in the region by alphabetical rotation, which have trading volume of more than 500 million units during the previous financial year.
- i.) A representative each of every Nodal Agency appointed by the Government of India for coordinating cross-border power transactions with the countries having electrical inter-connection with the region
- j.) Member Secretary, NRPC – Convenor

3. SUB-COMMITTEES OF NRPC

- Technical Co-Ordination Sub-Committee (TCC)
- Operation Co-Ordination Sub-Committee (OCC)
- Protection Sub-Committee (PSC)

- Commercial Sub Committee (CCM)
- Telemetry, SCADA and Telemetry Sub-Committee (TeST)
- Other Sub Committees as decided as per requirement

4. FUNCTION OF NRPC

Function of NRPC is to facilitate the stability and smooth operation of the integrated grid and economy & efficiency in the operation of power system in the region. NRPC is carrying out following functions: -

1. To undertake Regional Level operation analysis for improving grid performance.
2. To facilitate inter-state/inter-regional transfer of power.
3. To facilitate all functions of planning relating to inter-state/ intra-state transmission system with CTU/STU.
4. To provide views on the inter-state transmission system planned by CTU within 45 days of receipt of the proposal by NRPC. The views of NRPC will be considered by National Committee on Transmission for sending their recommendation to Ministry of Power for approval of new inter-state transmission system.
5. To coordinate planning & maintenance of generating machines of various generating companies of the region including those of inter-state generating companies supplying electricity to the Region on an annual basis and also to undertake review of maintenance programme on a monthly basis.
6. To undertake planning of outage of transmission system on a monthly basis.
7. To undertake operational planning studies including protection studies for stable operation of the grid.
8. To undertake planning for maintaining proper voltages through review of reactive compensation requirement through system study committee and monitoring of installed capacitors.
9. To evolve consensus on all issues relating to economy and efficiency in the operation of power system in the region.

10. Issuance of various Energy accounts mandated by various CERC regulations

- i. Monthly Energy Accounts:
 - a. Regional Energy Account (REA) including Ramping Capability of CGSs, Thermal Generators, Heat Rate Compensation for part load operation and Secondary Oil Compensation.
 - b. Regional Transmission Account (RTA)
 - c. Regional Transmission Deviation Account (RTDA)
 - d. SCED Account

- ii. Weekly Statement of Deviation Settlement Charges, Reactive Energy Charges and Ancillary Services Charges.

- iii. Quarterly statement of Interest Charges on Late Payment of above weekly accounts.

11. Allocation of Power from Central Generating Station of NR.

SUMMARY OF PROPOSAL

For Official Use - To be filled by the Nodal Agency
Project Proposal Number : _____ Date of Receipt : _____

To be filled by the Requesting Organization / Project Entity	
1. Name of the requesting Organization / Utility :	Northern Regional Power Committee (NRPC)
2. Short Summary of Project / Scheme / Activity	
a. Name and location of the Project / Scheme / Activity :	Capacity Building programme on “International Best Practices in Energy Transition” for Constituents of Northern Regional Power Committee (NRPC)
b. Objective of the Project / Scheme / Activity :	<ol style="list-style-type: none"> 1. To understand the factors that contributed to the success of the power market liberalization in the Nordic region. 2. To learn from international best practices in Hydro Power Development, Power Markets, energy transition – Hydrogen, decarbonization and offshore wind. 3. Overview of Power Markets/Nord Pool at a Glance/ Intraday Trading demonstration. 4. To understand Norwegian Hydrogen Economy and Low Carbon Society. 5. Capacity building programme to handle trading of short term surplus power on the Power exchange. 6. Interaction with EV Association, Norway on The Norwegian EV Experience. 7. Price discovery in Nord pool. 8. Determination of transmission tariff and sharing of transmission charges and losses. 9. Financial settlement of power trades, imbalances.

	<p>10. Organization of forwards, futures and options market in power, their operation procedures, hedging etc.</p> <p>11. Retail supply market.</p> <p>12. Market clearing and settlement.</p> <p>13. Market surveillance.</p> <p>14. Imbalance settlement procedure.</p> <p>15. Roles and responsibilities of various stakeholders.</p> <p>16. Reporting and information sharing.</p> <p>17. Optimum power reserve estimation.</p> <p>18. Real time system operation and management.</p> <p>19. Efficient maintenance practices of transmission grids.</p> <p>20. Better Understanding of the regulatory and policy framework of the power market in European countries.</p> <p>21. EV integration in the grid along with hydrogen powered vehicle.</p> <p>22. Learning the best industry practices in Nordic power market.</p> <p>23. Enhancement of productivity and performance.</p>
<p>c. Authorized Person For this Project / Scheme / Activity</p>	<p>Name : Vijay Kumar Singh, Member Secretary, NRPC</p> <p>E-mail ID : ms-nrpc@nic.in</p> <p>Land line No : 011-26511211</p> <p>Mobile No. : 9810177609</p> <p>Fax No : 011-26868528</p>
<p>d. Nature of the Project / Scheme / Activity: Inter – State / Intra – State (Please Specify)</p>	<p>Training and Capacity Building of constituents of Northern Region</p>
<p>e. Identified Beneficiaries</p>	<p>Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Transmission Licensees in Northern Region), Grid Controller of India Limited and Northern Regional Power</p>

	Committee (NRPC) Secretariat. Participation from Central Electricity Authority (CEA), Ministry of Power, GoI has also been envisaged.
f. Merits of the scheme	The programme will enable to understand: 1. Business Environment – Power Sector and Strategy framework 2. Energy Transition 3. Power Market Development 4. Energy transformation and decarbonisation Further detailed in Annexure-A .
g. Limitations, if any	No limitations
h. Time frame for Implementation	FY 2024-25 3 batches (each of 20 officials)
i. Estimated Cost of Project / Scheme / Activity	Rs. 10,06,89,000/--
j. Category under which the project is classified (Please refer Para 5.1 of the Guidelines/Procedure)	Para 5.1(e)

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

DETAILED PROPOSAL (DP)

Format A2
Page 1 of 5

1. Details of the Requesting Organization / Project Entity

1.1 Details of Organization / Entity

Name of Organization / Entity	Northern Regional Power Committee
Acronym or Abbreviation (if applicable)	NRPC

1.2 Details of Head of the Organization

Name (Mr / Ms / Mrs)	Mr. Vijay Kumar Singh
Designation	Member Secretary
E-mail Address	ms-nrpc@nic.in
Landline No.	011-26511211
Fax No.	011-26868528
Address	18-A, Shaheed Jeet Singh Marg, Katwaria Sarai,
City	New Delhi
Postal Code	110016

1.3 Details of Project Incharge / Project Manager (Authorized Person) for this project/scheme/activity (Not below the rank of Dy. General Manager / Superintending Engineer)

Name (Mr / Ms / Mrs)	Mr. Vijay Kumar Singh
Designation	Member Secretary
E-mail Address	ms-nrpc@nic.in
Landline No.	011-26511211
Mobile No.	9810177609
Fax No.	011-26868528
Address	18-A, Shaheed Jeet Singh Marg, Katwaria Sarai,
City	New Delhi
Postal Code	110016

2. Justification of the Proposal

2.1 Analysis of the Objective

- The Electricity Act 2003 opened the power sector by laying down provisions for promoting competition in the power market. By identifying electricity trade

as a distinct activity, Electricity Act 2003, along with pursuant regulations from the CERC, paved the way for a paradigm shift in the power sector.

- The Act envisages development of a competitive power market for promoting efficiency, economy and for mobilisation of new investments in the power sector. These transformations in power sector were supported by creation of institutions to enhance efficiency in markets via bilateral trading and later in 2008 through trading on power exchanges.
- In addition, the fundamentals of power trading – such as licensing electricity traders and ensuring open, non-discriminatory access to transmission services – have been put into place to allow for expansion of opportunities in all markets. As a result, there has been a paradigm shift in generation, transmission and distribution activities, which have facilitated power trading.
- Nord Pool Spot runs the largest market for electrical energy in Europe, measured in volume traded (TWh) and in market share.
- It operates in Norway, Denmark, Sweden, Finland, Estonia, Latvia, Lithuania, Germany and the UK. More than 80% of the total consumption of electrical energy in the Nordic market is traded through Nord Pool Spot.
- The capacity building programme will help personnel involved in Grid operation and transmission planning & implementation in understanding the policy and regulatory framework of Nordic power trading market.
- It will be immensely helpful as the participants will get to know about the successful working of Europe's leading power exchange, the integrated power markets and the financial derivative market.
- The program will include exposure to all the key issues related to a competitive power market, price determination, congestion management, imbalance management, reference price, risk management and market surveillance.
- European countries have high share of renewable energy in their power system. The effect of this RE power in power trading can be studied thoroughly by this capacity building program. As India is planning to add 500 GW of renewable energy by 2030 under its commitment towards global climate change, this program will surely help in this direction.

Also refer **Annexure-A**

2.2 Identified Beneficiaries of the Project

Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Licensees in Northern Region, Grid Controller of India Limited and Northern Regional Power Committee (NRPC) Secretariat will benefit from the scheme. Participation from CEA/MoP has also been envisaged.

2.3 Identified Source of Funding

The programme is to be funded fully from PSDF. As mentioned in the Para 6.2(III) of the guidelines/procedure for disbursement of PSDF approved by Government of India that up to 100 % grant to be given in case the project (Capacity Building) mentioned under Para 5.1(f) of the same.

2.4 Details of Activities for Project / Scheme / Activity

- The programme will be implemented in three batches.
- Eight days (6 days training and 2 days travel) Training Program is proposed to be conducted for each batch.
- The programme will be held between 01.05.2024 and 30.10.2024.
- The training programmes will be held in Norway and Finland.
- 3 batches each of 20 participants will participate for each 8-day program from various utilities of Northern Region including CTU, SLDCs, STUs, Generators, ISTS Licensees, DISCOM, Grid-India, NRPC Sectt, CEA and Ministry of Power.
- Training Modules to cover various aspects of Power market operations, impact of renewables through imbalance handling in energy trading as well as cross border trading with neighbouring countries. The programme is

designed to meet the needs of top officials of electricity utilities of India to understand:

- a. Business Environment – Power Sector and Strategy framework
 - b. Energy Transition
 - c. Power Market Development
 - d. Energy transformation and decarbonisation
- Training Modules for such programs have been designed after consultation with POWERGRID.
 - Field visits will be arranged during the programs to impart practical training to the participants.

2.5 Executing Agency

POWERGRID will be the executing agency through Administrative Staff College of India (ASCI).

2.6 Time line for Implementation of Project / Scheme / Activity

The programme is to be completed in FY 2024-25.

Timeline of the Project / Scheme / Activity	
Duration of Project (in Months)	Between 01.05.2024 and 30.10.2024 (06 months). 3 batches each of 20 participants.
Likely Start Date	01.05.2024
Likely Completion Date	30.10.2024

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Sl. No	Description	Mar'24	June'24	July'24	Aug'24	Oct'24
1	Programme Approval					
2	1 st Program (proposed)					
3	2 nd Program (proposed)					
4	3 rd Program (proposed)					
6	Programme Report					

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Summary of Detailed Project Report (DPR)

Objective: Capacity building of the personnel involved in Grid Operation, transmission planning & implementation and overall policy & decision making towards creation of efficient power markets and participation in power trading.

Executing Agency: The programme is to be executed by POWERGRID and all arrangements like designing modules in consultation with ASCI, and power system experts of NR utilities and coordination with Nordic countries, signing of contract with Norwegian agencies, selecting travel partner, visa etc. shall be undertaken by Powergrid Corporation of India Limited.

No of Programs and participants: Total 3 nos. of programs are proposed to be conducted over one year. Each batch having 20 nos. of participants from NRPC constituents. Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Licensees in Northern Region, Grid Controller of India Limited and Northern Regional Power Committee (NRPC) Secretariat will benefit from the scheme. Participation from CEA/MoP has also been envisaged.

Venue of Programme: The capacity building programme will be held at Norway and Finland starting from POWERGRID, Manesar.

Duration of Programme:

Participants per batch	Duration of each Program (in days) each year	Total years for which program will run
20	8 days (6 + 2 days for travel)	1 year

Course Content/ Training Modules: The tentative topics to be covered are placed below.

1. To understand the factors that contributed to the success of the power market liberalization in the Nordic region.
2. Capacity building programme to handle trading of short term surplus power on the Power exchange
3. Price discovery in Nord pool.
4. Determination of transmission tariff and sharing of transmission charges and losses.
5. Financial settlement of power trades, imbalances.
6. Organization of forwards, futures and options market in power, their operation procedures, hedging etc.
7. Retail supply market
8. Market clearing and settlement
9. Market surveillance
10. Imbalance settlement procedure
11. Roles and responsibilities of various stakeholders
12. Reporting and information sharing
13. Optimum power reserve estimation
14. Real time system operation and management
15. Efficient maintenance practices of transmission grids
16. Better Understanding of the regulatory and policy framework of the power market in European countries.
17. EV integration in the grid along with hydrogen powered vehicle.
18. Learning the best industry practices in Nordic power market.
19. Enhancement of productivity and performance.

Total Cost of Training (refer Format A4):

No of Programs of 8 days duration	Total (In Rs.)
3	10,06,89,000/- (including GST)

- Cost is inclusive of all taxes. However, tax rates are subject to revision by Government.
- Final payment will be made on the basis of actuals

Terms of payment:

- (1) 70% payment before the start of each batch based on proforma invoice submitted by POWERGRID to NRPC.
- (2) 30% after the successful conduct of each batch and submission of GST invoice by POWERGRID to NRPC.

Summary of DPR given - Yes.

Copy of the Proposal attached. – Yes

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Financial Implication of the Scheme

(Guidelines: The financial implications of the proposal may be worked out as accurately as possible and should be detailed in this section. Further, the manner in which the expenditure is proposed to be borne may also be clearly indicated. Please provide the project cost estimate for its scheduled duration along with a break-up of year-wise, component-wise expenses segregated into non-recurring and recurring expenses.)

1. Summary

S.No.	Item	Amount in Rs.
1.	Total Cost Estimate	10,06,89,000/-
2.	Funding Proposed from PSDF	10,06,89,000/-
3.	Contribution from Internal Sources	Nil
4.	External Borrowings	Nil

2. Details (Proposal POWERGRID is at Annexure-C)

2.1 Cost Estimate (including GST)

1. Estimated cost for three batches (consisting 20 persons each): Rs. 10,06,89,000/-

2. Estimated cost per batch (consisting 20 persons each): Rs. 3,35,63,000/-

3. Funding

3.1 Funding Proposed from PSDF as grant

The programme is to be funded completely from PSDF. As mentioned in the Para 6.3(III) of the guidelines/procedure for disbursement of PSDF approved by Government of India

that up to 100 % grant to be given in case the project (Capacity Building) mentioned under Para 5.1(e) of the same.

3.2 Contribution from Internal Sources: Nil

3.3 External Borrowings: Nil

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

Brief Details of the Project Appraisal by CTU / STU / RPC

The applicant utility shall submit project appraisal by CTU / STU / RPC in the given format and a copy of the Appraisal Report should be attached at Annexure.

Item	Details to be filled by Applicant Utility	
Appraisal By:	CTU <input type="checkbox"/> ST <input type="checkbox"/> <input checked="" type="checkbox"/> RPC	
Date of Submission to CTU / STU / RPC for approval	-----	
Name of the Scheme	Capacity Building programme on “International Best Practices in Energy Transition” for Constituents of Northern Regional Power Committee (NRPC).	
Details of the Appraisal Report by CTU/STU / RPC (Attached at Annexure)	Attached at Annexure-B	
Summary of observations from CTU/ STU/RPC Appraisal Report	Summary of Proposal Appraised	NRPC appreciated the initiative taken by NRPC Secretariat for benefit of NR constituents and approved the scheme for funding through PSDF.
	Technical Observations	
	Financial Observations	
	Compliance of Grid Standards / Codes by the Applicant	
	Limitations / Shortcomings pointed out by CTU/STU/RPC if any	
	Recommendations of CTU/STU/RPC	

Date: _____

Signature: _____

Name: _____

(Authorized Representative)

I, Shri VIJAY KUMAR SINGH son of _____
----- and presently working as Member Secretary, Northern
Regional Power Committee hereby undertake to comply with the following terms
and conditions with regard to funding of the “Capacity Building programme on
“International Best Practices in Energy Transition” for Constituents of Northern
Regional Power Committee (NRPC)” with disbursement from PSDF:

- **No tariff shall be claimed for the portion of the scheme funded from PSDF.**
- **Amount of grant shall be refunded in case of transfer/disposal of the facility being created under this proposal to any other scheme for funding.**
- **Shall specifically mention if for the scheme under the proposal, the grant from any other agency is being taken / proposed to be taken.**
- **The grant shall be refunded back to PSDF in case of non-utilisation of the grant within one year of release of instalment.**

Date: .

Signature: _____

Name: Vijay Kumar Singh
(Authorized Representative)

Supplementary Information

1. In 45th NRPC meeting held on 08.06.2019, NRPC proposed a capacity building programme for studying the power exchange of Nordic countries, role of TSO (Transmission System Operator), Renewable Energy in power trading, EV integration with grid etc. to be carried out for Northern Region Constituents.
2. POWERGRID vide letter dated 09.10.2019 was requested to furnish the complete proposal including estimated cost details for preparing the DPR for PSDF funding.
3. In 44th TCC & 47th NRPC Meetings (held on 10th and 11th December, 2019), POWERGRID presented the detailed report and commercial implication of the program.
4. Due to COVID pandemic, the program could not be completed.
5. Therefore, a revised estimate has been taken from POWERGRID and proposal of Capacity Building programme on “International Best Practices in Energy Transition” for Constituents of Northern Regional Power Committee (NRPC) has been approved in
6. The justification for selection of Nord Pool is given in DPR. Further, a detailed analysis is given in **Annexure-A**.
7. POWERGRID has been selected as implementing agency by NRPC Forum.
8. Total 3 nos. of programs are proposed to be conducted over one year. Each batch having 20 nos. of participants from NRPC constituents. Personnel from the Central Transmission Utility (CTU), State Transmission Utilities (STUs), Distribution Companies (DISCOMs), State Load Despatch Centres (SLDCs), Generators (including ISGS), ISTS Licensees in Northern Region, Grid Controller of India Limited and Northern Regional Power Committee (NRPC) Secretariat will benefit from the scheme. Participation from CEA/MoP has also been envisaged.
9. Criteria for Selection:
 - i. The officers nominated must have at least 3 years of service left.
 - ii. No of Candidates from Each state/utility shall be as per decision of NRPC forum so that 3 batches of 20 members each can be formed.
10. A copy of the minutes approved by Chairperson is enclosed for reference (refer **Annexure-B**).

Justification for NORD Pool

Introduction: Power is a vital element that supports our modern lives at home and at work. As power production and transmission capacity has been extended over the years, transmission of power between countries has become more common. As a result, a dynamic market has evolved where power can be bought or sold across areas and countries more easily.

The power price is determined by the balance between supply and demand. Factors such as the weather or power plants not producing to their full capacity can impact power prices.

While the price of power is determined according to supply and demand, it also becomes clear where there are issues in the grid when the price of power goes up. This makes it easier to identify where production or capacity is lacking, as there is too high demand compared to production supply.

The Indian Context: The Indian power market consists of OTC Bilateral trades and non-mandatory power exchange structure. With increasing participation from the private players, the trading on the exchange is bound to increase in the future. Further, to meet the requirements of customers, power exchanges have to bring out newer products such as derivatives. Also, more and more players are becoming eager to purchase power in short term on the exchanges. The integration of renewables will also give a push towards innovative products for handling of this power. The market, regulatory environment and the operator have to jointly discuss and prepare the ground for a vibrant power market in India. A competitive power market will reduce prices and increase welfare.

Although, India has deregulated generation, the power market does not have sufficient depth as most of the power sales are dictated according to long term contracts. Day by day the commercial settlements and system operation are getting complex as decisions of the operator in a regulated environment affect the financial obligations of the players. The road ahead lies in reducing regulatory rule making and letting the market take over some of the pricing signals.

It is seen from recent experience that beneficiaries of many of the generators who have long term contracts under two-part tariff are reluctant to purchase power under the long

term PPA and try to economize their portfolio through buying and selling power on the OTC markets and also on the exchange. Therefore, constituents feel a need to participate in power markets.

The national tariff policy 2005 stated thus:

5.2 *The real benefits of competition would be available only with the emergence of appropriate market conditions.*

9.0 The Act provides that the Appropriate Commission necessary. Though *there is a need to promote trading in electricity* for making the markets competitive, the Appropriate Commission should monitor the trading transactions continuously and ensure that the electricity traders do not indulge in profiteering in situation

However, the directions of the tariff policy could not have been implemented fully. The CERC report on Short Term Power Market in India: 2015-16 has the following to offer:

1. Of the total electricity procured in India in 2015-16, the short-term power market comprised 10%. The balance 90% of generation was procured mainly by distribution companies through long-term contracts and short-term intra-state transactions.

Therefore, the participation in short term power market is still in nascent stages

2. In terms of volume, the size of the short-term market in India was 115.23BU (Billion Units) in the year 2015-16. As compared to the volume of electricity transacted through short-term market in the year 2014-15 (98.99BU), this was about 16% higher.

There is a desire for increased participation in the short term power markets.

7. During 2015-16, about 93% of the volume of electricity transacted through traders was at a price less than Rs. 6/kWh. About 61% of the volume was transacted at a price less than Rs. 4/kWh.
8. During 2015-16, IEX transacted 99% of the volume of electricity at a price less than Rs. 6/kWh while about 92% of the volume was transacted at a price less than Rs 4/kWh. During the year, PXIL transacted 99% of the volume of electricity at a price less than Rs. 6/kWh while about 76% of the volume was transacted at less than Rs. 4/kWh.

Purchase of power in short term power markets is cost effective.

11. Competition among the trading licensees was shown for the period from 2004-05 to 2015-16. During the period, number of traders who were undertaking trading

increased from 4 to 27 and concentration of market power (HHI based on volume of trade undertaken by the licensees) declined from high concentration (HHI of 0.5512) to non-concentration (HHI of 0.1432).

The Indian Power market is competitive with non-concentration of market power.

Government of India have also proceeded with the SAARC Framework Agreement for Energy Cooperation (Electricity) which will facilitate trading of electricity among member nations of SAARC. This will create challenges as well as opportunities for electricity trade as different regulatory regimes will come into picture. *The development of a cross border market for electricity is also not far.*

Recently, as per Tariff Policy, 2016, Central generating stations unable to get their power scheduled are bringing their power to market for sale.

Although all the ingredients of a successful power market are present participants have to build confidence to come out of their comfort zone of long term PPA and buy and sell power on the market. In turn the market has to give that confidence to the participants.

It is natural that a commodity likes electricity, non-availability of which has huge negative welfare implications would make the buyers shaky in case the market fails to operate optimally. Therefore, a visit to Nord Pool which operates one of the oldest and one of the biggest power markets in Europe would help in building confidence.

International Context: The last decade has seen the deregulation of several power markets around the world, and especially the US and EU electricity supply industries are undergoing a process of fundamental change. A central feature of most liberalised markets is a Power Exchange, PX, with an optional or mandatory spot market, and, as a complement, a market for financial instruments (futures, forwards and options)

The spot market accommodates suppliers and consumers in an auction determining market clearing prices and quantities, while the financial market performs price hedging. In Europe today, there are PXs with spot markets in England and Wales, The Netherlands, Scandinavia (Denmark, Finland, Norway and Sweden), Spain and Switzerland. The Scandinavian deregulation led to the establishment in 1993 of the joint Nordic Electricity Exchange, otherwise known as Nord Pool.

Scandinavia, where countries have traded power for decades, has the world's most developed international market for electric power. Recently the trading system has changed dramatically, moving from the old model of cooperation among the leading vertically integrated utilities in each country, under the Nordel agreement, to competitive market rules. The Nordic countries deregulated their power markets in the early 1990s and brought their individual markets together into a common Nordic market. Estonia, Latvia and Lithuania deregulated their power markets, and joined the Nord Pool market in 2010-2013.

To attract customers, a non-mandatory PX needs a spot market that creates confidence among its actual and potential participants. Effective competition in the spot market is important from several perspectives, directly for cost efficiency, transaction costs and the potentially large distributional effects of market power, indirectly for its impact on related financial markets.

The Nord Pool has over the years established itself as a very efficient and transparent wholesale power market having the confidence of the market participants.

Nord Pool has played an important role in setting up of various other National/International Power Exchanges such as the Leipzig power exchange (LPX) in Germany, developing the power market in South African Power Pool (involving 12 countries), etc. Nord Pool is one of the regional power pool having mature regional electricity market and facilitate more than 80% of the total Nordic electricity consumption through Nord Pool spot market.

In addition to the spot market, Nord Pool offers futures contracts, which are traded as weekly contracts four to seven weeks ahead, as blocks of four weeks up to fifty-two weeks ahead, or as seasons up to three years ahead. The futures are purely financial contracts used for price hedging. About fifteen brokering companies offer services to the electricity market. The bulk of the volume traded is in standardized financial contracts, often referred to as over-the-counter (OTC) contracts. The liquidity of the OTC market is quite high, particularly for the nearest season. Contracts can be resold, or a position netted out by making an opposite contract.

Just as for bilateral trade, the PX-based financial market is heavily dependent on a well functioning spot market to provide a relevant reference price. Any unnecessary uncertainty in the spot price, due to possible strategic pricing, lends an extra uncertainty to the financial contract prices. This leads to a diminished trade on the financial market which in turn decreases the possibility for all participants in the electricity market to hedge their contracts, thus reducing liquidity in the whole market. Research also indicates that the presence of a well functioning financial (futures) market might actually reduce market power on the spot market.

Nord Pool has well established and transparent futures products in electricity. By providing tools for risk management, the financial market contributes to the efficient functioning of both wholesale and end-user markets. The listed derivatives at Nord Pool are traded with a reference price based on the system price in the Nordic day-ahead spot market. The financial market is as such a purely financial market where all contracts are traded and settled irrespective of transmission capacity.

The Nordic financial electricity market Report 8/2010 of NordREG (NordREG is a cooperation of the Nordic energy regulators) states:

NordREG has found that the general view is that the Nordic financial electricity market functions well and has a good liquidity in the basic products. There is also a general consensus that there is trust in the market. The Nordic power market is often ranked highest in Europe regarding transparency and efficiency. The Nordic power market also has the highest turnover in exchange trading in relation to consumption in the area.

A Chronology of the development of Nord Pool over the years.

2016: Nord Pool Spot is rebranded to Nord Pool.

Nord Pool is appointed NEMO in Belgium, Germany, Luxembourg and Poland. Nord Pool is together with IBEX opening the Bulgarian power market and together with Croupex opening the Croatian power market.

2015: Nord Pool Spot introduce a new Day Ahead Web and Intraday Web. Nord Pool Spot is appointed Nominated Electricity Market Operator (NEMO) across 10 European power markets; Austria, Denmark, Estonia, Finland, France, GB, Latvia, Lithuania, the Netherlands and Sweden.

2014: Nord Pool Spot takes sole ownership of the UK market. North-Western European power markets are coupled through the Price Coupling of Regions (PCR) project. Nord Pool Consulting is launched.

2013: Elspot bidding area opened in Latvia. Intraday market, Elbas, introduced in both Latvia and Lithuania.

2012: Nord Pool Spot opens bidding area in Lithuania.

2011: Elbas licensed to APX and Belpex as the intraday market in the Netherlands and Belgium respectively.

2010: Nord Pool Spot and NASDAQ OMX Commodities launch the UK market N2EX. Nord Pool Spot opens a bidding area in Estonia and delivers the technical solution for a new Lithuanian market place.

2009: Norway joins the Elbas intraday market. The European Market Coupling Company relaunches the Danish-German market coupling on 9 November. Nord Pool Spot implements a negative price floor in Elspot.

2008: Highest turnover and market share recorded in the company's history until then. Elspot market share 70%.

2007: Western Denmark joins the Elbas market. SESAM, the new Elspot trading system is set into production.

2006: Nord Pool Spot launches Elbas in Germany.

2005: Nord Pool Spot opens the Kontek bidding area in Germany, which geographically gives access to the Vattenfall Europe Transmission control area.

2004: Eastern Denmark joins the Elbas market.

2002: Nord Pool's spot market activities are organized in a separate company, Nord Pool Spot AS.

2000: The Nordic market becomes fully integrated as Denmark joins the exchange.

1999: Elbas is launched as a separate market for balance adjustment in Finland and Sweden. Elspot area trade begins 1 July.

1998: Finland joins Nord Pool ASA. Nord Pool opens an office in Odense, Denmark.

1996

A joint Norwegian-Swedish power exchange is established. The exchange is renamed Nord Pool ASA.

1995: The framework for an integrated Nordic power market contracts was made to the Norwegian Parliament. Together with Nord Pool's license for cross-border trading (given by the Norwegian Water Resources and Energy Administration), this report made the foundation for spot trading at Nord Pool.

1993: Statnett Marked AS is established as an independent company. Total volume in the first operating year is 18.4 TWh, at a value of NOK 1.55 billion.

1991: Norwegian parliament's decision to deregulate the market for trading of electrical energy goes into effect.

Annexure-B

Will be attached after approval.

Details of Cost Estimate (including GST)

- 1. Fee for one batch upto 20 participants: INR 3,35,63,000.00**
- 2. Fee for three batches with total 60 participants: INR 10,06,89,000.00**
- 3. Per Participant fee for additional participants above 20: INR 16,78,150.00**

भारत सरकार
Government of India



विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

Dated: 19.12.2023

सेवा में,

As per attached list

Subject: Nomination of members for Regional Level Disaster Management Group (RDMG)-reg

Ref:

- i. Disaster Management Plan for Power Sector Prepared by Central Electricity Authority in fulfilment of provisions of Disaster Management Act 2005 issued in January 2021 (enclosed)
- ii. Minutes of 69th NRPC meeting issued vide letter dated 01.11.2023 (enclosed)

It is to apprise that the Central Electricity Authority has prepared a Disaster Management Plan (January 2021) for Power Sector. Wherein, a four-tier structure has been put in place at Central, Regional, State and Local Unit Level, with intervention and response depending on the severity of the disaster /calamity for effectively dealing with disaster situations in power sector and fulfilling the responsibilities as per section 36 of the Disaster Management Act 2005.

As per above Disaster Management Plan (January 2021), the Regional Level Disaster Management Group (RDMG) has composition as below:

- a) Member Secretary (RPC) – Chairman
- b) Representative of Secretary in-charge of Rehabilitation and Relief of the affected State of the Region
- c) Representatives of each State Civil Defence

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- d) Regional HODs CPSUs (NTPC, NHPC, PGCIL etc.)
- e) CMDs State TRANSCOs/Power Departments
- f) SLDC in charge of each state.
- g) Chief Engineer, Central Water Commission (CWC), for floods related early warnings.
- h) Deputy Director-General, Indian Metrological Department (IMD), for Earthquake, and Cyclone related early warnings.
- i) Group Head, Ocean Information and Forecast Services Group (ISG), for Tsunami related early warnings.
- j) Head of RLDC

Further, reference is invited to discussion held in 69th NRPC meeting, held on 27.09.2023, wherein, it was decided that nomination will be asked from the constituents of the group to decide and perform the roles and responsibilities collectively in any future emergency situations.

In view of above, it is requested to nominate one representative from your organization for the constitution of above Regional Level Disaster Management Group (RDMG) of Northern Regional Power Committee. The nomination may be sent at (Email:seo-nrpc@nic.in), with details as below:

Name of Officer	Designation	Mobile No.	E-mail id	Office address

Encl: as above

Signed by Vijay Kumar Singh

(V K Singh)
Date: 19-12-2023 14:38
Member Secretary, NRPC
Reason: Approved

I/32534/2023

List of Addressee:

Secretary in-charge of Rehabilitation and Relief:		
Home Secretary, UT of Chandigarh, 2nd Floor, Chandigarh Secretariat, Sector 9, Chandigarh- 160 009 Tel. +91 172 2740008 hs-chd@nic.in	Secretary-II to Govt. of Haryana, Revenue & Disaster Management Department, Room No. 429, 4th Floor, New Haryana Secretariat, Sector- 17, Chandigarh- 160017 secretaryrevenue2@gmail.com	Principal Secretary (Revenue), Government of Himachal Pradesh, HP Secretariat, Shimla - 171002 0177- 2880780 revsecy-hp@nic.in
Secretary, Department of DMRRR, Civil Secretariat, Jammu/Srinagar, 180001 dmrrr-sec@jk.gov.in	Secretary Revenue, Punjab Government, 3rd Floor, Punjab Civil Secretariat-1, Sector 1, Chandigarh- 160001 0172-2742351 secy.r@punjab.gov.in	Secretary, Disaster Management, Relief & Civil Defence Department, Government of Rajasthan, Disaster Management, Relief and Civil Defence Department Food Building Secretariat, Jaipur (Rajasthan)- 302005 01412227390 relief-rj@nic.in
Secretary Revenue & Relief Commissioner, Government of Uttar Pradesh, 2 nd Floor, Shastri Bhawan, Lucknow-226001 0522-2238200, 2215011 rahat@nic.in	Secretary Disaster Management, Uttarakhand USDMA, Secretariat Campus, 4-B, Subash Road, Dehradun Uttarakhand Secretariat- 248001 0135-2659850 usdmauttarakhand@gmail.com	Secretary, Department of Social Welfare, Govt. of NCT of Delhi, 7th Floor, MSO Building, I.T.O, New Delhi-110002 01123324059 pssw@nic.in
Head of State Civil Defence:		
Deputy Commissioner-cum- Director, Civil Defence, UT of Chandigarh, Estate Office Building, Sector 17, Chandigarh- 160017 Tel. +91 172 2700109 dc-chd@nic.in	Commandant General, Home Guards & Director Civil Defence, Haryana 30 Bays Building, Sector - 17, Chandigarh- 160017 0172-2701357 cghgndircd.hgncd-hry@gov.in	Commandant General Home Guards & Civil Defence, US Club, Shimla-171001 0177-2811453 dgp-hg-hp@nic.in
Commandant General HG/CD & SDRF APHQ Complex, 2nd Floor, Gulshan Ground, Gandhi Nagar, Jammu- 180004 0191-2435285 Cghgcd-sdrf@jkpolice.gov.in	Commandant General Home Guards & Director Civil Defence, Punjab 17 Bays Building, Sector-17-C, Chandigarh-160017 0172-2701353 comdtgenlphg@punjab.gov.in	Secretary, Disaster Management, Relief & Civil Defence Department, Government of Rajasthan, Disaster Management, Relief and Civil Defence Department Food Building Secretariat, Jaipur (Rajasthan)- 302005 01412227390 relief-rj@nic.in

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DG, Civil Defence 5 th floor, Jawahar Bhawan, Ashok Marg, Lucknow- 226001 0522-2286668 dgcdup@yahoo.com	Commandant General, Home Guard & Civil Defence, Homeguard Headquater Nannurkeda, Dehradun, Uttarakhand- 248008 0135-2784471 cghgcduk@gmail.com	Director Civil Defence, 1, Kripa Narayan Marg Civil Lines, Delhi- 110054 011-23937350 civildefencehq.delhi@gov.in
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Sr. No	ENTITY	METER CODE	METER SR NO	ELEMENT	REMARK
1	BBMB	BB-68	NS-1059-A	220/66kV ICT-3(220kV) at Ballabgarh-BBMB	METER FAULTY
2		DL-51	NP-7762-A	220kV BTPS-1 at Ballabgarh-BBMB	METER FAULTY
3		BH-10	NS-1030-A	66 kV NFF-2 at Bhakra Left Bank	METER DATA NOT PROVIDED
4		PU-07	NP-1648-A	220kV Dhandari-1 at Jamalpur-BBMB	METER FAULTY
5		HR-03	NP-3024-A	ICT-2(220kV) at Narela-BBMB	TIME DRIFT
6		BB-20	NS-1045-A	220/132kV ICT-1(132kV) at Hissar-BBMB	METER READING NEAR TO ZERO, REPLACEMENT NEEDED
7		BB-22	NR-3642-A	220/132kV ICT-3(132kV) at Hissar-BBMB	METER READING NEAR TO ZERO, REPLACEMENT NEEDED
8		BB-24	NP-7196-A	220/132kV ICT-2(132kV) at Hissar-BBMB	METER READING NEAR TO ZERO, REPLACEMENT NEEDED
9		BB-25	NP-1351-A	220kV Hissar (IA)-1 at Hissar-BBMB	METER FAULTY
10		BB-44	NR-3854-A	220kV Bhiwani(HVPM)-1 at Bhiwani-BBMB	STATION NOT PROVIDING METER DATA
11		BB-45	NR-3582-A	220kV Bhiwani(HVPM)-2 at Bhiwani-BBMB	STATION NOT PROVIDING METER DATA
12		BB-07	NR-3271-A	220/33kV T/F-1 (220 kV) at Panipat-BBMB	TIME DRIFT
13		BB-74	NP-3135-A	220/66kV ICT-3(66kV) at Jagadhari-BBMB	METER READING NEAR TO ZERO
14		CH-02	NP-6582-A	66kV UT Chd-2 Sec28 at Dhulkote-BBMB	METER FAULTY
15		BB-35	NP-5051-A	220kV Faridabad GPS-2 at Samaypur-BBMB	METER FAULTY(READING HAS SPIKES SINCE LONG)
16		PU-26	WR-2164-A	220/66kV ICT-2(66kV) at Sangrur-BBMB	HAS OPPOSITE POLARITY
17		PJ-34	NS-1884-A	220/132kV ICT-1 (132kV) at Jalandhar-BBMB	HAS OPPOSITE POLARITY
18		PJ-36	NS-1898-A	220/132kV ICT-3 (132kV) at Jalandhar-BBMB	HAS OPPOSITE POLARITY
19		PJ-38	NS-1870-A	220/66kV ICT-1 (66kV) at Jalandhar-BBMB	HAS OPPOSITE POLARITY
20		PJ-39	NS-1862-A	220/66kV ICT-2 (66kV) at Jalandhar-BBMB	HAS OPPOSITE POLARITY
21		PJ-46	NS-1893-A	220/132kV ICT-2(132kV)	METER READING

				at Jamalpur-BBMB	ABRUPT
22		PJ-47	NS-1905-A	220/132kV ICT-3(132kV) at Jamalpur-BBMB	METER READING ABRUPT
23		GW-04	NP-1020-B	33 kV Nurpurbedi at Ganguwal HPS	TIME DRIFT
24	CHANDIGARH	CH-15	NP-1356-A	66 kV Mohali-1 at Chandigarh UT-Sec.39	TIME DRIFT OF 30 MINS
25		CH-16	NP-6573-A	66 kV Mohali-2 at Chandigarh UT-Sec.39	TIME DRIFT OF 30 MINS
26	DELHI	DL-73	NP-5182-A	400kV Dadri-1 at Harsh Vihar(Loni)-DTL	TIME DRIFT
27		DL-74	NP-1158-A	400kV Dadri-2 at Harsh Vihar(Loni)-DTL	TIME DRIFT
28	HARYANA	HY-17	NS-1016-A	400 kV Abdullapur-PG at Dipalpur-HVPNL	METER FAULTY
29		HP-25	NP-1406-A	220 kV Baddi ckt 1 at Pinjore-HVPN	METER FAULTY
30		HY-51	NR-3771-A	400 KV Jind(PG)-1 at Kirori(HVPNL)	TIME DRIFT
31	J&K	PU-36	NP-1883-A	220 kV Sarna at Hiranagar-PDD	METER DATA NOT PROVIDED
32		PU-35	NP-8534-A	220 kV Sarna at Udhampur-PDD	METER DATA NOT PROVIDED
33		JK-30	NP-5481-A	220 kV Kishenpur-PG-1 at Barn-PDD	TIME DRIFT
34		JK-31	NP-5482-A	220 kV Kishenpur-PG-2 at Barn-PDD	TIME DRIFT
35		JK-38	NP-5467-A	132 kV SEWA II CIRCUIT-1 at Mahanpur- PDD	TIME DRIFT
36		JK-39	NP-6195-A	132 kV SEWA II at Kathua-PDD\$	TIME DRIFT
37	HP	HP-07	NP-3137-A	132 kV Chohal at 132kV Hamirpur-HPSEB	METER FAULTY
38		HP-31	NP-6971-A	220kV Khodri-2 at Majhri- HPSEB	METER FAULTY
39		HP-09	NP-1869-A	132kV Kulhal at Majhri- HPSEB	METER FAULTY
40		HP-12	NP-1867-A	220 kV Pinjore-HVPN ckt 2 at Baddi(HP)	METER FAULTY
41		HP-34	NP-1392-A	132 kV Dehar at Kangoo- HPSEB	METER FAULTY
42	POWERGRID	HY-67	NS-1205-A	400/220 kV ICT-3 (400KV) at Kurukshetra PG	METER DATA NOT PROVIDED
43		MS-42	NR-3712-A	ICT-3(220 kV) 500MVA at Sohawal-PG	METER HAS OPPOSITE POLARITY
44		HY-68	NS-1458-A	400/220 kV ICT-3 (220KV) at Kurukshetra PG	METER DATA NOT PROVIDED
45		CH-23	NS-1518-A	220/66 kV ICT 1(66 kV) at Chandigarh(PG)	METER HAS OPPOSITE POLARITY
46		CH-25	NS-1533-A	220/66 kV ICT 2(66 kV) at Chandigarh(PG)	METER HAS OPPOSITE POLARITY

47		NU-19	NR-3977-A	400 kV Ratangarh(RVPNL)-II at Sikar-PG	BLANK FILE, METER FAULTY
48		PU-94	NP-3125-A	ICT-2 (220 kV) at Patiala-PG	READING 2/3RD
49		PJ-33	NS-1391-A	ICT-4 (220 kV)(500MVA) at Patiala-PG	METER DATA NOT PROVIDED
50		PU-96	NP-3158-A	ICT-1 (220 kV) at Amritsar-PG	HAS TIME DRIFT MORE THAN 1 HR
51		PJ-09	NR-3426-A	220kV Mohali-2 at Nalagarh-PG	BLANK FILE, METER FAULTY
52		NB-09	NR-3383-A	ICT-1 (400 kV) at Banala PG	METER READING LESS
53		LN-07	NS-1556-A	400kV Lahal (HP) ckt 1 at Chamba(PG)(Rajera)	METER FAULTY
54		LN-09	NS-1558-A	400kV Lahal (HP) ckt 2 at Chamba(PG)(Rajera)	METER FAULTY
55		HP-37	NR-3423-A	220kV HPSEB NANGAL-1 at Nalagarh-PG	TIME DRIFT
56	PUNJAB	PS-01	NP-8268-A	400 kV Jalandhar(PG) at Nakodar-PSEB	METER DATA NOT PROVIDED
57		PS-02	NP-8158-A	400 kV Kurukshetra(PG) at Nakodar-PSEB	METER DATA NOT PROVIDED
58		PU-46	NP-1871-A	132 kV Hamirpur at Chohal-PSEB	METER FAULTY
59		PS-03	NR-3469-A	400 kV Moga(PG) at Nakodar-PSEB	METER DATA NOT PROVIDED
60		PU-83	NP-1588-A	220 kV Jalandhar(PG)-1 at Kartarpur-PSEB	METER DATA NOT PROVIDED
61		PU-84	NP-1679-A	220 kV Jalandhar(PG)-2 at Kartarpur-PSEB	METER DATA NOT PROVIDED
62		PU-38	NS-2029-A	132 kV Kotla-2 at Ropar-PSEB	HAS OPPOSITE POLARITY
63	RAJASTHAN	RJ-86	NP-5029-A	220kV Hissar(BBMB) at Chirawa-RVPNL	METER DATA NOT PROVIDED
64		RD-19	NS-1404-A	400kV Fathegarh 3(PG) ckt 1 at Jaisalmer(RS)	METER DATA NOT PROVIDED
65		RD-20	NS-1322-A	400kV Fathegarh 3(PG) ckt 2 at Jaisalmer(RS)	METER DATA NOT PROVIDED
66		RH-19	NR-4472-A	400 kV Sikar (PG)-1 at Babai-RRVPNL	METER FAULTY
67	UPPCL	UP-30	NS-1578-A	220kV Agra-PG at Kirawali(Agra)-UPPCL	METER DATA NOT PROVIDED
68		UQ-20	NP-8123-A	400kV Lucknow(PG) at 400kV Lucknow-UPPCL	METER DATA NOT PROVIDED
69		NV-03	NR-4307-A	400 kV Lucknow-2 at Basti-UPPCI	TIME DRIFT
70		NV-04	NR-4304-A	400 kV Gorakhpur 2 at Basti-UPPCL	TIME DRIFT
71		MS-34	NS-1569-A	400kV Varanasi(PG) ckt 1 at Jaunpur(UP)	METER DATA NOT PROVIDED
72		MS-35	NS-1570-A	400kV Varanasi(PG) ckt 2 at Jaunpur(UP)	METER DATA NOT PROVIDED

73	UTTARAKHAND	UA-43	NP-1890-A	400kV Moradabad at Kashipur-UPCL	METER DATA NOT PROVIDED
74		UA-36	NP-1751-A	132kV Afzalgarh at Kalagarh-UPCL(Feeder-71)	TIME DRIFT
75		UA-37	NP-1584-A	132kV Sherkot at Kalagarh-UPCL(Feeder-72)	TIME DRIFT

CENTRAL ELECTRICITY REGULATORY COMMISSION**NEW DELHI**

No.L-1/268/2022/CERC

Dated 15th March, 2024**(NOTIFICATION)**

In the exercise of powers conferred under section 178 of the Electricity Act, 2003 (36 of 2003) read with Section 61 thereof and all other powers enabling it in this behalf, and after previous publication, the Central Electricity Regulatory Commission hereby makes the following regulations, namely:

CHAPTER – 1**PRELIMINARY**

1. **Short title and commencement.** (1) These regulations may be called the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2024.
- (2) These regulations shall come into force on 1.4.2024, and, unless reviewed earlier or extended by the Commission, shall remain in force for a period of five years from 1.4.2024 to 31.3.2029:

Provided that where a generating station or unit thereof and transmission system or an element thereof, has been declared under commercial operation before the date of commencement of these regulations and whose tariff has not been finally determined by the Commission till that date, tariff in respect of such generating station or unit thereof and transmission system or an element thereof for the period ending 31.3.2024 shall be determined in accordance with the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 as amended from time to time.

2. **Scope and extent of application.** (1) These regulations shall apply to all cases where tariff for a generating station or a unit thereof and a transmission system or an element thereof is required to be determined by the Commission under section 62 of the Act read with section 79 thereof:

Provided that any generating station for which agreement(s) have been executed for the supply of electricity to the beneficiaries on or before 5.1.2011 and the financial closure for the said generating station has not been achieved by 31.3.2024, such projects shall not be eligible for determination of tariff under these regulations unless fresh consent of the beneficiaries is obtained and furnished;

(2) These regulations shall also apply in all cases where a generating company has the arrangement for the supply of coal or lignite from the integrated mine(s) allocated to it, for one or more of its specified end use generating stations, whose tariff is required to be determined by the Commission under section 62 of the Act read with section 79 thereof.

(3) These regulations shall not apply to the following cases: -

(a) Generating stations or transmission systems whose tariff has been discovered through tariff based competitive bidding in accordance with the guidelines issued by the Central Government and adopted by the Commission under section 63 of the Act;

(b) Generating stations based on renewable sources of energy whose tariff is determined in accordance with the Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020.

3. **Definitions.** - In these regulations, unless the context otherwise requires: -

(1) '**Act**' means the Electricity Act, 2003 (36 of 2003);

(2) '**Additional Capital expenditure**' means the capital expenditure incurred, or projected to be incurred after the date of commercial operation of the project by the generating company or the transmission licensee, as the case may be, in accordance with the provisions of these regulations;

(3) '**Additional Capitalisation**' means the additional capital expenditure admitted by the Commission after prudence check, in accordance with these regulations;

(4) '**Admitted capital cost**' means the capital cost which has been allowed by the Commission for servicing through tariff after due prudence check in accordance with the relevant tariff regulations;

(5) '**Annual Target Quantity**' or '**ATQ**' in respect of an integrated mine(s) means the quantity of coal or lignite to be extracted during a year from such integrated mine(s) corresponding to 85% of the quantity specified in the Mining Plan;

(6) '**Ancillary Service**' or '**AS**' in relation to power system operation means the service necessary to support the grid operation in maintaining power quality, reliability and security of the grid and includes Primary Reserve Ancillary Service, Secondary Reserve Ancillary Service, Tertiary Reserve Ancillary Service, active power support for load following, reactive power support, black start and such other services as defined in the Grid Code;

(7) '**Auxiliary Energy Consumption**' or '**AUX**' in relation to a period in case of a generating station means the quantum of energy consumed by auxiliary equipment of the generating station, such as the equipment being used for the purpose of operating plant and machinery including switchyard of the generating station and the transformer losses within the generating station, expressed as a percentage of the sum of gross energy generated at the generator terminals of all the units of the generating station;

Provided that auxiliary energy consumption shall not include energy consumed for the supply of power to the housing colony and other facilities at the generating station and the power consumed for construction works at the generating station and integrated mine(s);

Provided further that auxiliary energy consumption for compliance with revised emission standards, sewage treatment plant and external coal handling plant (jetty and associated infrastructure) shall be considered separately.

(8) '**Auxiliary energy consumption for emission control system**' or '**AUXe**' in relation to a

period in the case of coal or lignite based thermal generating station means the quantum of energy consumed by auxiliary equipment of the emission control system of the coal or lignite based thermal generating station in addition to the auxiliary energy consumption under clause (7) of this Regulation;

(9) '**Auditor**' means an auditor appointed by a generating company or a transmission licensee, as the case may be, in accordance with the provisions of sections 224, 233B and 619 of the Companies Act, 1956 (1 of 1956), as amended from time to time or Chapter X of the Companies Act, 2013 (18 of 2013) or any other law for the time being in force;

(10) '**Beneficiary**' in relation to a generating station covered under clauses (a) or (b) of sub-section 1 of section 79 of the Act, means a distribution licensee who is purchasing electricity generated at such generating station by entering into a Power Purchase Agreement either directly or through a trading licensee on payment of capacity charges and energy charges;

Provided that where the distribution licensee is procuring power through a trading licensee, the arrangement shall be secured by the trading licensee through back to back power purchase agreement and power sale agreement.

Provided further that beneficiary shall also include any person who has been allocated capacity in any inter-State generating station by the Government of India.

(11) '**Capital Cost**' means the capital cost as determined in Regulation 19 of these regulations in respect of generating station or transmission system, as the case may be, and Regulation 41 of these regulations in respect of integrated mine(s);

(12) '**Change in Law**' means the occurrence of any of the following events:

- (a) enactment, bringing into effect or promulgation of any new Indian law; or

- (b) adoption, amendment, modification, repeal or re-enactment of any existing Indian law; or
- (c) change in interpretation or application of any Indian law by a competent court, Tribunal or Indian Governmental Instrumentality which is the final authority under law for such interpretation or application; or
- (d) change by any competent statutory authority in any condition or covenant of any consent or clearances or approval or licence available or obtained for the project; or
- (e) coming into force or change in any bilateral or multilateral agreement or treaty between the Government of India and any other Sovereign Government having implications for the generating station or the transmission system regulated under these regulations.

(13) '**Commission**' means the Central Electricity Regulatory Commission referred to in sub-section (1) of section 76 of the Act;

(14) '**Communication System**' means communication system as defined in sub clause (h) of clause (i) of Regulation 2 of the Central Electricity Regulatory Commission (Communication System for inter-State transmission of electricity) Regulations, 2017;

(15) '**Competitive Bidding**' means a transparent process for procurement of equipment, services and works in which bids are invited by the project developer by open advertisement covering the scope and specifications of the equipment, services and works required for the project, and the terms and conditions of the proposed contract as well as the criteria by which bids shall be evaluated, and shall include domestic competitive bidding and international competitive bidding;

(16) '**Cut-off Date**' shall be the last day of the financial year closing after thirty six months from the date of commercial operation of the project, except in case of integrated mine(s);

(17) '**Date of Commercial Operation**' or '**COD**' in respect of a thermal generating station or hydro

generating station or transmission system or communication system shall have the same meaning as defined in the Grid Code, as amended from time to time:

Provided that Date of Commercial Operation of integrated mine(s) shall have the same meaning as specified in Regulation 5 of these regulations;

(18) '**Date of Operation**' or '**ODe**' in respect of an emission control system means the date of putting the emission control system into use after meeting all applicable technical and environmental standards, certified through the Management Certificate duly signed by an authorised person, not below the level of Director of the generating company;

(19) '**Date of Commencement of Production**' in respect of integrated mine(s) means the date of touching of coal or lignite, as the case may be, as declared by the generating company;

(20) '**Declared Capacity**' or '**DC**' in relation to a generating station means, the capability to deliver ex-bus electricity in MW declared by such generating station in relation to any time-block of the day as defined in the Grid Code or whole of the day, duly taking into account the availability of fuel or water, and subject to further qualification in these regulations;

(21) '**De-capitalisation**' for the purpose of the tariff under these regulations, means a reduction in Gross Fixed Assets of the project as admitted by the Commission corresponding to the inter-unit transfer of assets or the assets taken out from service;

(22) '**De-commissioning**' means removal from service of a generating station or a unit thereof or transmission system including communication system or element thereof, after it is certified by the Central Electricity Authority or any other authorized agency, either on its own or on an application made by the project developer or the beneficiaries or both, that the project cannot be operated due to non-performance of the assets on account of technological obsolescence or uneconomic operation or due to environmental concerns or safety issues or a combination of these factors;

(23) '**Design Energy**' means the quantum of energy which can be generated in a 90% dependable year with 95% installed capacity of the hydro generating station;

(24) '**Element**' means an asset which has been distinctively defined under the scope of the transmission project in the Investment Approval, such as transmission lines, including line bays and line reactors, substations, bays, compensation devices, Interconnecting Transformers which can be put to use.

(25) '**Emission control system**' means a set of equipment or devices required to be installed in a coal or lignite based thermal generating station or unit thereof to meet the revised emission standards;

(26) '**Escrow account**' means the account for deposit and withdrawal of mine closure expenses of integrated mine(s), maintained in accordance with the guidelines issued by the Coal Controller, Ministry of Coal, Government of India;

(27) '**Existing Project**' means the generating station and the transmission system which has been declared under commercial operation on a date prior to 1.4.2024;

(28) '**Expansion project**' shall include any addition of new capacity to the existing generating station or augmentation of the transmission system, as the case may be;

(29) '**Expenditure Incurred**' means the fund, whether the equity or debt or both, actually deployed and paid in cash or cash equivalent, for the creation or acquisition of a useful asset and does not include commitments or liabilities for which no payment has been released;

(30) '**Extended Life**' means the life of a generating station or unit thereof or transmission system or element thereof beyond the period of useful or operational life, as may be determined by the Commission on case to case basis;

(31) '**Force Majeure**' for the purpose of these regulations means the events or circumstances or

combination of events or circumstances, including those stated below, which prevent the generating company or transmission licensee from completing or operating the project, and only if such events or circumstances are not within the control of the generating company or transmission licensee and could not have been avoided, had the generating company or transmission licensee taken reasonable care or complied with prudent utility practices:

- (a) Act of God including lightning, drought, fire and explosion, earthquake, volcanic eruption, landslide, flood, cyclone, typhoon, tornado, geological surprises, or exceptionally adverse weather conditions which are in excess of the statistical measures for the last hundred years; or
- (b) Any act of war, invasion, armed conflict or act of a foreign enemy, blockade, embargo, revolution, riot, insurrection, terrorist or military action; or
- (c) Industry wide strikes and labour disturbances having a nationwide impact in India; or
- (d) Delay in obtaining statutory approval for the project except where the delay is attributable to the project developer;

(32) **'Fuel Supply Agreement'** means the agreement executed between the generating company and the fuel supplier for the generation and supply of electricity to the beneficiaries;

(33) **'Generating Station'** shall have the same meaning as defined under sub-Section 30 of Section 2 of the Act and, for the purpose of these regulations, shall also include stages or blocks or units of a generating station;

(34) **'Generating Unit'** or **'Unit'** in relation to a thermal generating station (other than combined cycle thermal generating station) means steam generator, turbine-generator and auxiliaries, or in relation to a combined cycle thermal generating station, means turbine-generator and auxiliaries or

combustion turbine-generator, associated waste heat recovery boiler, connected steam turbine-generator and auxiliaries, and in relation to a hydro generating station means turbine-generator and its auxiliaries;

(35) '**Grid Code**' means the Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023;

(36) '**Gross Calorific Value**' or '**GCV**' in relation to a thermal generating station means the heat produced in kCal by the complete combustion of one kilogram of solid fuel or one litre of liquid fuel or one standard cubic meter of gaseous fuel, as the case may be;

(37) '**GCV as Received**' means the GCV of coal as measured at the unloading point of the thermal generating station through collection, preparation and testing of samples from the loaded wagons, trucks, ropeways, Merry-Go-Round (MGR), belt conveyors and ships in accordance with the IS 436 (Part-1/ Section 1)- 1964:

Provided that the measurement of coal shall be carried out through sampling by a third party agency to be appointed by the generating companies in accordance with the guidelines, if any, issued by the Central Government:

Provided further that samples of coal shall be collected either manually or through hydraulic augur or through any other method considered suitable, keeping in view the safety of personnel and equipment:

Provided also that the generating companies may adopt any advanced technology for the collection, preparation and testing of samples for measurement of GCV in a fair and transparent manner;

(38) '**Gross Station Heat Rate**' or '**SHR**' means the heat energy input in kCal required to generate

one kWh of electrical energy at generator terminals of a thermal generating station;

(39) '**Implementation Agreement**' means any agreement or covenant entered into (i) between the transmission licensee and the generating company or (ii) between the transmission licensee and developer of the interconnected transmission system for the execution of generation and transmission projects in a coordinated manner, laying down the project implementation schedule and mechanism for monitoring the progress of the projects;

(40) '**Indian Governmental Instrumentality**' means the Government of India, Governments of State (where the project is located) and any ministry or department or board or agency controlled by the Government of India or the Government of State where the project is located, or quasi-judicial authority constituted under the relevant statutes in India;

(41) '**Infirm Power**' means electricity injected into the grid prior to the date of commercial operation of a unit of the generating station in accordance with Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023;

(42) '**Input Price**' means the price of coal or the price of lignite (including transfer price of lignite in respect of existing lignite mines) sourced from the integrated mines at which the coal or lignite is transferred to the generating station for the purpose of computing the energy charges for generation and supply of electricity to the beneficiaries and determined in accordance with Chapter 9 of these regulations;

(43) '**Installed Capacity**' or '**IC**' means the summation of the name plate capacities of all the units of the generating station or the capacity of the generating station reckoned at the generator terminals, as may be approved by the Commission from time to time;

(44) '**Integrated Mine**' means the captive mine (allocated for use in one or more identified generating stations) or basket mine (allocated to a generating company for use in any of its generating

stations) or both being developed by the generating company or its affiliate for supply of coal or lignite to one or more specified end use generating stations for generation and sale of electricity to the beneficiaries;

*Explanation: **Affiliate** shall mean a company that is directly controlled and owned by a generating company having at least twenty six percent (26%) of the voting rights of the entity.*

(45) '**Inter-State Generating Station**' or '**ISGS**' has the meaning as assigned in the Grid Code;

(46) '**Investment Approval**' means approval by the Board of the generating company or the transmission licensee or Cabinet Committee on Economic Affairs (CCEA) or any other competent authority conveying administrative sanction for the project, including funding of the project and the timeline for the implementation of the project:

Provided that the date of Investment Approval shall be reckoned from the date of the resolution of the Board of the generating company or the transmission licensee where the Board is competent to accord such approval and from the date of sanction letter of competent authority in other cases;

Provided further that in respect of the integrated mine(s), funding and timeline for implementation shall be indicated separately and distinctly in the Investment Approval;

Provided further that where investment approval includes both the generating station and the integrated mine(s), the funding and timeline for implementation of the integrated mine(s) shall be worked out and indicated separately and distinctly in the Investment Approval.

(47) '**Landed Fuel Cost**' means the total cost of coal (including biomass in case of co firing), lignite or the gas/naphtha/liquid fuel delivered at the unloading point of the generating station and shall include the base price or input price, washery charges wherever applicable, transportation cost (overseas or inland or both) and handling cost, charges for third party sampling and applicable

statutory charges;

(48) '**Loading Point**' in respect of integrated mine(s) means the location of railway siding or silo or the coal handling plant or such other arrangements like a conveyor belt, whichever is nearest to the mine, for despatch of coal or lignite, as the case may be;

(49) '**Long-Term Customer**' shall have the same meaning as 'Long Term Customer' as defined in the Central Electricity Regulatory Commission (Grant of Connectivity, Long-term Access and Medium-term Open Access in inter-State Transmission and related matters) Regulations, 2009 or Designated ISTS Customers (DICs) or "General Network Access Grantee" or "GNA Grantee" as defined in the Central Electricity Regulatory Commission (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022 (excluding those granted "T-GNA");

(50) '**Maximum Continuous Rating**' or '**MCR**' in relation to a generating unit of the thermal generating station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer at rated parameters, and in relation to a block of a combined cycle thermal generating station means the maximum continuous output at the generator terminals, guaranteed by the manufacturer with water or steam injection (if applicable) and corrected to 50 Hz grid frequency and specified site conditions;

(51) '**Mine Infrastructure**' shall include assets of the integrated mine(s) such as tangible assets used for mining operations, being civil works, workshops, immovable winning equipment, foundations, embankments, pavements, electrical systems, communication systems, relief centres, site administrative offices, fixed installations, handling arrangements, crushing and conveying systems, railway sidings, pits, shafts, inclines, underground transport systems, hauling systems (except movable equipment unless the same is embedded in land for permanent beneficial enjoyment

thereof), land demarcated for afforestation and land for rehabilitation and resettlement of persons affected by mining operations under the relevant law;

(52) '**Mining Plan**' or '**Mine Plan**' in respect of integrated mine(s) means a plan prepared in accordance with the Guidelines for Preparation, Formulation, Submission, Processing, Scrutiny, Approval and Revision of Mining Plan for the coal and lignite block issued by the Ministry of Coal, Government of India as amended from time to time or provisions of the Mineral Concession Rules, 1960, as amended from time to time and approved under clause (b) of sub-section (2) of section 5 of the Mines and Minerals (Development and Rehabilitation) Act, 1957 by the Central Government or by the State Government, as the case may be;

(53) '**New Project**' means the generating station or unit thereof or the transmission system or element thereof achieving its commercial operation on or after 1.4.2024;

(54) '**Non-Pit Head Generating Station**' or '**Non-Pit Head Power Plant**' means coal and lignite based generating stations other than Pit Head Generating Stations.

(55) '**Operation and Maintenance Expenses**' or '**O&M expenses**' means the expenditure incurred for operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, maintenance, repairs and maintenance spares, other spares of capital nature valuing up to Rs. 10 lakhs, additional capital expenditure of an individual asset costing less than Rs. 20 lakhs, consumables, insurance and overheads and fuel other than used for generation of electricity:

Provided that for integrated mine(s), the Operation & Maintenance Expenses shall not include the mining charge paid to the Mine Developer and Operator, if any, engaged by the generating company and the mine closure expenses.

(56) '**Original Project Cost**' means the capital expenditure incurred by the generating company or the transmission licensee, as the case may be, within the original scope of the project up to the cut-

off date, and as admitted by the Commission;

(57) **'Peak Rated Capacity'** in respect of integrated mine(s) means the peak rated capacity of the mine, as specified in the Mining Plan;

(58) **'Pit Head Generating Station' or 'Pit Head Power Plant'** means as defined under The Environment (Protection) Rules, 1986.

(59) **'Plant Availability Factor' or '(PAF)'** in relation to a generating station for any period means the average of the daily declared capacities (DCs) for all the days during the period expressed as a percentage of the installed capacity in MW less the auxiliary energy consumption and auxiliary energy consumption for emission control system as per these regulations;

(60) **'Plant Load Factor' or '(PLF)'** in relation to a thermal generating station or unit thereof for a given period means the total sent out energy corresponding to scheduled generation during the period, expressed as a percentage of sent out energy corresponding to installed capacity in that period and shall be computed in accordance with the following formula:

$$PLF = 10000 \times \sum_{i=1}^N \frac{SG_i}{[N \times IC \times (100 - AUX_n - AUX_{en})]} \%$$

Where,

IC = Installed Capacity of the generating station or unit in MW,

SG_i = Scheduled Generation in MW for the ith time block of the period,

N = Number of time blocks during the period,

AUX_n = Normative auxiliary energy consumption as a percentage of gross energy generation; and

AUX_{en} = Normative auxiliary energy consumption for emission control system as a percentage

of gross energy generation, wherever applicable.

(61) '**Procedure Regulations**' means the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023;

(62) '**Project**' means:

- i) in the case of a thermal generating station, all components of the thermal generating station and including an integrated coal mine, biomass pellet handling system, pollution control system, and effluent treatment plan, as may be required;
- ii) in the case of a hydro generating station, all components of the hydro generating station including the dam, intake water conductor system, power generating station, as apportioned to power generation; and
- iii) in case of transmission, all components of the transmission system, including the communication system;

(63) '**Prudence Check**' means scrutiny of the reasonableness of any cost or expenditure incurred or proposed to be incurred in accordance with these regulations by the generating company or the transmission licensee, as the case may be;

(64) '**Pumped Storage Hydro Generating Station**' means a hydro generating station which generates power through energy stored in the form of water energy, pumped from a lower elevation reservoir to a higher elevation reservoir;

(65) '**Rated Voltage**' means as specified in the Grid Code;

(66) '**Reference Rate of Interest**' means the one year marginal cost of funds based lending rate (MCLR) of the State Bank of India (SBI) issued from time to time plus 325 basis points;

(67) '**Revised Emission Standards**' in respect of thermal generating station means the revised

norms notified as per Environment (Protection) Amendment Rules, 2015 or any other Rules as may be notified from time to time;

(68) '**Run-of-River Generating Station**' means a hydro generating station which does not have upstream pondage;

(69) '**Run-of-River Generating Station with Pondage**' means a hydro generating station with sufficient pondage for meeting the diurnal variation of power demand;

(70) '**Scheduled Commercial Operation Date**' or '**SCOD**' shall mean the date(s) of commercial operation of a generating station or generating unit thereof or transmission system or element thereof and associated communication system as indicated in the Investment Approval or as agreed in power purchase agreement or transmission service agreement as the case may be, whichever is earlier;

(71) '**Scheduled Energy**' means the quantum of energy scheduled by the concerned Load Despatch Centre to be injected into the grid by a generating station for a given time period;

(72) '**Scheduled Generation**' or '**Scheduled injection**' for a time block or any period means the schedule of generation or injection in MW or MWh ex-bus, including the schedule for Ancillary Services given by the concerned Load Despatch Centre in accordance with the Grid Code;

(73) '**Schedule Drawal**' for a time block or any period means the schedule of drawal in MW or MWh ex-bus, including the schedule for Ancillary Services given by the concerned Load Despatch Centre;

(74) '**Sharing Regulations**' means Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses in inter-State Transmission System) Regulations, 2020 as amended from time to time;

(75) '**Small Gas Turbine Generating Station**' means and includes open cycle gas turbine or

combined cycle generating station with gas turbines in the capacity range of 50 MW or below;

(76) '**Start Date or Zero Date**' means the date indicated in the Investment Approval for commencement of implementation of the project, and where no such date has been indicated, the date of Investment Approval shall be deemed to be Start Date or Zero Date;

(77) '**Statutory Charges**' means and includes taxes, cess, duties, royalties and other charges levied through Acts of the Parliament or State Legislatures or by Indian Government Instrumentality under relevant statutes;

(78) '**Storage Type Generating Station**' means a hydro generating station associated with storage capacity to enable variation of generation of electricity according to demand;

(79) '**Thermal Generating Station**' means a generating station or a unit thereof that generates electricity using fossil fuels such as coal, lignite, gas, liquid fuel or a combination of these as its primary source of energy or co-firing of biomass with coal;

(80) '**Transmission Line**' shall have the same meaning as defined in sub-section (72) of Section 2 of the Act;

(81) '**Transmission Service Agreement**' means the agreement entered into between the transmission licensee and the Designated ISTS Customers or long-term transmission customers or Central Transmission Utility as applicable in accordance with the Sharing Regulations and shall include the Bulk Power Transmission Agreement and Long Term Access Agreement;

(82) '**Transmission System**' means a line or a group of lines with or without associated sub-station, equipment associated with transmission lines and sub-stations identified under the scheme as per the Investment Approval(s) and shall include associated communication system;

(83) '**Trial Operation**' in relation to the transmission system shall have the same meaning as

specified in Regulation 23 of Grid Code;

(84) **'Trial Run'** in relation to the generating station shall have the same meaning as specified in Regulation 22 of Grid Code;

(85) **'Sub-Station'** shall have the same meaning as defined in sub-section (69) of section 2 of the Act;

(86) **'Unloading Point'** means the point within the premises of the coal or lignite based thermal generating station where the coal or lignite is unloaded from the rake or truck or any other mode of transport;

(87) **'Useful Life'** in relation to a unit of a generating station, integrated mines, transmission system and communication system from the date of commercial operation shall mean the following:

- (a) Coal/Lignite based thermal generating station 25 years
- (b) Gas/Liquid fuel based thermal generating station 25 years
- (c) AC and DC sub-station 25 years
- (d) Gas Insulated Substation (GIS) 25 years
- (e) Hydro generating station including pumped storage hydro generating stations 40 years
- (f) Transmission line (including HVAC & HVDC) 35 years
- (g) Optical Ground Wire (OPGW) 15 years
- (h) IT system, SCADA and Communication system excluding OPGW 7 years
- (i) Integrated mine(s) As per the Mining Plan

Provided that in the case of coal/lignite based thermal generating stations and hydro generating stations, the Operational Life may be 35 years and 50 years, respectively.

(88) The words and expressions used in these regulations and not defined herein but defined in the Act or any other regulations of the Commission, shall have the meaning assigned to them under the Act or any other regulations of the Commission.

4. **Interpretations:** - In these regulations, unless the context otherwise requires:

- (1) 'Day' means a calendar day consisting of 24 hours period starting at 0000 hours;
- (2) 'kCal' means a unit of heat energy contents in mineral, measured in one kilo calories or one thousand calories of heat produced at any instantaneous period;
- (3) 'Kilowatt-Hour' or 'kWh' means a unit of electrical energy, measured in one kilowatt or one thousand watts of power produced or consumed over a period of one hour;
- (4) 'Quarter' means the period of three months commencing on the first day of April, July, October and January of each financial year in case of an existing project, and in case of a new project, in respect of the first quarter, from the date of commercial operation to the last day of June, September, December or March, as the case may be;
- (5) 'Tonne' means a metric tonne of coal or lignite in respect of integrated mine(s);
- (6) 'Year' means a financial year beginning on 1st April and ending on 31st March:

Provided that the first year in case of a new project or integrated mine(s) shall commence from the date of commercial operation and end on the immediately following 31st March.

- (7) Reference to any Act, Rules, and Regulations shall include amendment or consolidation or re-enactment thereof.

CHAPTER – 2

DATE OF COMMERCIAL OPERATION

5. **Date of Commercial Operation:** (1) The date of commercial operation of a generating station or unit thereof or a transmission system or element thereof and associated communication system shall be determined in accordance with the provisions of the Grid Code. In the event of mismatch of COD between associated transmission and/or generating stations, the liability for the transmission charges shall be in accordance with the provisions of the Sharing Regulations, 2020 as amended from time to time.

(2) The date of commercial operation in case of integrated mine(s), shall mean the earliest of: -

- a) the first date of the year succeeding the year in which 25% of the Peak Rated Capacity as per the Mining Plan is achieved; or
- b) the first date of the year succeeding the year in which the value of production estimated in accordance with Regulation 7 of these regulations, exceeds total expenditure in that year; or
- c) the date of two years from the date of commencement of production:

Provided that on the earliest occurrence of any of the events under sub-clauses (a) to (c) of Clause (2) of this Regulation, the generating company shall declare the date of commercial operation of the integrated mine(s) under the relevant sub-clause with one week prior intimation to the beneficiaries of the end-use or associated generating station(s);

Provided further that in case the integrated mine(s) is ready for commercial operation but is prevented from declaration of the date of commercial operation for reasons not attributable to the generating company or its suppliers or contractors or the Mine Developer and Operator, the

Commission, on an application made by the generating company, may approve such other date as the date of commercial operation as may be considered appropriate after considering the relevant reasons that prevented the declaration of the date of commercial operation under any of the sub-clauses of Clause (2) of this Regulation;

Provided also that the generating company seeking the approval of the date of commercial operation under the preceding proviso shall give prior notice of one month to the beneficiaries of the end-use or associated generating station(s) of the integrated mine(s) regarding the date of commercial operation.

6. **Sale of Infirm Power:** Supply of infirm power shall be in accordance with the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related matters) Regulations, 2022:

Provided that any revenue earned by the generating company from the supply of infirm power after accounting for the fuel expenses shall be applied in adjusting the capital cost accordingly.

7. **Supply of Coal or Lignite prior to the Date of Commercial Operation of Integrated Mine:** The input price for the supply of coal or lignite from the integrated mine(s) prior to their date of commercial operation shall be:

- (a) in the case of coal, the estimated price available in the investment approval, or the notified price of Coal India Limited for the corresponding grade of coal supplied to the power sector, whichever is lower; and
- (b) in the case of lignite, the estimated price available in the investment approval or the last available pooled lignite price as determined by the Commission for the transfer price of lignite, whichever is lower:

Provided that any revenue earned from the supply of coal or lignite prior to the date of commercial operation of the integrated mine(s) shall be applied in adjusting the capital cost of the said integrated mine(s).

CHAPTER-3

PROCEDURE FOR TARIFF DETERMINATION

8. Tariff determination

(1) Tariff in respect of a generating station and emission control system, wherever applicable, may be determined for the whole of the generating station or unit thereof, and tariff in respect of a transmission system may be determined for the whole of the transmission system or element thereof or associated communication system:

Provided that:

- (i) In case of commercial operation of all the units of a generating station or all elements of a transmission system prior to 1.4.2024, the generating company or the transmission licensee, as the case may be, shall file a consolidated petition in respect of the entire generating station or transmission system for the purpose of determination of tariff for the period from 1.4.2024 to 31.3.2029:
- (ii) Tariff of the associated communication system forming part of the transmission system which has achieved commercial operation prior to 1.4.2014 shall be as per the methodology approved by the Commission prior to 1.4.2014.
- (iii) The generating company shall file an application for determination of supplementary tariff for the emission control system installed in a coal or lignite based thermal generating station in accordance with these regulations not later than 90 days from the date of operation of such emission control system.

(2) Where only a part of the generation capacity of a generating station is tied up for supplying power to the beneficiaries through a long term power purchase agreement, the units for such part capacity shall be clearly identified and, in such cases, the tariff shall be determined for such identified capacity. Where the unit(s) corresponding to such part capacity cannot be identified, the tariff of the generating station may be determined with reference to the capital cost of the entire project, but the tariff so determined shall be applicable corresponding to the part capacity contracted for supply to the beneficiaries.

(3) In case of expansion of the existing generating station, the tariff shall be determined for the expanded capacity in accordance with these regulations:

Provided that the common infrastructure of the existing generating station, shall be utilized for the expanded capacity and the benefit of new technology in the expanded capacity, as determined by the Commission, shall be extended to the existing capacity.

(4) Assets installed for implementation of the revised emission standards shall form part of the existing generation project, and the tariff thereof shall be determined separately in accordance with the application filed under the 5th proviso to Clause (1) of Regulation 9 of these Regulations.

(5) Energy charge component of the tariff of the generating station getting coal or lignite from the integrated mine shall be determined based on the input price of coal or lignite, as the case may be, from such integrated mines:

Provided that the generating company shall maintain the account of the integrated mine separately and submit the cost of the integrated mine, in accordance with these regulations, duly certified by the Auditor.

(6) Tariff of generating station using coal washery rejects developed by Central or State PSUs or Joint Venture between a Government Company and a company other than a Government Company

shall be determined in accordance with these regulations:

Provided that in case of a Joint Venture between a Government Company and a Company other than the Government Company, the shareholding of the company other than the Government Company either directly or through any of its subsidiary companies or associate companies shall not exceed 26% of the paid up share capital:

Provided further that the energy charge component of the tariff of such generating station or unit thereof shall be determined based on the fixed cost and the variable cost of the coal washery project:

Provided also that the Gross Calorific Value of coal rejects shall be measured jointly by the generating company and the beneficiaries.

(7) In the case of multi-purpose hydro schemes, with irrigation, flood control and power components, the capital cost chargeable to the power component of the scheme only shall be considered for the determination of tariff.

(8) If an existing transmission project is granted a licence under section 14 of the Act, read with clause (c) of Regulation 6 of the Central Electricity Regulatory Commission (Terms and Conditions of grant of Transmission Licence for Inter-State Transmission of electricity and related matters) Regulations, 2009, the tariff of such project shall be applicable from the date of grant of transmission licence or from the date as indicated in the transmission licence, as the case may be. In such cases, the applicant shall file a petition as per Annexure-I (Part III) to these regulations, clearly demarcating the assets which form part of the business of generation and transmission, the value of such assets, source of funding and other relevant details after adjusting the cumulative depreciation and loan repayment, duly certified by the Auditor.

9. **Application for determination of tariff**

(1) The generating company or the transmission licensee may make an application for determination of tariff for a new generating station or unit thereof or transmission system or element thereof in accordance with these Regulations within 90 days from the actual date of commercial operation:

Provided that where the transmission system comprises various elements, the transmission licensee shall file an application for determination of tariff for a group of elements on incurring of expenditure of not less than Rs. 100 Crore or 70% of the cost envisaged in the Investment Approval, whichever is lower, as on the actual date of commercial operation:

Provided further that transmission licensees shall combine the elements of the transmission system in the Investment Approval, which are attaining commissioning during a particular month and declare a single COD for the combined Asset, which shall be the date of the COD of the last element commissioned in that month and such Asset shall be treated as single Asset for tariff purposes.

Provided further that the generating company or the transmission licensee, as the case may be, shall submit an Auditor Certificate and, in case of non-availability of an Auditor Certificate, a Management Certificate duly signed by an authorised person, not below the level of Director of the company indicating the estimated capital cost incurred as on the date of commercial operation and the projected additional capital expenditure for respective years of the tariff period 2024-29:

Provided that for a new generating station or unit thereof or transmission system or element thereof, the applicant, through a specific prayer in its application filed under Regulation 9(1) of these regulations, may plead for an interim tariff, and the Commission may consider granting interim tariff from the date of commercial operation after the first hearing of the application and where such

interim tariff of the generating station or unit thereof and the transmission system or element thereof including communication system has been determined based on Management Certificate, the generating company or the transmission licensee shall submit the Auditor Certificate not later than 90 days from the date of Commercial Operation:

Provided also that the generating company shall file an application for determination of supplementary tariff for the emission control system installed in coal or lignite based thermal generating station in accordance with these regulations not later than 90 days from the date of start of operation of such emission control system.

(2) In case of an existing generating station or unit thereof, or transmission system or element thereof, the application shall be made by the generating company or the transmission licensee, as the case may be, by 30.11.2024 , based on admitted capital cost including additional capital expenditure already admitted and incurred up to 31.3.2024 (either based on actual or projected additional capital expenditure) and estimated additional capital expenditure for the respective years of the tariff period 2024-29 along with the true up petition for the period 2019-24 in accordance with the CERC (Terms and Conditions of Tariff) Regulations, 2019.

(3) In case an emission control system is required to be installed in the existing generating station or unit thereof to meet the revised emission standards, an application shall be made for the determination of supplementary tariff (capacity charges or energy charge or both) based on the actual capital expenditure duly certified by the Auditor.

(4) Where the generating company has the arrangement for the supply of coal or lignite from an integrated mine(s) to one or more of its generating stations, the generating company shall file a petition for determination of the input price of coal or lignite for determining the energy charge along with the tariff petitions for one or more generating stations in accordance with the provision of

Chapter 9 of these regulations:

Provided that a generating company with integrated mine(s) shall file a petition for determination of the input price of coal or lignite from the integrated mine(s) not later than 90 days from the date of actual commercial operation of the integrated mine(s) in accordance with these regulations.

(5) In case the generating company or the transmission licensee files the application as per the timeline specified in sub-clause (1) to (4) of this Regulation, carrying cost at the simple interest rate of 1-year SBI MCLR plus 100 basis points shall be allowed from the date of commercial operation of the project:

Provided that in case the generating company or the transmission licensee delays in filing of application as per the timeline specified in sub-clause (1) to (4) of this Regulation, carrying cost shall be allowed to the generating company or the transmission licensee from the date of filing of the application as per Regulation 10(6) and 10(7) of these regulations.

10. **Determination of tariff**

(1) The generating company for a specific generating station or unit thereof or for an integrated mine or the transmission licensee for a transmission system or element thereof, as the case may be, shall file a petition before the Commission as per **Annexure-I** to these regulations containing the details of underlying assumptions for the capital expenditure and additional capital expenditure incurred and projected to be incurred, wherever applicable.

(2) If the petition is deficient in any respect as required under **Annexure-I** to these regulations, the application shall be returned to the generating company or transmission licensee, as the case may be, for resubmission of the petition within one month of the date of return of the application after rectifying the deficiencies as may be pointed out by the staff of the Commission.

(3) If the information furnished in the petition is in accordance with these regulations, the Commission may consider granting an interim tariff of up to ninety per cent (90%) of the tariff claimed in the case of a new generating station or unit thereof or transmission system, or element thereof during the first hearing of the application for billing purposes till the final tariff is determined by the Commission:

Provided that in case the final tariff determined by the Commission is lower than the interim tariff by more than 10%, the generating company or transmission licensee shall return the excess amount recovered from the beneficiaries or long term customers, as the case may be, with simple interest at 1.20 times of the rate worked out on the basis of 1 year SBI MCLR plus 100 basis points prevailing as on 1st April of the financial year in which such excess recovery was made.

(4) In the case of the existing projects, the generating company or the transmission licensee, as the case may be, shall continue to bill the beneficiaries or the long term customers at the capacity charges or the transmission charges, respectively, as approved by the Commission and applicable as on 31.3.2024 for the period starting from 1.4.2024 till approval of final capacity charges or transmission charges by the Commission in accordance with these regulations:

Provided that the billing for energy charges w.e.f. 1.4.2024 shall be as per the operational norms specified in these regulations.

(5) The Commission shall grant the final tariff in the case of existing and new projects after considering the replies received from the respondents and suggestions and objections, if any, received from the general public and any other person permitted by the Commission, including consumers or consumer associations.

(6) Subject to Sub-Clause (7) below, the difference between the tariff determined in accordance with clauses (3) and (5) above and clauses (4) and (5) above, shall be recovered from or refunded to,

the beneficiaries or the long term customers, as the case may be, with simple interest at the rate equal to the 1 year SBI MCLR plus 100 basis points prevailing as on 1st April of the respective year of the tariff period, in a maximum of six equal monthly instalments;

Provided that the bills to recover or refund shall be raised by the generating company or the transmission licensees within 45 days from the issuance of the Order.

Provided further that such interest, including that determined as per sub-clause (7) of this regulation shall be payable till the date of issuance of the Order and no interest shall be allowed or levied during the period of six-monthly instalments.

Provided further that in case where money is to be refunded and there is a delay in the raising of bills by the generating company or transmission licensees beyond 45 days from the issuance of the Order, it shall attract a late payment surcharge as applicable in accordance with these regulations.

(7) Where the capital cost approved by the Commission on the basis of projected additional capital expenditure exceeds the actual true up additional capital expenditure incurred on a year to year basis by more than 10%, the generating company or the transmission licensee shall refund to the beneficiaries or the long term customers as the case may be, the tariff recovered corresponding to the additional capital expenditure not incurred, as approved by the Commission, along with simple interest at 1.20 times of the rate worked out on the basis of 1 year SBI MCLR plus 100 basis points as prevalent on 1st April of the respective year.

11. **In-principle approval in specific circumstances:** The generating company for a specific generating station or for an integrated mine or the transmission licensee undertaking any additional capitalization on account of change in law events or force majeure conditions may file petition for in-principle approval for incurring such expenditure after prior notice to the beneficiaries or the long term customers, as the case may be, along with underlying assumptions, estimates and justification

for such expenditure if the estimated expenditure exceeds 10% of the admitted capital cost of the project or Rs.100 Crore, whichever is lower.

12. **Truing up of tariff for the period 2019-24:** The tariff of the generating stations, integrated mines, and transmission systems for the period 2019-24 shall be trued up in accordance with the provisions of Regulation 13 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 along with the tariff petition for the period 2024-29. The capital cost admitted as on 31.3.2024 based on the truing up shall form the basis of the opening capital cost as on 1.4.2024 for the tariff determination for the period 2024-29.

13. **Truing up of tariff for the period 2024-29:** (1) The Commission shall carry out the truing up exercise for the period 2024-29, along with the tariff petition filed for the next tariff period, for the following:

- a) the capital expenditure, including additional capital expenditure incurred up to 31.03.2029 as admitted by the Commission after prudence checks at the time of truing up;
- b) the capital expenditure, including additional capital expenditure incurred up to 31.03.2029 on account of Force Majeure and Change in Law as admitted by the Commission;
- c) the additional capital expenditure incurred up to 31.03.2029 on account of the Emission Control System as admitted by the Commission.

(2) The input price of coal or lignite from the integrated mine(s) of the generating station(s) for the tariff period 2024-29 shall be trued up for:

- a) The capital expenditure, including additional capital expenditure incurred up to 31.03.2029 as admitted by the Commission after prudence check at the time of truing up;
- b) the capital expenditure, including additional capital expenditure incurred up to 31.03.2029

on account of Force Majeure and Change in Law, as admitted by the Commission.

c) The Operation and Maintenance expenses in accordance with provisions of Regulation 46 of these Regulations.

(3) The generating company for a specific generating station or for an integrated mine, or the transmission licensee, as the case may be, shall make an application, as per Annexure -I to these regulations, for carrying out true up exercise in respect of the generating station or a unit thereof or the transmission system or an element thereof by 30.11.2029.

(4) The generating company for a specific generating station or for an integrated mine, or the transmission licensee, as the case may be, may make an application for interim true up of tariff in the year 2026-27 if the annual fixed cost increases by more than 20% over the annual fixed cost as determined by the Commission for the respective years of the tariff period:

Provided that if the actual additional capital expenditure falls short of the projected additional capital expenditure allowed under provisions of Chapter 7 of these regulations or reduction of tariff on account of change in the rate of interest on loan or income tax rate, the generating company or the transmission licensee, as the case may be, shall not be required to file any interim true up petition for this purpose and shall refund to the beneficiaries or the long term customers, as the case may be, the excess tariff recovered corresponding to the projected additional capital expenditure not incurred or on account of change in the rate of interest on loan or income tax rate, in the same manner as specified in Regulation 10(6) and 10(7) of these regulations, as the case may be under intimation to the Commission:

Provided further that the generating company or the transmission licensee shall submit the complete details along with the calculations of the refunds made to the beneficiaries or the long term customers, as the case may be, at the time of true up.

(5) After truing up, if the tariff or the input price already recovered exceeds or falls short of the tariff or the input price approved by the Commission under these regulations, the generating company or the transmission licensee, shall refund to or recover from, the beneficiaries or the long term customers, as the case may be, the excess or the shortfall amount, in accordance with Regulation 10(6) and 10(7) of these regulations as may be applicable.

Provided that in case of input price of coal and lignite, the generating company shall refund such excess amount or recover the shortfall amount from the beneficiaries based on scheduled energy.

CHAPTER- 4

TARIFF STRUCTURE

14. **Components of Tariff:** (1) The tariff for the supply of electricity from a thermal generating station shall comprise two parts, namely, capacity charge (for recovery of annual fixed cost consisting of the components as specified in Regulation 15 of these regulations) and energy charge (for recovery of primary and secondary fuel cost and cost of limestone and any other reagent, where applicable as specified in Regulation 16 of these regulations).

(2) The Supplementary tariff consisting of supplementary capacity charges and supplementary energy charges, on account of the implementation of revised emission standards in existing generating stations or new generating stations, as the case may be, shall be determined by the Commission separately.

(3) The capacity charge and energy charge of a generating station shall be determined in accordance with the provisions of Chapter 11 of these regulations. The input price of coal or lignite from the integrated mine, as determined in accordance with the provisions of Chapter 9 of these regulations, shall form part of the energy charge of the generating station.

(4) The tariff for the supply of electricity from a hydro generating station shall comprise a capacity charge and an energy charge to be derived in the manner specified in Regulation 65 or 66 of these regulations, as may be applicable, for recovery of the annual fixed cost consisting of the components referred to in Regulation 15 of these regulations.

(5) The tariff for transmission of electricity on inter-State transmission system shall comprise transmission charges for recovery of annual fixed cost consisting of the components specified in Regulation 15 of these regulations.

15. **Capacity Charges:** (1) The capacity charges shall be derived on the basis of annual fixed costs. The Annual Fixed Cost (AFC) of a generating station or a transmission system, including a communication system, shall consist of the following components:

- (a) Return on equity;
- (b) Interest on loan capital;
- (c) Depreciation;
- (d) Interest on working capital; and
- (e) Operation and maintenance expenses:

Provided that Special Allowance in lieu of R&M, where opted in accordance with Regulation 28 of these regulations, shall be recovered separately and shall not be considered for computation of working capital.

(2) **Supplementary Capacity Charges:** Supplementary capacity charges shall be derived on the basis of the Annual Fixed Cost for emission control system (AFCe). The Annual Fixed Cost for the emission control system shall consist of the components as listed in Sub-clauses (a) to (e) of Clause (1) of this Regulation.

16. **Energy Charges:** Energy charges shall be derived on the basis of the landed fuel cost (LFC) of a generating station (excluding hydro) and shall consist of the following costs:

- (a) Landed Fuel Cost of primary fuel;
- (b) Cost of secondary fuel oil consumption; and
- (c) Cost of limestone or any other reagent, as applicable:

Provided that any refund of taxes and duties along with any amount received on account of

penalties from the fuel supplier shall be adjusted in fuel cost:

Provided further that the supplementary energy charges, if any, on account of meeting the revised emission standards in case of a thermal generating station shall be determined separately by the Commission as per Regulation 64 of these regulations.

Provided also that in case of supply of coal or lignite from the integrated mine(s), the landed cost of primary fuel shall be based on the input price of coal or lignite, as the case may be, as computed in accordance with these regulations.

17. Special Provisions for Tariff for Thermal Generating Station which have Completed 25 Years of Operation from Date of Commercial Operation: In respect of a thermal generating station that has completed 25 years of operation from the date of commercial operation and the power purchase agreement for supply of electricity to beneficiaries from such generating station is not extended, the generating company and the beneficiary may agree on an arrangement, including provisions for target availability and incentive, where in addition to the energy charge, capacity charges determined under these regulations shall also be recovered based on scheduled generation.

CHAPTER – 5

CAPITAL STRUCTURE

18. **Debt-Equity Ratio:** (1) For new projects, the debt-equity ratio of 70:30 as on date of commercial operation shall be considered. If the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall be treated as normative loan:

Provided that:

- i. where equity actually deployed is less than 30% of the capital cost, actual equity shall be considered for determination of tariff:
- ii. the equity invested in foreign currency shall be designated in Indian rupees on the date of each investment:
- iii. any grant obtained for the execution of the project shall not be considered as a part of capital structure for the purpose of debt: equity ratio.

Explanation-The premium, if any, raised by the generating company or the transmission licensee, as the case may be, while issuing share capital and investment of internal resources created out of its free reserve for the funding of the project, shall be reckoned as paid up capital for the purpose of computing return on equity, only if such premium amount and internal resources are actually utilised for meeting the capital expenditure of the generating station or the transmission system.

(2) The generating company or the transmission licensee, as the case may be, shall submit the resolution of the Board of the company or the approval of the competent authority in other cases regarding the infusion of funds from internal resources in support of the utilization made or proposed to be made to meet the capital expenditure of the generating station or the transmission system including communication system, as the case may be.

(3) In the case of the generating station and the transmission system, including the communication system declared under commercial operation prior to 1.4.2024, the debt-equity ratio allowed by the Commission for the determination of tariff for the period ending 31.3.2024 shall be considered:

Provided that in the case of a generating station or a transmission system, including a communication system which has completed its useful life as on 1.4.2024 or is completing its useful life during the 2024-29 tariff period, if the equity actually deployed is more than 30% of the capital cost, equity in excess of 30% shall not be taken into account for tariff computation;

Provided further that in case of projects owned by Damodar Valley Corporation, the debt: equity ratio shall be governed as per sub-clause (ii) of clause (2) of Regulation 96 of these regulations.

(4) In the case of the generating station and the transmission system, including communication system declared under commercial operation prior to 1.4.2024, but where debt: equity ratio has not been determined by the Commission for determination of tariff for the period ending 31.3.2024, the Commission shall approve the debt: equity ratio in accordance with clause (1) of this Regulation.

(5) Any expenditure incurred or projected to be incurred on or after 1.4.2024 as may be admitted by the Commission as additional capital expenditure for determination of tariff, and renovation and modernisation expenditure for life extension shall be serviced in the manner specified in clause (1) of this Regulation.

(6) Any expenditure incurred for the emission control system during the tariff period as may be admitted by the Commission as additional capital expenditure for determination of supplementary tariff, shall be serviced in the manner specified in clause (1) of this Regulation.

CHAPTER-6

COMPUTATION OF CAPITAL COST

19. **Capital Cost:** (1) The Capital cost of the generating station or the transmission system, as the case may be, as determined by the Commission after prudence checks in accordance with these regulations shall form the basis for the determination of tariff for existing and new projects.

(2) The Capital Cost of a new project shall include the following:

- (a) The expenditure incurred or projected to be incurred up to the date of commercial operation of the project;
- (b) Interest during construction and financing charges, on the loans (i) being equal to 70% of the funds deployed and, in the event actual equity is in excess of 30% on a pari-passu basis, by treating the excess equity over and above 30% of the funds deployed as a normative loan, or (ii) being equal to the actual amount of the loan in the event of actual equity being less than 30% of the funds deployed;
- (c) Any gain or loss on account of foreign exchange risk variation pertaining to the loan amount availed during the construction period;
- (d) Interest during construction and incidental expenditure during construction as computed in accordance with these regulations;
- (e) Capitalised initial spares subject to the ceiling rates in accordance with these regulations;
- (f) Expenditure on account of additional capitalization and de-capitalisation determined in accordance with these regulations;
- (g) Adjustment of revenue due to the sale of infirm power in excess of fuel cost prior to the date of commercial operation as specified under Regulation 6 of these regulations;

- (h) Adjustment of revenue earned by the transmission licensee by using the assets before the date of commercial operation;
 - (i) Capital expenditure on account of ash disposal and utilization including handling and transportation facility;
 - (j) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal up to the receiving end of the generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;
 - (k) Capital expenditure on account of biomass handling equipment and facilities, for co-firing;
 - (l) Capital expenditure on account of emission control system necessary to meet the revised emission standards and sewage treatment plant;
 - (m) Expenditure on account of the fulfilment of any conditions for obtaining environment clearance for the project;
 - (n) Expenditure on account of change in law and force majeure events; and
 - (o) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under the Perform, Achieve and Trade (PAT) scheme of the Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries.
 - (p) Expenditure required to enable flexible operation of the generating station at lower loads.
- (3) The Capital cost of an existing project shall include the following:
- (a) Capital cost admitted by the Commission prior to 1.4.2024 duly trued up by excluding liability, if any, as on 1.4.2024;

- (b) Additional capitalization and de-capitalization for the respective year of tariff as determined in accordance with these regulations;
 - (c) Capital expenditure on account of renovation and modernisation as admitted by this Commission in accordance with these regulations;
 - (d) Capital expenditure on account of ash disposal and utilization, including handling and transportation facility;
 - (e) Capital expenditure incurred towards railway infrastructure and its augmentation for transportation of coal up to the receiving end of generating station but does not include the transportation cost and any other appurtenant cost paid to the railway;
 - (f) Capital cost incurred or projected to be incurred by a thermal generating station, on account of implementation of the norms under the Perform, Achieve and Trade (PAT) scheme of the Government of India shall be considered by the Commission subject to sharing of benefits accrued under the PAT scheme with the beneficiaries;
 - (g) Expenditure required to enable flexible operation of the generating station at lower loads;
 - (h) Capital expenditure on account of biomass handling equipment and facilities, for co-firing; and
 - (i) Expenditure on account of change in law and force majeure events;
- (4) The capital cost in case of existing or new hydro generating stations shall also include:
- (a) cost of approved rehabilitation and resettlement (R&R) plan of the project in conformity with National R&R Policy and R&R package as approved; and
 - (b) cost of the developer's 10% contribution towards the Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) project in

the affected area.

- (c) For uninterrupted and timely development of Hydro projects, expenditure incurred towards developing local infrastructure in the vicinity of the power plant not exceeding Rs. 10 lakh/MW shall be considered as part of the Capital cost, and in case the same work is covered under budgetary support provided by the Government of India, the funding of such works shall be adjusted on receipt of such funds.

Provided that such funds shall be allowed only if the funds are spent through Indian Governmental Instrumentality;

- (5) For Projects acquired through NCLT proceedings under the Insolvency and Bankruptcy Code, 2016, the following shall be considered while approving Capital Costs for the determination of tariff:

- (a) For projects already under operation, historical GFA of the project acquired or the acquisition cost paid by the generating company, whichever is lower;
- (b) For considering the historical GFA for the purpose of Sub-Clause (a) above, the same shall be the capital cost approved by the appropriate commission till the date of acquisition;

Provided that in the absence of any prior approved capital cost of an Appropriate Commission, the Commission shall consider the same on the basis of audited accounts subject to prudence check;

Provided further, that in case additional capital expenditure is required post acquisition of an already operational project, the same shall be considered under the provisions of Chapter 7 of these Regulations;

- (c) In case any under construction project is acquired that has yet to achieve commercial

operation, the acquisition cost or the actual audited cost incurred till the date of acquisition, whichever is lower, shall be considered and;

- (d) any additional capital expenditure incurred post acquisition of such project up to the date of commercial operation of the project in line with the investment approval of the Board of Directors of the generating company or the transmission licensees shall also be considered on a case to case basis subject to prudence check.

Provided that post commercial operation, additional capital expenditure shall be allowed under the provisions of Chapter 7 of these Regulations.

- (6) The following shall be excluded from the capital cost of the existing and new projects:

- (a) The assets forming part of the project but not in use, as declared in the tariff petition;
- (b) De-capitalised Assets after the date of commercial operation on account of obsolescence;
- (c) De-capitalised Assets on account of upgradation or shifting from one project to another project:

Provided that in case such an asset is recommended for further utilisation by the Regional Power Committee in consultation with CTU, such asset shall be de-capitalised from the original project only after its redeployment;

Provided further that unless shifting of an asset from one project to another is of a permanent nature, there shall be no de-capitalization of the concerned assets.

- (d) In the case of hydro generating stations, any expenditure incurred or committed to be incurred by a project developer for getting the project site allotted by the State Government by following a transparent process;
- (e) Proportionate cost of land of the existing generation or transmission project, as the case

may be, which is being used for generating power from a generating station based on renewable energy as may be permitted by the Commission; and

- (f) Any grant received from the Central or State Government or any statutory body or authority for the execution of the project that does not carry any liability of repayment.

20. **Prudence Check of Capital Cost:** The following principles shall be adopted for prudence check of capital cost of the existing or new projects:

- (1) In the case of the thermal generating station and the transmission system, the prudence check of capital cost shall include scrutiny of the capital expenditure, in light of the capital cost of similar projects based on past historical data, wherever available, reasonableness of the financing plan, interest during construction, incidental expenditure during construction, use of efficient technology, cost over-run and time over-run, procurement of equipment and materials through competitive bidding as given in Regulation 101 below and such other matters as may be considered appropriate by the Commission:

Provided that, while carrying out the prudence check, the Commission shall also examine whether the generating company or transmission licensee, as the case may be, has been prudent in its judgments and decisions in the execution of the project.

- (2) The Commission may, for the purpose of vetting of capital cost of hydro generating stations, appoint an independent agency or an expert body:

Provided that the Designated Independent Agency already appointed under the guidelines issued by the Commission under Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2009 shall continue till completion of the assigned project.

- (3) Where the power purchase agreement entered into between the generating company and the

beneficiaries provides for the ceiling of actual capital expenditure, the Commission shall take into consideration such ceiling for prudence check.

(4) The generating company or the transmission licensee, as the case may be, shall furnish the capital cost for the execution of the existing and new projects as per Annexure-I to these regulations along with tariff petition for the purpose of creating a database of benchmark capital cost of various components.

21. Interest During Construction (IDC) and Incidental Expenditure during Construction (IEDC)

(1) Interest during construction (IDC) shall be computed considering the actual loan and normative loan after taking into account the prudent phasing of funds up to actual COD:

Provided that IDC on a normative loan corresponding to excess equity over 30% of funds deployed shall be allowed only in cases where the actual infusion of equity on a pari-passu basis is more than 30% of total funds deployed and shall be computed on a quarterly basis.

Provided further that in case IDC on normative loan is to be allowed prior to infusion of actual loan, rate of interest for computing such IDC shall be equal to 1-year SBI MCLR as prevailing on 1st April of the respective year.

Provided further that IDC on normative loan, post infusion of actual loan shall be computed based on WAROI for that respective quarter.

(2) Incidental expenditure during construction (IEDC) shall be computed from the zero date, taking into account pre-operative expenses up to actual COD:

Provided that any revenue earned during the construction period up to actual COD on account of interest on deposits or advances or any other receipts shall be taken into account for reduction in

incidental expenditure during construction.

(3) In case of additional costs on account of IDC and IEDC due to delay in achieving the COD, the generating company for a specific generating station or for an integrated mine or the transmission licensee, as the case may be, shall be required to furnish detailed justifications with supporting documents for such delay, including prudent phasing of funds in the case of IDC and details of IEDC during the period of delay and liquidated damages recovered or recoverable corresponding to the delay.

(4) If the delay in achieving the COD is not attributable to the generating company or the transmission licensee, such additional IDC and IEDC may be allowed after a prudence check, and the liquidated damages, if any, recovered from the contractor or supplier or agency shall be adjusted to the capital cost of the generating station or the transmission system, as the case may be.

(5) If the delay in achieving the COD is attributable either in entirety or in part to the generating company or the transmission licensee or its contractor or supplier or agency, in such cases, IDC and IEDC due to such delay may be disallowed after a prudence check, either in entirety or on a pro-rata basis corresponding to the period of delay not condoned vis-à-vis total implementation period, and the liquidated damages, if any, recovered from the contractor or supplier or agency shall be retained by the generating company or the transmission licensee, in the same proportion of delay not condoned vis-à-vis total implementation period.

[Note: For e.g.: In case a project was scheduled to be completed in 48 months and is actually completed in 60 months. Out of 12 months of time overrun, if only 6 months of time overrun is condoned, the allowable IDC and IEDC shall be computed by considering the total IDC and IEDC incurred for 60 months and allowed in the proportion of 54 months over 60 month period.]

Provided that in cases where delay in achieving COD is beyond six months from SCOD on account of delay in obtaining approval of any of the following activities namely, i) forest clearance, ii) NHAI clearance, or iii) Railways permission, a time overrun maximum up to 95% shall be allowed after prudence check.

(6) For the purpose of Clauses (4) and (5) of this Regulation, IDC on actual loan and normative loan shall be considered in accordance with the normative debt-equity ratio specified under clause (1) of Regulation 18 of these regulations.

22. **Controllable and Uncontrollable factors:** The following shall be considered as controllable and uncontrollable factors for deciding time overrun, cost escalation, IDC and IEDC of the new projects:

(1) The "controllable factors" shall include but shall not be limited to the following:

- a. Efficiency in the implementation of the new projects not involving an approved change in scope of such new projects or change in statutory levies or change in law or force majeure events; and
- b. Delay in execution of the new projects on account of contractor or supplier or agency of the generating company or transmission licensee.

(2) The "uncontrollable factors" shall include but shall not be limited to the following:

- a. Force Majeure events;
- b. Change in Law; and
- c. Land acquisition-except where the delay is attributable to the generating company or the transmission licensee.

23. **Initial Spares:** Initial spares shall be capitalised as a percentage of the Plant and Machinery

cost, subject to the following ceiling norms:

(a)	Coal-based/lignite-fired thermal generating stations -	4.0%
(b)	Gas Turbine/ Combined Cycle thermal generating- Stations	4.0%
(c)	Hydro generating stations including pumped storage - hydro generating station	4.0%
(d)	Transmission system	
(i)	Transmission line	- 1.00%
(ii)	Transmission Sub-station	
	-Green Field	- 4.00%
	-Brown Field	- 6.00%
(iii)	Series Compensation devices and HVDC Station	- 4.00%
(iv)	Gas Insulated Sub-station (GIS)	-
	-Green Field	- 5.00%
	-Brown Field	- 7.00%
(v)	Communication system	- 3.50%
(vi)	Static Synchronous Compensator	- 6.00%

Provided that:

- i. Plant and Machinery cost shall be considered as the original project cost excluding IDC, IEDC, Land Cost and Cost of Civil Works. The generating company and the transmission licensee, for the purpose of estimating Plant and Machinery Costs, shall submit the break-up of head-wise IDC and IEDC in its tariff application;
- ii. where the generating station has any transmission equipment forming part of the generation project, the ceiling norms for initial spares for such equipment shall be as per the ceiling norms specified for the transmission system under these regulations.

- iii. where the emission control system is installed, the norms of initial spares specified in this Regulation for coal or lignite based thermal generating stations, as the case may be, shall apply.
- iv. Initial spares of high voltage underground cables used for the transmission system shall be allowed based on actuals on a case-to-case basis after carrying out due a prudence check.

CHAPTER – 7

COMPUTATION OF ADDITIONAL CAPITAL EXPENDITURE

24. Additional Capitalisation within the original scope and up to the cut-off date

(1) The additional capital expenditure in respect of a new project or an existing project incurred or projected to be incurred, on the following counts within the original scope of work, after the date of commercial operation and up to the cut-off date may be admitted by the Commission, subject to prudence check:

- (a) Payment made towards admitted liabilities for works executed up to the cut-off date;
- (b) Works deferred for execution;
- (c) Procurement of initial capital spares within the original scope of work, in accordance with the provisions of Regulation 23 of these regulations;
- (d) Payment against the award of arbitration or for compliance with the directions or order of any statutory authority or order or decree of any court of law;
- (e) Change in law or compliance with any existing law which is not provided for in the original scope of work;
- (f) For uninterrupted and timely development of Hydro projects, expenditure incurred towards developing local infrastructure in the vicinity of the power plant not exceeding Rs. 10 lakh/MW shall be considered as part of capital cost and in case the same work is covered under budgetary support provided by Government of India, the funding of such works shall be adjusted on receipt of such funds;

Provided that such expenditure shall be allowed only if the expenditure is incurred through Indian Governmental Instrumentality; and

- (g) Force Majeure events.

Provided that in case of any replacement of the assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization.

- (2) The generating company or the transmission licensee, as the case may be shall submit the details of works asset wise/work wise included in the original scope of work along with estimates of expenditure, liabilities recognized to be payable at a future date and the works deferred for execution.

25. Additional Capitalisation within the original scope and after the cut-off date:

- (1) The additional capital expenditure incurred or projected to be incurred in respect of an existing project or a new project on the following counts within the original scope of work and after the cut-off date may be admitted by the Commission, subject to prudence check:

- (a) Payment made against award of arbitration or for compliance with the directions or order of any statutory authority, or order or decree of any court of law;
- (b) Change in law or compliance with any existing law which is not provided for in the original scope of work;
- (c) Deferred works relating to ash pond or ash handling system or raising of ash dyke in the original scope of work;
- (d) Payment made towards liability admitted for works within the original scope executed prior to the cut-off date;
- (e) Force Majeure events;
- (f) Works within original scope executed after the cut-off date and admitted by the Commission, to the extent of actual payments made; and

(2) In case of replacement of assets deployed under the original scope of the existing project after the cut-off date, the additional capitalization may be admitted by the Commission after making necessary adjustments in the gross fixed assets and the cumulative depreciation, subject to prudence check on the following grounds:

- (a) Assets whose useful life is not commensurate with the useful life of the project and such assets have been fully depreciated in accordance with the provisions of these regulations;
- (b) The replacement of the asset or equipment is necessary on account of a change in law or Force Majeure conditions;
- (c) The replacement of such asset or equipment is necessary on account of obsolescence of technology; and
- (d) The replacement of such asset or equipment has otherwise been allowed by the Commission.
- (e) The additional expenditure, excluding recurring expenses covered in O&M expenses, involved in relation to the renewal of lease of lease hold land on case to case basis.

Provided that any claim of additional capitalisation with respect to the replacement of assets under the original scope and on account of obsolescence of technology, less than Rs. 20 lakhs shall not be considered as part of Capital cost and shall be met through normative O&M expenses.

26. Additional Capitalisation beyond the original scope

(1) The capital expenditure, in respect of the existing generating station or the transmission system, including the communication system, incurred or projected to be incurred on the following counts beyond the original scope, may be admitted by the Commission, subject to prudence check:

- (a) Payment made against award of arbitration or for compliance of order or directions of any statutory authority, or order or decree of any court of law;
- (b) Change in law or compliance of any existing law;
- (c) Force Majeure events;
- (d) Need for higher security and safety of the plant as advised or directed by appropriate Indian Government Instrumentality or statutory authorities responsible for national or internal security;
- (e) Deferred works relating to ash pond or ash handling system or raising of ash dyke in addition to the original scope of work, on case to case basis:

Provided also that if any expenditure has been claimed under Renovation and Modernisation (R&M) or repairs and maintenance under O&M expenses, the same shall not be claimed under this Regulation;

- (f) Usage of water from the sewage treatment plant in the thermal generating station.
- (g) Works required towards biomass handling system to enable biomass co-firing and towards enabling flexible operation of the generating station as may be required.
- (h) Works pertaining to Railway Infrastructure and its augmentation for transportation of coal up to the receiving end of the generating station (excluding any transportation cost and any other appurtenant cost paid to railways) that are not covered under Regulation 24, 25 and 27, but shall result in better fuel management and can lead to a reduction in operation costs, or shall have other tangible benefits:

Provided that the generating company shall have to mandatorily seek prior approval of the Commission before implementing such works based on a detailed cost-

benefit analysis of such schemes;

- (i) Any additional capital expenditure which has become necessary for efficient operation of generating station or transmission system as the case may be, including the works required towards projects acquired through NCLT process. The claim shall be substantiated with the technical justification and cost benefit analysis.
- (2) Any claim of additional capitalisation less than Rs. 20 lakhs shall not be considered under Clause (1) of this regulation and shall be met through normative O&M expenses.
- (3) In case of de-capitalisation of assets of a generating company or the transmission licensee, as the case may be, the original cost of such asset as on the date of de-capitalisation shall be deducted from the value of gross fixed asset and corresponding loan as well as equity shall be deducted from outstanding loan and the equity respectively in the year such de-capitalisation takes place with corresponding adjustments in cumulative depreciation and cumulative repayment of loan, duly taking into consideration the year in which it was capitalised.

Provided that in cases where an asset forming part of a scheme is de-capitalised and wherein the historical value of such asset is not available, the value of de-capitalisation shall be computed by de-escalating the value of the new asset by 5% per year until the year of capitalisation of the old asset subject to a minimum of 10% of the replacement cost of the asset.

27. Additional Capitalisation on account of Renovation and Modernisation

- (1) The generating company intending to undertake renovation and modernization (R&M) of the generating station or unit thereof for the purpose of extension of life beyond the originally recognised useful life for the purpose of tariff, shall file a petition before the Commission for approval of the proposal with a Detailed Project Report giving complete scope, justification, cost-benefit analysis, estimated life extension from a reference date, financial package, phasing of expenditure, schedule

of completion, reference price level, estimated completion cost including foreign exchange component, if any, and any other information considered to be relevant by the generating company or the transmission licensee:

Provided that the generating company making the applications for renovation and modernization (R&M) shall not be eligible for Special Allowance under Regulation 28 of these regulations;

Provided further that the generating company intending to undertake renovation and modernization (R&M) shall seek the consent of the beneficiaries for such renovation and modernization (R&M) and submit the response of the beneficiaries along with the Petition.

(2) Where the generating company, as the case may be, makes an application for approval of its proposal for renovation and modernisation (R&M), approval may be granted after due consideration of the reasonableness of the proposed cost estimates, financing plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, expected duration of life extension, the response of the beneficiaries or long term customers,-and such other factors as may be considered relevant by the Commission.

(3) In the case of gas/ liquid fuel based open/ combined cycle thermal generating station after 25 years of operation from the date of commercial operation, any additional capital expenditure which has become necessary for the renovation of gas turbines/ steam turbines or additional capital expenditure necessary due to obsolescence or the non-availability of spares for efficient operation of the stations may be allowed subject to a prudence check:

Provided that any expenditure included in the renovation and modernisation (R&M) on consumables and cost of components and spares, which is generally covered in the O&M expenses during the major overhaul of gas turbines shall be suitably deducted from the expenditure to be

allowed after prudence check.

(4) After completion of the renovation and modernisation (R&M), the generating company, as the case may be, shall file a petition for determination of tariff. Expenditure incurred or projected to be incurred and admitted by the Commission after a prudence check and after deducting the accumulated depreciation already recovered from the admitted project cost shall form the basis for the determination of tariff.

28. Special Allowance for Coal-based/Lignite fired Thermal Generating station

(1) In the case of coal-based/ lignite fired thermal generating stations, the generating company, instead of availing renovation and modernization (R&M), may opt to avail of a 'special allowance' in accordance with the norms specified in this Regulation, as compensation for meeting the requirement of expenses towards any additional capital expenditure covered in Regulations 24, 25, 26 and 27 except for capital expenditure arising out of change in law, award of arbitration or for compliance of the directions or order of any statutory authority, or order or decree of any court of law, and force majeure after completion of 25 years from the date of Commercial operation of the generating station or a unit thereof and in such an event, an upward revision of the capital cost shall not be allowed and the applicable operational norms shall not be relaxed but the Special Allowance shall be included in the annual fixed cost:

Provided that such option shall not be available for a generating station or unit thereof for which renovation and modernization has been undertaken and the expenditure has been admitted by the Commission before the commencement of these regulations, or for a generating station or unit which is in a depleted condition or operating under relaxed operational and performance norms;

Provided further that special allowance shall also be available for a generating station which has availed the Special Allowance during the tariff period 2009-14 or 2014-19 or 2019-24 as

applicable from the date of completion of the useful life.

(2) The Special Allowance admissible to a generating station shall be @ Rs 10.75 lakh per MW per year for the tariff period.

(3) In the event of a generating station availing of Special Allowance, the expenditure incurred upon or utilized from Special Allowance shall be maintained separately by the generating station, and details of the same shall be made available to the Commission as and when directed.

(4) The Special Allowance allowed under this Regulation shall be transferred to a separate fund for utilization towards Renovation & Modernisation and additional capitalisation as per clause (1) above, and the expenditure incurred or utilized from the special allowance shall be made available to the Commission as and when directed.

29. Additional Capitalization on account of Revised Emission Standards: (1) A generating company requiring to incur additional capital expenditure in the existing generating station for compliance with the revised emissions standards shall share its proposal with the beneficiaries and file a petition for undertaking such additional capitalization.

(2) The proposal under clause (1) above shall contain details of the proposed technology as specified by the Central Electricity Authority, scope of the work, phasing of expenditure, schedule of completion, estimated completion cost including foreign exchange component, if any, detailed computation of indicative impact on tariff to the beneficiaries, and any other information considered to be relevant by the generating company.

(3) Where the generating company makes an application for approval of additional capital expenditure on account of the implementation of revised emission standards, the Commission may grant approval after due consideration of the reasonableness of the cost estimates, financing

plan, schedule of completion, interest during construction, use of efficient technology, cost-benefit analysis, and such other factors as may be considered relevant by the Commission.

(4) After completion of the implementation of revised emission standards, the generating company shall file a petition for determination of tariff. Any expenditure incurred or projected to be incurred and admitted by the Commission after prudence check based on the reasonableness of the cost and impact on operational parameters shall form the basis of the determination of tariff.

(5) Un-discharged liability, if any, on account of the emission control system shall be allowed as additional capital expenditure during the year it is discharged, subject to prudence check.

CHAPTER-8

COMPUTATION OF ANNUAL FIXED COST

30. **Return on Equity:** (1) Return on equity shall be computed in rupee terms, on the equity base determined in accordance with Regulation 18 of these regulations.

(2) Return on equity for existing project shall be computed at the base rate of 15.50% for thermal generating station, transmission system including communication system and run-of-river hydro generating station and at the base rate of 16.50% for storage type hydro generating stations, pumped storage hydro generating stations and run-of-river generating station with pondage;

(3) Return on equity for new project achieving COD on or after 01.04.2024 shall be computed at the base rate of 15.00% for the transmission system, including the communication system, at the base rate of 15.50% for Thermal generating station and run-of-river hydro generating station and at the base rate of 17.00% for storage type hydro generating stations, pumped storage hydro generating stations and run-of-river generating station with pondage;

Provided that return on equity in respect of additional capitalization beyond the original scope, including additional capitalization on account of the emission control system, Change in Law, and Force Majeure shall be computed at the base rate of one-year marginal cost of lending rate (MCLR) of the State Bank of India plus 350 basis points as on 1st April of the year, subject to a ceiling of 14%;

Provided further that:

- i. In case of a new project, the rate of return on equity shall be reduced by 1.00% for such period as may be decided by the Commission if the generating station or transmission

system is found to be declared under commercial operation without commissioning of any of the Free Governor Mode Operation (FGMO), data telemetry, communication system up to load dispatch centre or protection system based on the report submitted by the respective RLDC;

ii. in case of an existing generating station, as and when any of the requirements under (i) above of this Regulation are found lacking based on the report submitted by the concerned RLDC, the rate of return on equity shall be reduced by 1.00% for the period for which the deficiency continues;

iii. in the case of a thermal generating station:

a) rate of return on equity shall be reduced by 0.25% in case of failure to achieve the ramp rate as specified under Regulation 45(9) of IEGC Regulations, 2023.

b) an additional rate of return on equity of 0.125% shall be allowed for every incremental ramp rate of 0.50% per minute achieved over and above the ramp rate specified by Central Electricity Authority, subject to the ceiling of additional rate of return on equity of 1.00%:

31. **Tax on Return on Equity.** (1) The rate of return on equity as allowed by the Commission under Regulation 30 of these regulations shall be grossed up with the effective tax rate of the respective financial year. The effective tax rate shall be calculated at the beginning of every financial year based on the estimated profit and tax to be paid estimated in line with the provisions of the relevant Finance Act applicable for that financial year to the concerned generating company or the transmission licensee by excluding the income of non-generation or non-transmission business, as the case may be, and the corresponding tax thereon.

Provided that in case a generating company or transmission licensee is paying

Minimum Alternate Tax (MAT) under Section 115JB of the Income Tax Act, 1961, the effective tax rate shall be the MAT rate, including surcharge and cess;

Provided further that in case a generating company or transmission licensee has opted for Section 115BAA, the effective tax rate shall be tax rate including surcharge and cess as specified under Section 115BAA of the Income Tax Act, 1961.

(2) The rate of return on equity shall be rounded off to three decimal places and shall be computed as per the formula given below:

$$\text{Rate of pre-tax return on equity} = \text{Base rate} / (1-t)$$

(3) The generating company or the transmission licensee, as the case may be, shall true up the effective tax rate for every financial year based on actual tax paid together with any additional tax demand, including interest thereon, duly adjusted for any refund of tax including interest received from the income tax authorities pertaining to the tariff period 2024-29 on actual gross income of any financial year. Further, any penalty arising on account of delay in deposit or short deposit of tax amount shall not be considered while computing the actual tax paid for the generating company or the transmission licensee, as the case may be.

Provided that in case a generating company or transmission licensee is paying Minimum Alternate Tax (MAT) under Section 115JB, the generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year with the applicable MAT rate including surcharge and cess.

Provided that in case a generating company or transmission licensee is paying tax under Section 115BAA, the generating company or the transmission licensee, as the case may be, shall true up the grossed up rate of return on equity at the end of every financial year with the tax rate including surcharge and cess as specified under Section 115BAA.

Provided that any under-recovery or over recovery of grossed up rate on return on equity after truing up, shall be recovered or refunded to beneficiaries or the long term customers, as the case may be, on a year to year basis.

32. **Interest on loan capital:** (1) The loans arrived at in the manner indicated in Regulation 18 of these regulations shall be considered gross normative loans for the calculation of interest on loans.

(2) The normative loan outstanding as on 1.4.2024 shall be worked out by deducting the cumulative repayment as admitted by the Commission up to 31.3.2024 from the gross normative loan.

(3) The repayment for each of the years of the tariff period 2024-29 shall be deemed to be equal to the depreciation allowed for the corresponding year or period. In case of de-capitalization of assets, the repayment shall be adjusted by taking into account cumulative repayment on a pro rata basis, and the adjustment should not exceed cumulative depreciation recovered up to the date of de-capitalisation of such asset.

(4) Notwithstanding any moratorium period availed of by the generating company or the transmission licensee, as the case may be, the repayment of the loan shall be considered from the first year of commercial operation of the project and shall be equal to the depreciation allowed for the year or part of the year.

(5) The rate of interest shall be the weighted average rate of interest calculated on the basis of the actual loan portfolio or allocated loan portfolio;

Provided that if there is no actual loan outstanding for a particular year but the normative loan is still outstanding, the last available weighted average rate of interest of the loan portfolio for the project shall be considered;

Provided further that if the generating station or the transmission system, as the case may be, does not have any actual loan, then the weighted average rate of interest of the loan portfolio of the generating company or the transmission licensee as a whole shall be considered.

Provided that the rate of interest on the loan for the installation of the emission control system commissioned subsequent to date of commercial operation of the generating station or unit thereof, shall be the weighted average rate of interest of the actual loan portfolio of the emission control system, and in the absence of the actual loan portfolio, the weighted average rate of interest of the generating company as a whole shall be considered, subject to a ceiling of 14%;

Provided further that if the generating company or the transmission licensee, as the case may be, does not have any actual loan, then the rate of interest for a loan shall be considered as 1-year MCLR of the State Bank of India as applicable as on April 01, of the relevant financial year.

(6) The interest on the loan shall be calculated on the normative average loan of the year by applying the weighted average rate of interest.

(7) The changes to the terms and conditions of the loans shall be reflected from the date of such re-financing.

33. **Depreciation:** (1) Depreciation shall be computed from the date of commercial operation of a generating station or unit thereof or a transmission system or element thereof including communication system. In the case of the tariff of all the units of a generating station or all elements of a transmission system including the communication system for which a single tariff needs to be determined, the depreciation shall be computed from the effective date of commercial operation of the generating station or the transmission system taking into consideration the depreciation of individual units:

Provided that the effective date of commercial operation shall be worked out by considering

the actual date of commercial operation and installed capacity of all the units of the generating station or capital cost of all elements of the transmission system, for which a single tariff needs to be determined.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission. In case of multiple units of a generating station or multiple elements of a transmission system, the weighted average life for the generating station or the transmission system shall be applied. Depreciation shall be chargeable from the first year of commercial operation. In the case of commercial operation of the asset for a part of the year, depreciation shall be charged on a pro rata basis.

(3) The salvage value of the asset shall be considered as 10%, and depreciation shall be allowed up to the maximum of 90% of the capital cost of the asset:

Provided that the salvage value for IT equipment and software shall be considered as NIL and 100% value of the assets shall be considered depreciable;

Provided further that in the case of hydro generating stations, the salvage value shall be as provided in the agreement, if any, signed by the developers with the State Government for the development of the generating station:

Provided also that the capital cost of the assets of the hydro generating station for the purpose of computation of depreciated value shall correspond to the percentage of the sale of electricity under long-term power purchase agreement at regulated tariff:

Provided also that any depreciation disallowed on account of lower availability of the generating station or unit or transmission system, as the case may be, shall not be allowed to be recovered at a later stage during the useful life or the extended life.

(4) Land other than the land held under lease and the land for a reservoir in case of a hydro generating station shall not be a depreciable asset and its cost shall be excluded from the capital cost while computing the depreciable value of the asset.

(5) Depreciation for Existing Projects shall be calculated annually based on the Straight Line Method and at rates specified in Appendix-I to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the effective date of commercial operation of the generating station or transmission system, as the case may be, shall be spread over the balance useful life of the assets.

Provided further that in the case of an existing hydro generating station, the generating company, with the consent of the beneficiaries, may charge depreciation at a rate lower than that specified in Appendix I and Appendix II to these Regulations to reduce front loading of tariff.

(6) Depreciation for New Projects shall be calculated annually based on the Straight Line Method and at rates specified in Appendix-II to these regulations for the assets of the generating station and transmission system:

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 15 years from the effective date of commercial operation of the generating station or the transmission system, as the case may be, shall be spread over the balance useful life of the assets.

Provided further that in the case of a new hydro generating stations, the generating company, with the consent of the beneficiaries, may charge depreciation at a rate lower than that specified in Appendix II to these Regulations to reduce front loading of tariff.

(7) In the case of the existing projects, the balance depreciable value as on 1.4.2024 shall be

worked out by deducting the cumulative depreciation as admitted to by the Commission up to 31.3.2024 from the gross depreciable value of the assets.

(8) The generating company or the transmission licensee, as the case may be, shall submit the details of capital expenditure proposed to be incurred during five years before the completion of useful life along with proper justification and proposed life extension. The Commission, based on prudence check of such submissions, shall approve the depreciation by equally spreading the depreciable value over the balance Operational Life of the generating station or unit thereof or fifteen years, whichever is lower, and in case of the transmission system shall equally spread the depreciable value over the balance useful life of the Asset or 10 years whichever is higher.

(9) In case of de-capitalization of assets in respect of generating station or unit thereof or transmission system or element thereof, the cumulative depreciation shall be adjusted by taking into account the depreciation recovered in tariff by the de-capitalised asset during its useful service.

(10) Where the emission control system is implemented within the original scope of the generating station and the date of commercial operation of the generating station or unit thereof and the date of operation of the emission control system are the same, depreciation of the generating station or unit thereof including the emission control system shall be computed in accordance with Clauses (1) to (9) of this Regulation.

(11) Depreciation of the emission control system of an existing generating station that is yet to complete its useful life or a new generating station or unit thereof where the date of operation of the emission control system is subsequent to the date of commercial operation of the generating station or unit thereof, shall be computed annually from the date of operation of such emission control system based on the straight line method at rates specified in Appendix- I to these

regulations;

Provided that the remaining depreciable value as on 31st March of the year closing after a period of 12 years from the date of operation of such emission control system shall be spread over the balance period of thirteen years or balance operational life of generating station, whichever is lower;

Provided also that in case the date of operation of the emission control system is after the 20th year of commercial operation of the generating station or unit thereof, but before the completion of the useful life of the generating station, the depreciation on emission control system (ECS) shall be computed annually from the date of operation of such ECS based on the straight line method, with a salvage value of 10% and the depreciable value shall be recovered till the operational life of the generating station.

(12) In case the date of operation of the emission control system is subsequent to the date of completion of the useful life of generating station commercial operation of the generating station or unit thereof, depreciation of ECS shall be computed annually from the date of operation of such emission control system based on the straight line method, with a salvage value of 10% and recovered over ten years or a period mutually agreed by the generating company and the beneficiaries, whichever is higher.

34. **Interest on Working Capital:** (1) The working capital shall cover:

(a) For Coal-based/lignite-fired thermal generating stations:

(i) Cost of coal or lignite, if applicable, for 10 days for pit-head generating stations and 20 days for non-pit-head generating stations for generation corresponding to the normative annual plant availability factor or the maximum coal/lignite stock storage capacity, whichever is lower;

- (ii) Limestone towards stock for 15 days corresponding to the normative annual plant availability.
 - (iii) Advance payment for 30 days towards the cost of coal or lignite and limestone for generation corresponding to the normative annual plant availability factor;
 - (iv) Cost of secondary fuel oil for two months for generation corresponding to the normative annual plant availability factor, and in case of use of more than one secondary fuel oil, cost of fuel oil stock for the main secondary fuel oil;
 - (v) Maintenance spares @ 20% of operation and maintenance expenses, including water charges and security expenses;
 - (vi) Receivables equivalent to 45 days of capacity charge and energy charge for the sale of electricity calculated on the normative annual plant availability factor; and
 - (vii) Operation and maintenance expenses, including water charges and security expenses, for one month.
- (b) For emission control system of coal or lignite based thermal generating stations:
- (i) Cost of limestone or reagent towards stock for 20 days corresponding to the normative annual plant availability factor;
 - (ii) Advance payment for 30 days towards the cost of reagent for generation corresponding to the normative annual plant availability factor;
 - (iii) Receivables equivalent to 45 days of supplementary capacity charge and supplementary energy charge for the sale of electricity calculated on the normative annual plant availability factor;
 - (iv) Operation and maintenance expenses in respect of the emission control system for

one month;

(v) Maintenance spares @20% of operation and maintenance expenses in respect of emission control system.

(c) For Open-cycle Gas Turbine/Combined Cycle thermal generating stations:

(i) Fuel cost for 15 days corresponding to the normative annual plant availability factor, duly taking into account the mode of operation of the generating station on gas fuel and liquid fuel;

(ii) Liquid fuel stock for 15 days corresponding to the normative annual plant availability factor, and in case of use of more than one liquid fuel, cost of main liquid fuel duly taking into account mode of operation of the generating stations of gas fuel and liquid fuel;

Provided that the above shall only be allowed to generating stations that have facilities to store liquid fuel.

(iii) Maintenance spares @ 30% of operation and maintenance expenses, including water charges and security expenses;

(iv) Receivables equivalent to 45 days of capacity charge and energy charge for the sale of electricity calculated on the normative plant availability factor, duly taking into account the mode of operation of the generating station on gas fuel and liquid fuel;

(v) Operation and maintenance expenses, including water charges and security expenses, for one month.

(d) For Hydro generating station (including Pumped Storage Hydro generating station) and Transmission System:

(i) Receivables equivalent to 45 days of annual fixed cost;

(ii) Maintenance spares @ 15% of operation and maintenance expenses including security expenses; and

(iii) Operation and maintenance expenses, including security expenses for one month.

(2) The cost of fuel in cases covered under sub-clauses (a) and (c) of clause (1) of this Regulation shall be based on the landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 59 of these regulations) by the generating station and gross calorific value of the fuel as per actual weighted average for the preceding financial year in case of each financial year for which tariff is to be determined:

Provided that in the case of a new generating station, the cost of fuel for the first financial year shall be considered based on landed fuel cost (taking into account normative transit and handling losses in terms of Regulation 59 of these regulations) and gross calorific value of the fuel as per actual weighted average for three months, as used for infirm power, preceding date of commercial operation for which tariff is to be determined.

(3) Rate of interest on working capital shall be on a normative basis and shall be considered at the Reference Rate of Interest as on 1.4.2024 or as on 1st April of the year during the tariff period 2024-29 in which the generating station or a unit thereof or the transmission system including communication system or element thereof, as the case may be, is declared under commercial operation, whichever is later:

Provided that in case of truing-up, the rate of interest on working capital shall be considered at Reference Rate of Interest as on 1st April of each of the financial year during the tariff period 2024-29.

(4) Interest on working capital shall be payable on a normative basis, notwithstanding that the generating company or the transmission licensee has not taken a loan for working capital from any

outside agency.

35. **De-Commissioning**

- (1) In case a generating station or unit thereof, or a transmission system including communication systems or element thereof after it is certified by CEA or CTU or any other statutory authority, that any asset cannot be operated or needs to be replaced on account of environmental concerns or safety issues or system upgradation or a combination of these factors not attributable to generating company or a transmission licensee, the unrecovered depreciable value may be allowed to be recovered on a case-to-case basis after duly adjusting the salvage value or realisation value, whichever is higher, post disposal of such project.

Provided that the manner of recovery, including a number of instalments in which such unrecovered depreciation will be allowed, shall be specified by the Commission on a case-to-case basis.

Provided further that no carrying cost shall be allowed on any delay associated with such recovery.

36. **Operation and Maintenance Expenses:**

(1) Thermal Generating Station: Normative Operation and Maintenance expenses of thermal generating stations shall be as follows:

- (1) Coal based and lignite fired (including those based on Circulating Fluidised Bed Combustion (CFBC) technology) generating stations, other than the generating stations or units referred to in clauses (2), (4) and (5) of this Regulation:

(in Rs Lakh/MW)

Year	200/210/ 250 MW Series	300/330/ 350 MW Series	500 MW Series	600 MW Series	800 MW Series and above
FY 2024-25	40.92	34.04	27.17	25.78	23.20
FY 2025-26	43.07	35.83	28.60	27.13	24.42
FY 2026-27	45.33	37.71	30.10	28.56	25.70
FY 2027-28	47.71	39.69	31.68	30.06	27.05
FY 2028-29	50.21	41.78	33.34	31.64	28.47

Provided also that operation and maintenance expenses of generating station having a unit size of less than 200 MW not covered above shall be determined on a case-to-case basis.

(2) Tanda TPS:

(in Rs Lakh/MW)

Year	Tanda TPS (Unit 1)
FY 2024-25 to FY 2028-29	42.52

(3) Open Cycle Gas Turbine/Combined Cycle generating stations:

(in Rs Lakh/MW)

Year	Gas Turbine Combined Cycle generating stations other than small gas turbine power generating stations	Agartala GPS	Small gas turbine power generating stations and Tripura Gas Station	Advance F Class Machines
FY 2024-25	18.18	56.48	47.86	32.08
FY 2025-26	19.14	59.44	50.37	33.77
FY 2026-27	20.14	62.57	53.02	35.54
FY 2027-28	21.20	65.85	55.80	37.40
FY 2028-29	22.32	69.31	58.73	39.37

(4) Lignite-fired generating stations:

(in Rs Lakh/MW)

Year	125 MW Sets
FY 2024-25	38.81
FY 2025-26	40.85
FY 2026-27	42.99
FY 2027-28	45.25
FY 2028-29	47.62

(5) Generating Stations based on coal rejects:

(in Rs Lakh/MW)

Year	O&M Expenses
FY 2024-25	38.81
FY 2025-26	40.85
FY 2026-27	42.99
FY 2027-28	45.25
FY 2028-29	47.62

(6) The Water Charges, Security Expenses, Ash Transportation Expenses and Capital Spares for thermal generating stations shall be allowed separately after prudence check:

Provided that water charges shall be allowed based on water consumption depending upon type of plant and type of cooling water system or water agreement with state govt./utilities, and the norms specified by the Ministry of Environment, Forest and Climate Change subject to prudence check. The details regarding the same shall be furnished along with the petition;

Provided further that the generating station shall submit the assessment of the security requirement and estimated expenses along with the petition seeking the determination of tariff;

Provided also that the generating station shall submit the details of year-wise actual capital spares consumed individually costing above Rs. 10 Lakh at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not funded through compensatory allowance as per Regulation 17 of Central Electricity Regulatory Commission

(Terms and Conditions of Tariff) Regulations, 2014 or Special Allowance or claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

(7) Any additional O&M expenses incurred by the generating company due to any change in law shall be considered at the time of truing up of tariff.

Provided that such impact shall be allowed only in case the overall impact of such change in law event in a year is more than 5% of normative O&M expenses of the project allowed for the year.

(8) In the case of a generating company owned by the Central or State Government, the impact on account of implementation of wage or pay revision shall be allowed at the time of truing up of tariff.

(9) The operation and maintenance expenses on account of emission control systems in coal or lignite based thermal generating stations shall be 2% of the admitted capital expenditure (excluding IDC and IEDC) as on its date of operation, which shall be escalated annually @ 5.25% during the tariff period ending on 31st March 2029:

Provided that income generated from the sale of gypsum or other by-products shall be reduced from the operation and maintenance expenses.

(2) Hydro Generating Station:

The following operations and maintenance expense norms shall be applicable for hydro generating stations which have been operational for three or more years as on 1.4.2024:

(in Rs Lakh)

Particulars	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	FY 2028-29
THPS	40,548.78	42,765.88	45,104.19	47,570.36	50,171.37
KHEP	20,749.20	21,883.71	23,080.25	24,342.21	25,673.18

Bairasul	7,856.31	8,285.87	8,738.92	9,216.74	9,720.68
Loktak	8,876.09	9,361.41	9,873.26	10,413.10	10,982.46
Salal	17,208.43	18,149.34	19,141.69	20,188.30	21,292.14
Tanakpur	11,696.62	12,336.16	13,010.67	13,722.05	14,472.34
Chamera-I	14,397.75	15,184.98	16,015.25	16,890.92	17,814.47
Uri-I	11,755.75	12,398.52	13,076.44	13,791.42	14,545.50
Rangit	6,351.54	6,698.82	7,065.09	7,451.39	7,858.82
Chamera-II	12,149.92	12,814.25	13,514.89	14,253.85	15,033.21
Dhauliganga	11,323.06	11,942.18	12,595.14	13,283.81	14,010.13
Dulhasti	17,754.67	18,725.45	19,749.30	20,829.14	21,968.02
Teesta-V	15,193.93	16,024.69	16,900.88	17,824.97	18,799.59
Sewa-II	8,053.42	8,493.76	8,958.17	9,447.98	9,964.57
TLDP III	9,281.92	9,789.43	10,324.68	10,889.21	11,484.60
Chamera III	9,598.50	10,123.32	10,676.83	11,260.61	11,876.31
Chutak	4,259.73	4,492.64	4,738.28	4,997.36	5,270.60
Nimmo Bazgo	4,346.80	4,584.47	4,835.13	5,099.50	5,378.33
Uri II	9,135.41	9,634.91	10,161.71	10,717.33	11,303.32
Parbati III	10,703.93	11,289.19	11,906.45	12,557.46	13,244.07
Kishanganga	13,952.53	14,715.42	15,520.01	16,368.60	17,263.59
TLDP IV	10,697.94	11,282.87	11,899.79	12,550.43	13,236.66
Indira Sagar	15,030.66	15,852.50	16,719.27	17,633.43	18,597.57
Omkareshwar	10,183.66	10,740.48	11,327.73	11,947.10	12,600.34
Nathpa jhakari	48,588.63	51,245.32	54,047.26	57,002.41	60,119.15
Rampur	18,287.58	19,287.49	20,342.08	21,454.32	22,627.39
Koldam	13,113.75	13,830.78	14,587.01	15,384.58	16,225.77
Karcham Wangtoo	12,612.68	13,302.30	14,029.64	14,796.74	15,605.78
Kopili	12,038.46	12,743.93	13,490.73	14,281.29	15,118.18
Khandong I	2,137.15	2,262.39	2,394.96	2,535.31	2,683.88
Khandong II	1,065.60	1,128.04	1,194.15	1,264.12	1,338.20
Doyang	7,540.48	7,982.36	8,450.13	8,945.31	9,469.52
Panyor	16,827.77	17,813.88	18,857.79	19,962.87	21,132.70
Pare	16,383.05	17,343.10	18,359.42	19,435.29	20,574.21
Turial	5,120.13	5,420.17	5,737.79	6,074.03	6,429.97
Maithon	3,261.23	3,439.55	3,627.61	3,825.96	4,035.15
Panchet	3,361.27	3,545.06	3,738.89	3,943.32	4,158.93
Tilaiya	1,027.67	1,083.86	1,143.12	1,205.62	1,271.54
Teesta Urja Ltd.	27,438.21	28,938.46	30,520.73	32,189.51	33,949.55

- a) In the case of the hydro generating stations declared under commercial operation on or after 1.4.2024, operation and maintenance expenses of the first year shall be fixed at 3.5% and

5.0% of the original project cost (excluding the cost of rehabilitation & resettlement works, IDC and IEDC) for stations with installed capacity exceeding 200 MW and for stations with installed capacity less than or equal to 200 MW, respectively and shall be subject to annual escalation of 5.47% per annum for the subsequent years.

- b) In the case of hydro generating stations which have not completed a period of three years as on 1.4.2024, operation and maintenance expenses for 2024-25 shall be worked out by applying an escalation rate of 5.47% on the applicable operation and maintenance expenses as on 31.3.2024. The operation and maintenance expenses for subsequent years of the tariff period shall be worked out by applying an escalation rate of 5.47% per annum.
- c) The Security Expenses, Capital Spares and Insurance expenses arrived through competitive bidding for hydro generating stations shall be allowed separately after prudence check:

Provided that the generating station shall submit the assessment of the security requirement, capital spares and insurance expenses along with its estimated expenses, which shall be trued up based on the details of year-wise actual capital spares consumed, actual insurance and security expenses incurred with appropriate justification.

Provided further that the value of capital spares exceeding Rs. 10 lakh shall only be considered for reimbursement at the time of truing up with appropriate justification for incurring the same and substantiating that the same is not claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

- d) Any additional O&M expenses incurred by the generating company due to any change in law event shall be considered at the time of truing up of tariff.

Provided that such impact shall be allowed only in case the overall impact of such change in law event in a year is more than 5% of normative O&M expenses of the project for the year.

- e) In the case of a generating company owned by the Central or State Government, the impact on account of implementation of wage or pay revision shall be allowed at the time of truing up of tariff;
- f) The operation and maintenance expenses of the generating station and the transmission system of Bhakra Beas Management Board (BBMB) and Sardar Sarovar Project (SSP) shall be determined after taking into account provisions of the Punjab Reorganization Act, 1966 and Narmada Water Scheme, 1980 under Section-6 A of the Inter-State Water Disputes Act, 1956 respectively.

(3) Transmission system: (a) The following normative operation and maintenance expenses shall be admissible for the transmission system:

Particulars	2024-25	2025-26	2026-27	2027-28	2028-29
Norms for sub-station Bays (Rs Lakh per bay)					
765 kV	41.34	43.51	45.79	48.20	50.73
400 kV	29.53	31.08	32.71	34.43	36.23
220 kV	20.67	21.75	22.90	24.10	25.36
132 kV and below	15.78	16.61	17.48	18.40	19.35
Norms for Transformers/Reactors (Rs Lakh per MVA or MVAR)					
O&M expenditure per MVA or per MVAR (Rs Lakh per MVA or per MVAR)	0.262	0.276	0.290	0.305	0.322
Norms for AC and HVDC lines (Rs Lakh per km)					
Single Circuit (Bundled Conductor with six or more sub-conductors)	0.861	0.906	0.953	1.003	1.056
Single Circuit (Bundled conductor with four or more sub-conductors)	0.738	0.776	0.817	0.860	0.905
Single Circuit (Twin & Triple Conductor)	0.492	0.518	0.545	0.573	0.603
Single Circuit (Single Conductor)	0.246	0.259	0.272	0.287	0.302
Double Circuit (Bundled Conductor with four or more sub-conductors)	1.291	1.359	1.430	1.506	1.585
Double Circuit (Twin & Triple Conductor)	0.861	0.906	0.953	1.003	1.056
Double Circuit (Single Conductor)	0.369	0.388	0.409	0.430	0.453
Multi Circuit (Bundled Conductor with four or more sub-conductor)	2.266	2.385	2.510	2.642	2.781

Multi Circuit (Twin & Triple Conductor)	1.509	1.588	1.671	1.759	1.851
Norms for HVDC stations					
HVDC Back-to-Back stations (Rs Lakh per MW)	2.07	2.18	2.30	2.42	2.55
Gazuwaka BTB (Rs Lakh/MW)	1.83	1.92	2.03	2.13	2.24
HVDC bipole scheme (Rs Lakh/MW)	1.04	1.10	1.16	1.22	1.28

Provided that the O&M expenses for the GIS bays shall be allowed as worked out by multiplying 0.70 of the O&M expenses of the normative O&M expenses for bays;

Provided that the O&M expense norms of Double Circuit quad AC line shall be applicable to for HVDC bi-pole line;

Provided that the O&M expenses of ± 500 kV Mundra-Mohindergarh HVDC bipole scheme (2500 MW) shall be allowed as worked out by multiplying 0.80 of the normative O&M expenses for HVDC bipole scheme;

Provided further that the O&M expenses for Transmission Licensees whose transmission assets are located solely in NE Region (including Sikkim), States of Uttarakhand, Himachal Pradesh, the Union Territories of Jammu and Kashmir and Ladakh, district of Darjeeling of West Bengal shall be worked out by multiplying 1.50 to the normative O&M expenses prescribed above.

(b) The total allowable operation and maintenance expenses for the transmission system shall be calculated by multiplying the number of substation bays, transformer capacity of the transformer/reactor/Static Var Compensator/Static Synchronous Compensator (in MVA/MVAr) and km of line length with the applicable norms for the operation and maintenance expenses per bay, per MVA/MVAr and per km respectively.

(c) **Communication system:** The operation and maintenance expenses for the ULDC or such similar

scheme shall be worked out at 2.0% of the original project cost related to such communication system. The transmission licensee shall submit the actual operation and maintenance expenses for truing up. The expenses in case of U-NMS shall be allowed on actual basis after due prudence check.

(d) The Security Expenses, Capital Spares individually costing more than Rs. 10 lakh and Insurance expenses arrived through competitive bidding for the transmission system and associated communication system shall be allowed separately after prudence check:

Provided that in case of self insurance, the premium shall not exceed 0.09% of the GFA of the assets insured;

Provided that the transmission licensee shall submit the along with estimated security expenses based on assessment of the security requirement, capital spares and insurance expenses, which shall be trued up based on details of the year-wise actuals along with appropriate justification for incurring the same and along with confirmation that the same is not claimed as a part of additional capitalisation or consumption of stores and spares and renovation and modernization.

(e) On the occurrence of any change in law event affecting O&M expenses, the impact shall be allowed to the transmission licensee at the time of truing up of tariff.

Provided that such impact shall be allowed only in case the overall impact of such change in law event in a year is more than 5% of normative O&M expenses of the project for the year.

(f) In case of a transmission licensee owned by the Central or State Government, the impact on account of implementation of wage or pay revision shall be allowed at the time of truing up of tariff.

CHAPTER – 9

COMPUTATION OF INPUT PRICE OF COAL AND LIGNITE

FROM INTEGRATED MINE

37. **Input Price of coal and lignite for energy charges:** (1) Where the generating company has the arrangement for supply of coal or lignite from the integrated mine(s) allocated to it for use in one or more of its generating stations as end use, the energy charge component of tariff of the generating station shall be determined based on the input price of coal or lignite, as the case may be, from such integrated mines in accordance with these regulations.

(2) The generating company shall, after the date of commercial operation of the integrated mine(s) till the input price of coal is determined by the Commission under these regulations, adopt the notified price of Coal India Limited commensurate with the grade of the coal from the integrated mine(s) or the estimated price available in the investment approval, whichever is lower, as the input price of coal for the generating station:

Provided that the difference between the input price of coal determined under these regulations and the input price of coal so adopted prior to such determination, the quantity of coal billed shall be adjusted in accordance with Clause (4) of this Regulation.

(3) The generating company shall, after the date of commercial operation of the integrated mine(s), till the input price of lignite is determined by the Commission under these regulations, fix the input price of lignite for the generating station at the last available pooled lignite price as determined by the Commission for transfer price of lignite or the estimated price available in the investment approval, whichever is lower:

Provided that the difference between the input price of lignite determined under these

regulations and the input price of lignite so fixed prior to such determination, for the quantity of lignite billed, shall be adjusted in accordance with Clause (4) of this Regulation.

(4) In case of excess or short recovery of input price under Clauses (2) or (3) of this Regulation, the generating company shall refund the excess amount or recover the shortfall amount, as the case may be, with simple interest at the rate equal to 1-year SBI MCLR plus 100 basis points prevailing as on 1st April of the respective year of the tariff period, in six equal monthly instalments.

Provided that such interest shall be payable till the date of issuance of the Order and no interest shall be allowed or levied during the period of six-monthly instalments.

Provided that in case there is a delay in filing the Petition for determination of input price as per the timelines specified under Regulation 9 of these regulations, no carrying cost shall be allowed to the generating company or the mining company for such delay and in such cases the carrying cost at the simple interest rate of 1-year SBI MCLR plus 100 bps shall be allowed from the date of filing of the Petition.

38. **Input Price of coal or Lignite:** (1) Input price of coal or lignite from the integrated mine(s) shall be determined based on the following components:

- I) Run of Mine (ROM) Cost; and
- II) Additional charges:
 - a. crushing charges;
 - b. transportation charge within the mine up to the washery end or coal handling plant associated with the integrated mine, as the case may be;
 - c. handling charges at mine end;
 - d. washing charges; and

- e. transportation charges beyond the washery end or coal handling plant, as the case may be, and up to the loading point:

Provided that one or more components of additional charges may be applicable in the case of the integrated mine(s), based on the scope and nature of the mining activities;

Provided further that the input price of lignite shall be computed based on Run of Mine (ROM) based on the technology such as bucket excavator-conveyor or belt-spreader or its combination and handling charges, if any.

(2) Statutory Charges, as applicable, shall be allowed.

39. **Run of Mine (ROM) Cost:** (1) Run of Mine Cost of coal in case of integrated mine(s) allocated through an auction route under the Coal Mines (Special Provisions) Act, 2015 shall be worked out as under:

$$\text{ROM Cost} = (\text{Quoted Price of coal}) + (\text{Fixed Reserve Price})$$

Where,

- (i) The Quoted Price of coal is the Final Price Offer of coal in respect of the concerned coal block or mine, along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement:

Provided that additional premium, if any, quoted by the generating company during auction shall not be considered in the Run of Mine Cost;

- (ii) Fixed Reserve Price is the fixed reserve price per tonne along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement: and
- (iii) Capital cost under Regulation 41 and additional capital expenditure under

Regulation 42 shall not be admissible for the purpose of ROM cost in respect of integrated mine(s) allocated through the auction route.

(2) Run of Mine Cost of coal in case of integrated mine allocated through allotment route under Coal Mines (Special Provisions) Act, 2015 shall be worked out as under:

$$\text{ROM Cost} = [(\text{Annual Extraction Cost} / (\text{ATQ or Actual production whichever is higher}) + \text{Mining Charge}] + (\text{Fixed Reserve Price}).$$

Where,

- (i) Annual Extraction Cost is the cost of extraction of coal as computed in accordance with Regulation 43 of these regulations;
- (ii) Mining Charge is the charge per tonne of coal paid by the generating company to the Mine Developer and Operator engaged by the generating company for mining, wherever applicable; and
- (iii) Fixed Reserve Price is the fixed reserve price per tonne along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement.

(3) Run of Mine Cost of lignite in case of integrated mine(s) for lignite shall be worked out as under:

$$\text{ROM Cost} = [(\text{Annual Extraction Cost} / (\text{ATQ or Actual production whichever is higher}) + (\text{Mining Charge})]$$

Where,

- (i) Annual Extraction Cost is the cost of extraction of lignite as computed in accordance with Regulation 43 of these regulations; and

- (ii) Mining Charge is the charge per tonne of lignite paid by the generating company to the Mine Developer and Operator engaged by the generating company for mining, wherever applicable.

(4) The generating company shall adhere to the Mining Plan for the extraction of coal or lignite on an annual basis and shall submit a certificate to that effect from the Coal Controller or the competent authority:

Provided that deviations from the Mining Plan shall be considered only if such deviations have been approved by the Coal Controller or the revised Mining Plan has been approved by the competent authority.

(5) Run of Mine Cost of coal and lignite shall be worked out in terms of Rupees per tonne.

40. **Additional Charges:** (1) Where crushing or transportation or handling or washing are undertaken by the generating company without engaging the Mine Developer and Operator or an agency other than the Mine Developer and Operator, additional charges shall be worked out as under:

(i) Crushing Charges = Annual Crushing Cost/Quantity;

(ii) Transportation Charges= Annual Transportation Cost/Quantity:

Provided that separate transportation charges, as applicable, shall be considered from the mine up to the washery end or coal handling plant associated with the integrated mine(s) and beyond the washery end or coal handling plant associated with the integrated mine(s) and up to the loading point, as the case may be;

(iii) Handling charges = Annual Handling Cost/ Quantity; and

(iv) Washing Charges = Annual Washing Cost/Quantity.

Where,

- (a) Annual Crushing Cost, Annual Transportation Cost, Annual Handling Cost and Annual Washing Cost shall be worked out on the basis of the following components, for which the generating company shall submit the capital cost separately:
 - (i) Depreciation;
 - (ii) Interest on Working Capital;
 - (iii) Interest on Loan;
 - (iv) Return on Equity;
 - (v) Operation and Maintenance Expenses, excluding mining charge;
 - (vi) Statutory charges, if applicable.
- (b) Quantity shall be the quantity of coal or lignite in a tonne crushed or transported or handled or washed, as the case may be, during the year duly certified by the Auditor.

(2) Where crushing, transportation, handling, or washing are within the scope of the Mine Developer and Operator engaged by the generating company, no additional charges shall be admitted, as the same shall be recovered through the Mining Charge of the Mine Developer and Operator.

(3) Where crushing, transportation, handling, or washing are undertaken by the generating company by engaging an agency other than the Mine Developer and Operator, the annual charges of such agencies shall be considered as part of the Operation and Maintenance Expenses, provided that the charges have been discovered through a transparent, competitive bidding process.

(4) The crushing charges, transportation charges, handling charges, and washing charges shall be admitted by the Commission after a prudence check, considering charges of Coal India Limited or similarly placed coal mines or any other reference charges.

(5) The crushing charges, transportation charges, handling charges, and washing charges shall be worked out in terms of Rupees per tonne.

41. **Capital Cost:** (1) The expenditure incurred, including IDC and IEDC, duly certified by the Auditor, for the development of the integrated mine(s) up to the date of commercial operation shall be considered for arriving at the capital cost.

(2) Capital expenditure incurred shall be admitted by the Commission after a prudence check.

(3) Capital expenditure incurred on infrastructure for crushing, transportation, handling, washing and other mining activities required for mining operations shall be arrived at separately in accordance with these regulations:

Provided that where crushing, transportation, handling or washing are undertaken by the generating company, the expenditure incurred on infrastructures of these components shall be capitalized;

Provided further that where mine development and operation, with or without any component of crushing, transportation, handling or washing, are undertaken by the generating company by engaging the Mine Developer and Operator or an agency other than the Mine Developer and Operator, the capital expenditure incurred by the Mine Developer and Operator or such agency shall not be capitalised by the generating company and shall not be considered for the determination of input price.

(4) The capital expenditure shall be determined by considering, but not limited to, the Mining

Plan, detailed project report, mine closure plan, cost audit report and such other details as deemed fit by the Commission.

(5) In the case of integrated mine(s) which have declared the date of commercial operation prior to 1.4.2024, the capital expenditure allowed by the Commission for the period ending 31.3.2024 shall form the basis for the computation of input price.

42. **Additional Capital Expenditure:** (1) The expenditure, in respect of the integrated mine(s), incurred or projected to be incurred after the date of commercial operation and up to the date of achieving the Peak Rated Capacity may be admitted by the Commission, subject to a prudence check and shall be capitalized in the respective year of the tariff period as additional capital expenditure corresponding to the Annual Target Quantity of the year as specified in the Mining Plan or actual extraction in that year, whichever is higher, on following counts:

- (a) expenditure incurred on activities as per the Mining Plan;
- (b) expenditure for works deferred for execution and un-discharged liabilities recognized for works executed prior to the date of commercial operation;
- (c) expenditure for works required to be carried out for complying with directions or orders of any statutory authorities;
- (d) liabilities arising out of compliance with the order or decree of any court of law or award of arbitration;
- (e) expenditure for procurement and development of land as per the Mining Plan;
- (f) expenditure for procurement of additional heavy earth moving machineries for replacement, on completion of their useful life; and

- (g) liabilities due to Change in Law or Force Majeure event;

Provided that in case of replacement of any assets, the additional capitalization shall be worked out after adjusting the gross fixed assets and cumulative depreciation of the assets replaced on account of de-capitalization;

Provided further that the generating company shall prepare guidelines for procurement and replacement of heavy mining equipment such as Heavy Earth Moving Machineries and share the same with the beneficiaries and submit it to the Commission along with its petition.

(2) The expenditure, in respect of the integrated mine(s), incurred or projected to be incurred after the date of achieving the Peak Rated Capacity may be admitted by the Commission subject to a prudence check, and shall be capitalized as Additional Capital Expenditure, corresponding to the Annual Target Quantity of the respective years as specified in the Mining Plan, on following counts:

- (a) expenditure incurred on activities, if any, as per the Mining Plan;
- (b) expenditure for works required to be carried out for complying with directions or orders of any statutory authority;
- (c) liabilities arising out of compliance with an order or decree of any court of law or award of arbitration;
- (d) expenditure for procurement and development of land as per the Mining Plan;
and
- (e) liabilities due to Change in Law or Force Majeure events;

Provided that in case of replacement of any assets, the additional capitalization shall be worked out after adjusting the gross fixed assets, cumulative depreciation and cumulative repayment

of loan of the assets replaced on account of de-capitalization.

(3) The expenditure on the following counts shall not be considered as additional capital expenditure for the purpose of these regulations:

- a) expenditure incurred but not capitalized as the assets have not been put in service (capital work in progress);
- b) mine closure expenses;
- c) expenditure on works not covered under the Mining Plan, unless covered under sub-clause (g) of Clause (1) or sub-clause (e) of Clause (2) of this Regulation;
- d) expenditure on replacement due to obsolescence of assets on account of completion of the useful life or due to obsolescence of technology if the original cost of such assets has not been de-capitalised from the gross fixed assets.

43. **Annual Extraction Cost:** The Annual Extraction Cost of integrated mine(s) shall consist of the following components:

- (i) Depreciation;
- (ii) Interest on Loan;
- (iii) Return on Equity;
- (iv) Operation and Maintenance Expenses, excluding mining charge;
- (v) Interest on Working Capital;
- (vi) Mine closure expenses, if not included in mining charge; and

(vii) Statutory charges, if applicable.

44. **Capital Structure, Return on Equity and Interest on Loan:** (1) For integrated mine(s), the debt-equity ratio as on the date of commercial operation and as on the date of achieving Peak Rated Capacity shall be considered in the manner as specified under Clause (1) of Regulation 18 of these regulations:

Provided that for integrated mine(s) in respect of lignite with the date of commercial operation prior to 1.4.2024, the debt-equity ratio allowed by the Commission for the period ending 31.3.2024 shall form the basis for computation of input price.

(2) For integrated mine(s), the debt-equity ratio for additional capital expenditure admitted by the Commission under these regulations shall be considered in the manner specified under Clause (1) of this Regulation.

(3) Return on equity shall be computed in rupee terms on the equity base arrived under Clause (1) of this Regulation at the base rate of 14%.

(4) The base rate of return on equity as per Clause (3) of this Regulation shall be grossed up with the effective tax rate computed in the manner specified under Regulation 31 of these regulations.

(5) Interest on loan, including normative loan, if any, determined under Clause (1) of this Regulation, shall be arrived at by considering the weighted average rate of interest calculated on the basis of the actual loan portfolio, in accordance with Clauses (2) to (7) of Regulation 32 of these regulations.

45. **Depreciation:** (1) Depreciation in respect of integrated mine(s) shall be computed from the date of commercial operation by applying the Straight Line Method:

Provided that depreciation methodology allowed in respect of integrated mine(s) of lignite which have been declared under commercial operation on or before 31.3.2024, shall continue to

apply for determination of input price of lignite.

(2) The value base for the purpose of depreciation shall be the capital cost of the asset admitted by the Commission:

Provided that,

- i) freehold land or assets purchased from grant shall not be considered as depreciable assets, and their cost shall be excluded from the capital cost while computing the depreciable value of the assets;
- ii) where the allotment of freehold land is conditional and is required to be returned, the cost of such land shall be part of the value base for the purpose of depreciation, subject to a prudence check by the Commission; and
- iii) leasehold land shall be amortized over the lease period or remaining life of the integrated mine(s), whichever is lower.

(3) The salvage value of an asset shall be considered as 5% of the capital cost of the asset:

Provided that the salvage value shall be:

- i) zero for IT equipment and software;
- ii) zero or as agreed by the generating company with the State Government for land; and
- iii) as notified by the Ministry of Corporate Affairs under the Companies Act, 2013 for specialized mining equipment.

(4) Depreciation in respect of integrated mine(s) shall be arrived at annually by applying depreciation rates or on the basis of expected useful life specified in Appendix III of these regulations:

Provided that specialized mining equipment shall be depreciated as per the useful life and depreciation rate as notified by the Ministry of Corporate Affairs under the Companies Act, 2013.

46. **Operation and Maintenance Expenses:** (1) The Operation and Maintenance Expenses in respect of integrated mine(s) shall be allowed as under:

(a) The Operation and Maintenance expenses in respect of integrated mine(s) of coal, for the tariff period ending on 31st March 2029 shall be allowed based on the projected Operation and Maintenance Expenses for each year of the tariff period subject to prudence check by the Commission;

Provided that the Operation and Maintenance expenses allowed under this clause shall be trued up based on actual expenses for the tariff period ending on 31st March 2029.

(b) The Operation and Maintenance expenses for the tariff period ending on 31st March 2029 in respect of the integrated mine(s) of lignite commissioned on or before 31st March 2024 shall be worked out based on the Operation and Maintenance expenses as admitted by the Commission during 2023-24 and escalated at the rate of 5.25 % per annum;

(c) The Operation and Maintenance expenses for the tariff period ending on 31st March 2029 in respect of the integrated mine(s) of lignite commissioned after 31st March 2024 shall be allowed based on the projected Operation and Maintenance Expenses for each year of the tariff period, subject to prudence check by the Commission;

Provided that the Operation and Maintenance expenses allowed under this clause shall be trued up based on actual expenses for the tariff period ending on 31st March 2029.

(2) Where the development and operation of the integrated mine(s) is undertaken by the generating company by engaging the Mine Developer and Operator, the Mining Charge of such Mine Developer

and Operator shall not be included in Operation and Maintenance Expenses under Clause (1) of this Regulation;

(3) Where an agency other than Mine Developer and Operator is engaged by the generating company, through a transparent competitive bidding process, for crushing or transportation or handling or washing or any combination thereof, the annual charges of such agency shall be considered as part of Operation and Maintenance Expenses under clause (1) of this Regulation, subject to a prudence check by the Commission.

47. **Interest on Working Capital:** (1) The working capital of the integrated mine(s) of coal shall cover:

- (i) Input cost of coal stock for 7 days of production corresponding to the Annual Target Quantity for the relevant year;
- (ii) Consumption of stores and spares, including explosives, lubricants and fuel @ 15% of operation and maintenance expenses, excluding mining charge of the Mine Developer and Operator and annual charges of the agency other than the Mine Developer and Operator, engaged by the generating company; and
- (iii) Operation and maintenance expenses for one month, excluding the mining charge of the Mine Developer and Operator and annual charges of the agency other than the Mine Developer and Operator engaged by the generating company.

(2) The working capital of the integrated mine(s) of lignite shall cover: -

- (i) Input cost of lignite stock for 7 days of production corresponding to the Annual Target Quantity for the year;
- (ii) Consumption of stores and spare including explosives, lubricants and fuel @20%

of Operation and Maintenance expenses, excluding Mining Charge of the Mine Developer and Operator and annual charges of the agency other than the Mine Developer or Operator engaged by the generating company; and

(iii) Operation and Maintenance expenses for one month, excluding the Mining Charge of the Mine Developer and Operator and annual charges of the agency other than the Mine Developer and Operator, engaged by the generating company.

(3) The rate and payment of interest on working capital shall be determined in accordance with Clauses (3) and (4) of Regulation 34 of these regulations.

48. **Mine Closure Expenses:** (1) Where the mine closure is undertaken by the generating company, the amount deposited in the Escrow account as per the Mining Plan, after adjusting interest earned, if any, on the said deposits shall be admitted as Mine Closure Expenses:

Provided that,

- a) the amount deposited in the Escrow account as per the Mining Plan prior to the Date of Commercial Operation of the integrated mine(s) shall be indicated separately and shall be recovered over the useful life of the integrated mine(s) in the form of annuity linked to the borrowing rate;
- b) the amount deposited in the Escrow account as per the Mining Plan or any expenditure incurred towards mine closure shall be excluded from the capital cost for computing input price;
- c) where the expenditure incurred towards mine closure falls short of or is in excess of the reimbursement received from the Escrow account during the tariff period 2024-29, the shortfall or excess shall be carried forward to the subsequent years for

adjustments.

(2) The amount towards mine closure shall be deposited in the Escrow account as per the Mining Plan and shall be recovered as part of the input price irrespective of the expenditure incurred towards mine closure during any of the years of the tariff period.

(3) Where mine closure is within the scope of the Mine Developer and Operator engaged by the generating company and mine closure expenses are part of the Mining Charge of the Mine Developer and Operator, the mine closure expenses shall be met out of the Mining Charge, and no mine closure expenses shall be admissible to the generating company separately:

Provided that,

- a) the amount deposited in the Escrow account by the Mine Developer and Operator or by the generating company and any amount received from the Escrow Account against expenditure incurred towards mine closure shall not be considered for computing input price; and
- b) the difference between the borrowing cost, arrived at by considering the weighted average rate of interest calculated on the basis of the actual loan portfolio in accordance with the methodology specified in Regulation 32 of these regulations, and the amount deposited in the Escrow account and the interest received from Escrow account in a year shall be adjusted in the input price of coal or lignite of the respective year, as part of mine closure expenses, on case to case basis;

(4) Where the mine closure is within the scope of the Mine Developer and Operator engaged by the generating company only for a part of useful life of the integrated mine(s) and the generating company undertakes the mine closure for the balance useful life, the treatment of mine closure during the period undertaken by the generating company shall be in accordance with Clause (1) of

this Regulation and mine closure during the period undertaken by the Mine Developer and Operator shall be in accordance with Clause (3) of this Regulation:

Provided that the treatment of mine closure at the end of the useful life of the integrated mine(s) shall be decided by the Commission on a case-to-case basis.

(5) The mine closure expenses worked out in accordance with this Regulation shall not be applicable in case of the integrated mine(s) allocated through an auction route under the Coal Mines (Special Provisions) Act, 2015.

49. **Determination of Input Price:** (1) The input price of coal or lignite shall be determined as under:

$$\text{Input Price} = [\text{ROM Cost} + \text{Additional charges}]$$

(2) The credit arising on account of adjustment due to shortfall in overburden removal, GCV Adjustment and Non- tariff Income, if any, shall be dealt with separately in the manner specified in these regulations.

(3) Statutory Charges, as applicable, shall be allowed.

50. **Recovery of Input Charges:** (1) The input charges of coal or lignite shall be recovered as under:

$$\text{Input Charges} = [\text{Input Price} \times \text{Quantity of coal or lignite supplied}] + \text{Statutory charges, as applicable};$$

Provided that where the energy charge rate based on the input price of coal from integrated mine(s) exceeds 20% of the energy charge rate based on the notified price of Coal India Limited for the commensurate grade of coal in a month, prior consent of the beneficiary(ies) shall be required to be obtained by the generating company;

Provided further that where such consents of beneficiaries are not available, the input price of coal from such integrated mine(s) shall be so fixed that the energy charge rate based on the input price of coal from integrated mine(s) does not exceed by more than 20% of the energy charge rate based on the notified price of Coal India Limited for the commensurate grade of coal in a month;

Provided also that the energy charge rate based on the input price of coal does not lead to a higher energy charge rate throughout the tenure of the power purchase agreement than that which would have been obtained as per terms and conditions of the existing power purchase agreement.

(2) The generating company shall work out the comparative energy charge rate based on the input price of coal and notified price of Coal India Limited for the commensurate grade of coal for every month from the date of commercial operation of integrated mine(s) and share the same with beneficiaries.

51. Adjustment on account of Shortfall of Overburden Removal (OB Adjustment):

(1) The generating company shall remove overburden as specified in the Mining Plan.

(2) In case of a shortfall of overburden removal during a year, the generating company shall be allowed to adjust such shortfall against excess of overburden removal, if any, during the subsequent three years.

(3) In case of excess of overburden removal during a year, the generating company shall be allowed to carry forward such excess for adjustment against the shortfall, if any, during the subsequent three years.

(4) Where the shortfall of overburden removal of any year is not made good by the generating company in accordance with Clause (2) of this Regulation, the adjustment on account of the shortfall of overburden removal (OB Adjustment) for that year shall be worked out as under:

OB Adjustment = [Factor of adjustment for shortfall of overburden removal during the year] x [Mining Charge during the year + Operation and Maintenance expenses during the year]

Where,

- i) Factor of adjustment for the shortfall of overburden removal during the year shall be computed as under:

[(Actual quantity of coal or lignite extracted during the year x Annual Stripping Ratio as per Mining Plan) - (Actual quantity of overburden removed during the year/ Annual Stripping Ratio as per Mining Plan)]/ (Annual Target Quantity);

- ii) Annual Stripping ratio is the ratio of the volume of overburden to be removed for one unit of coal or lignite as specified in the Mining Plan.
- iii) Mining Charge is the charge per tonne of coal or lignite paid by the generating company to the Mine Developer and Operator engaged by the generating company for mining, wherever applicable.
- iv) Mining Charge and Operation and Maintenance expenses shall be in terms of Rupees per tonne corresponding to the Annual Target Quantity.

(5) The provisions of this Regulation regarding adjustment on account of shortfall of overburden removal shall not be applicable in case of the integrated mine(s) allocated through an auction route under the Coal Mines (Special Provisions) Act, 2015.

52. **Adjustment on account of shortfall in GCV (GCV Adjustment):** (1) In case the weighted average GCV of coal extracted from the integrated mine(s) in a year is higher than the declared GCV

of coal for such mine(s), no GCV adjustment shall be allowed.

(2) In case the weighted average GCV of coal extracted from the integrated mine(s) in a year is lower than the declared GCV of coal of such mine(s), the GCV adjustment in that year shall be worked out as under:

(a) Where the integrated mine(s) are allocated through an auction route under the Coal Mines (Special Provisions) Act, 2015:

$$\text{GCV Adjustment} = (\text{Quoted Price of coal} + \text{Fixed Reserve Price}) \times [(\text{Declared GCV of coal} - \text{Weighted Average GCV of coal extracted in the year}) / (\text{Declared GCV of coal})]$$

Where,

i) Quoted Price of coal is the Final Price Offer of coal in respect of the concerned coal Block or Mine, along with subsequent escalation, if any, as provided in the Coal Mine Development and Production Agreement:

Provided that additional premium, if any, quoted by the generating company in the auction shall not be considered; and

ii) Declared GCV of coal shall be the GCV of coal as specified or quoted in the auction.

(b) Where the integrated mine(s) are allocated through an allotment route under the Coal Mines (Special Provisions) Act, 2015:

$$\text{GCV Adjustment} = [(\text{Annual Extraction Cost}/\text{ATQ}) + (\text{Mining Charge})] \times [(\text{Declared GCV of coal} - \text{Weighted Average GCV of coal extracted in the year}) / (\text{Declared GCV of coal})]$$

Where,

- i) Annual Extraction Cost is the cost of extraction of coal as computed in accordance with Regulation 43 of these regulations;
- ii) Mining Charge is the charge per tonne of coal paid by the generating company to the Mine Developer and Operator engaged by the generating company for mining, wherever applicable; and
- iii) Declared GCV of coal shall be the average GCV as per the Mining Plan or as approved by the Coal Controller.

53. **Adjustment on account of Non-tariff income (NTI Adjustment):** (1) Adjustment on account of non-tariff income (NTI Adjustment) for any year, such as income from sale of washery rejects in case of integrated mine of coal and profit, if any, from supply of coal to the Coal India Limited or merchant sale of coal as allowed under the Coal Mines (Special Provisions) Act, 2015 shall be worked out as under:

$$\text{NTI Adjustment} = (2/3) \times (\text{Total Non-tariff income during the year}) / (\text{Actual quantity of coal or lignite extracted during the year})$$

(2) The adjustment on account of non-tariff income worked out in accordance with this Regulation shall not be applicable in case of the integrated mine(s) allocated through an auction route under the Coal Mines (Special Provisions) Act, 2015.

Provided that in case the actual extraction is less than ATQ, no NTI adjustment shall be made till the total cost of extraction is recovered.

54. **Credit Adjustment Note:** (1) The credit arising on account of OB Adjustment, GCV Adjustment, and NTI Adjustment shall be dealt with through a Credit Adjustment Note for any year.

(2) The Credit Adjustment Note shall be issued in favour of the specified end use generating stations on account of OB Adjustment, GCV Adjustment or NTI Adjustment, as the case may be, for that year as under:

- (i) OB Adjustment for the year X Quantity of coal or lignite supplied in that year;
- (ii) GCV Adjustment for the year X Quantity of coal or lignite supplied in that year;
- and
- (iii) NTI Adjustment in the year X Quantity of coal or lignite supplied in that year.

(3) The amount in the Credit Adjustment Note shall be adjusted against the charges of coal or lignite supplied after the date of issue of the Credit Adjustment Note. The integrated mine(s) shall prepare an annual reconciliation statement of such adjustment and furnish the same to all the end use plants and also publish the same on its website.

55. **Quality Measurement:** The quality of coal or lignite supplied from the integrated mine(s) shall be measured at the loading point through third party sampling as per the guidelines and procedure specified by the Ministry of Coal, Government of India and records of such measurement of quality of coal shall be made available to the beneficiaries on demand.

56. **Special Provision:** Provisions of Chapters 5 to 8 of these regulations shall not be applicable in case of integrated mine(s), except to the extent specifically provided for or referred to in Chapter-9:

Provided that the financial parameters required for determination of input price of coal or lignite from integrated mine(s), if not specifically provided for or referred to in Chapter-9, shall be considered as per provisions of these regulations as applicable to the coal or lignite based generating stations.

CHAPTER – 10

COMPONENTS OF ENERGY CHARGE

57. **Energy Charges and Supplementary Energy Charges:** The energy charge and Supplementary Energy Charges in respect of the thermal generating Stations shall comprise the landed cost of primary fuel, secondary fuel oil consumption and reagents on account of the implementation of the revised emission standards.

58. **Landed Fuel Cost of Primary Fuel:** The landed fuel cost of primary fuel for any month shall consist of the base price or input price of fuel corresponding to the grade and quality of fuel and shall be inclusive of statutory charges as applicable, washery charges, transportation cost by rail or road or any other means and loading, unloading and handling charges:

Provided that procurement of fuel at a price other than Government notified prices may be considered if it is based on competitive bidding through a transparent process;

Provided further that the landed fuel cost of primary fuel shall be worked out based on the actual bill paid by the generating company, including any adjustment on account of quantity and quality;

Provided also that in the case of coal-fired or lignite based thermal generating station, the Gross Calorific Value shall be measured by third party sampling, and the expenses towards the third party sampling facility shall be reimbursed by the beneficiaries.

59. **Transit and Handling Losses:** For coal and lignite, the transit and handling losses shall be as per the following norms: -

Thermal Generating Station	Transit and Handling Loss(%)
Pit head	0.20%
Non-pit head – All	0.80%

Rail route	
Non-pit head multi-modal transportation (using two or more than two mode of transport involving multiple trans-shipments)	1.00%

Provided that in the case of pit-head stations, if coal or lignite is procured from sources other than the pit-head mines which is transported to the station through rail, transit and handling losses applicable for non-pit head stations shall apply;

Provided further that in case of imported coal, the transit and handling losses applicable for pit-head station shall apply.

60. **Gross Calorific Value of Primary Fuel:** (1) The gross calorific value for computation of energy charges as per Regulation 64 of these regulations shall be done in accordance with 'GCV as Received';

(2) The measurement of GCV of domestic coal shall be done based on third party sampling through an agency to be appointed by the generating company in accordance with the guidelines, if any, issued by the Central Government and the generating company shall ensure recovery of compensation as per Fuel Supply Agreement(s) and pass on the benefits of the same to the beneficiaries of the generating station:

Provided that in the absence of third party sampling, computation of the energy charges as per Regulation 64 of these Regulations shall be done in accordance with 'GCV as Billed';

(3) In the case of an integrated coal mine, the GCV of coal received at the end use generating station shall be adjusted by 15 kCal/Kg from the GCV measured at the mine end for every 100 km distance

beyond 200 Km, or actual whichever is lower, subject to the condition that such an adjustment in aggregate shall not exceed 300 kCal/kg.

Provided further that the Commission after carrying out a detailed study may rationalise the mechanism for arriving at the gross calorific value of domestic coal at the generating station by considering the various factors impacting the calorific value throughout entire value chain from the delivery of coal to receiving at the generating station.

(4) No loss in calorific value between 'GCV as billed' and 'GCV as received' shall be admissible for generating stations procuring coal through import.

(5) The generating company shall provide to the beneficiaries of the generating station the details in respect of GCV and price of fuel i.e. domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel etc., as per the Form 15 prescribed at Annexure-I (Part I) to these regulations:

Provided that the additional details of the weighted average GCV of the primary fuel on a received basis used for generation during the period, the blending ratio of the imported coal with domestic coal, and the proportion of e-auction coal shall be provided, along with the bills of the respective month;

Provided further copies of the bills and details of parameters of GCV and price of fuel such as domestic coal, imported coal, e-auction coal, lignite, natural gas, RLNG, liquid fuel, details of blending ratio of the imported coal with domestic coal, the proportion of e-auction coal shall also be displayed on the website of the generating company.

61. **Landed Cost of Reagent:** (1) Where specific reagents such as Limestone, Sodium Bi-Carbonate, Urea or Anhydrous Ammonia are used during the operation of an emission control system for meeting revised emission standards, the landed cost of such reagents shall be determined based on the normative consumption and the purchase price of the reagent through competitive bidding,

applicable statutory charges and transportation cost.

(2) The normative consumption of specific reagents for the various technologies installed for meeting revised emission standards shall be as specified in Regulation 70 of these regulations.

CHAPTER – 11

COMPUTATION OF CAPACITY CHARGES AND ENERGY CHARGES

62. Computation and Payment of Capacity Charge for Thermal Generating Stations:

(1) The fixed cost of a thermal generating station shall be computed on annual basis based on the norms specified under these regulations and recovered on a monthly basis under capacity charge. The total capacity charge payable for a generating station shall be shared by its beneficiaries as per their respective percentage share or allocation in the capacity of the generating station. The capacity charge shall be recovered in two parts, viz., Capacity Charge for Peak Hours of the month and Capacity Charge for Off- Peak Hours of the month as follows:

(2) The Capacity Charge payable to a thermal generating station for a calendar month shall be calculated in accordance with the following formulae:

Capacity Charge for the Month (CC_n) =

Capacity Charge for Peak Hours of the Month (CC_{pn}) +

Capacity Charge for Off-Peak Hours of the Month (CC_{opn})

Where,

$$CC_{p1} = [(0.20 \times AFC) \times (1/12) \times (PAFM_{p1}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (1/12)\}]$$

$$CC_{p2} = [(0.20 \times AFC) \times (1/6) \times (PAFM_{p2}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (1/6)\}]$$

$$- CC_{p1}$$

$$CC_{p3} = [(0.20 \times AFC) \times (1/4) \times (PAFM_{p3}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (1/4)\}]$$

$$- (CC_{p1} + CC_{p2})$$

$$CC_{p4} = [(0.20 \times AFC) \times (1/3) \times (PAFM_{p4}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (1/3)\}]$$

$$- (CC_{p1} + CC_{p2} + CC_{p3})$$

$$CC_{p5} = [(0.20 \times AFC) \times (5/12) \times (PAFM_{p5}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (5/12)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4})$$

$$CC_{p6} = [(0.20 \times AFC) \times (1/2) \times (PAFM_{p6}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (1/2)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5})$$

$$CC_{p7} = [(0.20 \times AFC) \times (7/12) \times (PAFM_{p7}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (7/12)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5} + CC_{p6})$$

$$CC_{p8} = [(0.20 \times AFC) \times (2/3) \times (PAFM_{p8}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (2/3)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5} + CC_{p6} + CC_{p7})$$

$$CC_{p9} = [(0.20 \times AFC) \times (3/4) \times (PAFM_{p9}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (3/4)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5} + CC_{p6} + CC_{p7} + CC_{p8})$$

$$CC_{p10} = [(0.20 \times AFC) \times (5/6) \times (PAFM_{p10}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (5/6)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5} + CC_{p6} + CC_{p7} + CC_{p8} + CC_{p9})$$

$$CC_{p11} = [(0.20 \times AFC) \times (11/12) \times (PAFM_{p11}/NAPAF) \text{ subject to ceiling of } \{(0.20 \times AFC) \times (11/12)\}] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5} + CC_{p6} + CC_{p7} + CC_{p8} + CC_{p9} + CC_{p10})$$

$$CC_{p12} = [(0.20 \times AFC) \times (PAFM_{p12}/NAPAF) \text{ subject to ceiling of } (0.20 \times AFC)] - (CC_{p1} + CC_{p2} + CC_{p3} + CC_{p4} + CC_{p5} + CC_{p6} + CC_{p7} + CC_{p8} + CC_{p9} + CC_{p10} + CC_{p11})$$

$$CC_{op1} = (0.80 \times AFC) \times (1/12) \times (PAFM_{op1}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (1/12)\}$$

$$CC_{op2} = [(0.80 \times AFC) \times (1/6) \times (PAFM_{op2}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (1/6)\}] - CC_{op1}$$

$$CC_{op3} = [(0.80 \times AFC) \times (1/4) \times (PAFM_{op3}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (1/4)\}] - (CC_{op1} + CC_{op2})$$

$$CC_{op4} = [(0.80 \times AFC) \times (1/3) \times (PAFM_{op4}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (1/3)\}] - (CC_{op1} + CC_{op2} + CC_{op3})$$

$$CC_{op5} = [(0.80 \times AFC) \times (5/12) \times (PAFM_{op5}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (5/12)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4})$$

$$CC_{op6} = [(0.80 \times AFC) \times (1/2) \times (PAFM_{op6}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (1/2)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5})$$

$$CC_{op7} = [(0.80 \times AFC) \times (7/12) \times (PAFM_{op7}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (7/12)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5} + CC_{op6})$$

$$CC_{op8} = [(0.80 \times AFC) \times (2/3) \times (PAFM_{op8}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (2/3)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5} + CC_{op6} + CC_{op7})$$

$$CC_{op9} = [(0.80 \times AFC) \times (3/4) \times (PAFM_{op9}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (3/4)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5} + CC_{op6} + CC_{op7} + CC_{op8})$$

$$CC_{op10} = [(0.80 \times AFC) \times (5/6) \times (PAFM_{op10}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (5/6)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5} + CC_{op6} + CC_{op7} + CC_{op8} + CC_{op9})$$

$$CC_{op11} = [(0.80 \times AFC) \times (11/12) \times (PAFM_{op12}/NAPAF) \text{ subject to ceiling of } \{(0.80 \times AFC) \times (11/12)\}] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5} + CC_{op6} + CC_{op7} + CC_{op8} + CC_{op9} + CC_{op10})$$

$$CC_{op12} = [(0.80 \times AFC) \times (PAFM_{op12}/NAPAF) \text{ subject to ceiling of } (0.80 \times AFC)] - (CC_{op1} + CC_{op2} + CC_{op3} + CC_{op4} + CC_{op5} + CC_{op6} + CC_{op7} + CC_{op8} + CC_{op9} + CC_{op10} + CC_{op11})$$

Provided that in case generating station or unit thereof is under shutdown due to Renovation and Modernisation or installation of emission control system, as the case may be, the generating company shall be allowed to recover O&M expenses and interest on loan only.

Where,

CC_m = Capacity Charge for the Month;

CC_P = Capacity Charge for the Peak Hours of the Month;

CC_{op} = Capacity Charge for the Off-Peak Hours of the Month;

CC_{pn} = Capacity Charge for the Peak Hours of n^{th} Month;

CC_{opn} = Capacity Charge for the Off-Peak of n^{th} Month;

AFC = Annual Fixed Cost;

$PAFM_{pn}$ = Plant Availability Factor achieved during Peak Hours up to the end of n^{th} Month;

$PAFM_{opn}$ = Plant Availability Factor achieved during Off-Peak Hours up to the end of n^{th} Month;

$NAPAF$ = Normative Annual Plant Availability Factor.

(3) Normative Plant Availability Factor for "Peak" and "Off-Peak" Hours in a month shall be equivalent to the $NAPAF$ specified in Clause (A) of Regulation 70 of these regulations. The number of hours of "Peak" and "Off-Peak" periods during a day shall be four and twenty, respectively. The hours of Peak and Off-Peak periods during a day shall be declared by the concerned RLDC at least a week in advance.

Provided that RLDC, after duly considering the comments of the concerned stakeholders,

shall declare Peak Hours in such a way as to coincide with the majority of the Peak Hours of the region to the maximum extent possible:

Provided further that in respect of a generating station having beneficiaries across different regions, the Peak Hours shall correspond to Peak Hours of the region in which the majority of its beneficiaries, in terms of percentage of allocation of share, are located.

The shortfall in recovery of Capacity Charge for cumulative Off-Peak Hours derived based on NAPAF shall be allowed to be off-set by over-achievement of PAF, if any, and consequent notional over-recovery of Capacity Charge for cumulative Peak Hours.

Provided that the shortfall in recovery of Capacity Charge for cumulative Peak Hours derived based on NAPAF, shall not be allowed to be off-set by over-achievement of PAF, if any, and consequent notional over-recovery of Capacity Charge for cumulative Off-Peak Hours.

(4) The Plant Availability Factor for a Month ('PAFM') shall be computed in accordance with the following formula:

$$PAFM = 10000 \times \sum_{i=1}^n \frac{DCi}{[N \times IC \times (100 - AUXn - AUXen)]} \%$$

Where,

AUXn = Normative auxiliary energy consumption as a percentage of gross energy generation;

AUXen= Normative auxiliary energy consumption for emission control system as a percentage of gross energy generation, wherever applicable;

DCi = Average declared capacity (in ex-bus MW), for the ith day of the period i.e. the month or the year, as the case may be, as certified by the concerned load dispatch centre after the day is over;

IC = Installed Capacity (in MW) of the generating station;

n = Number of days during the period;

Note: DC_i and IC shall exclude the capacity of generating units not declared under commercial operation. In case of a change in IC during the concerned period, its average value shall be taken.

(5) In addition to the AFC entitlement as computed above, the thermal generating station shall be allowed an incentive of up to 1.00% of AFC approved for a given year, which shall be billed monthly as per the following.

$$\text{Incentive} = (1.00\% \times \beta \times \text{CC}_y) / 12$$

Where,

β = Average Monthly Frequency Response Performance for that generating station, as certified by RPCs, which shall be computed by considering primary response as per the methodology prescribed by the NLDC with approval of the Commission, and β shall range between 0 to 1.

Provided that the incentive shall be payable only if the Beta value is higher than 0.30.

CC_y = Capacity Charges for the Year.

(6) In addition to the capacity charge, an incentive shall be payable to a generating station or unit thereof @ 75 paise/ kWh for ex-bus scheduled energy during Peak Hours and @ 55 paise/ kWh for ex-bus scheduled energy during Off-Peak Hours corresponding to scheduled generation in excess of ex-bus energy corresponding to Normative Annual Plant Load Factor (NAPLF) achieved on a cumulative basis, as specified in Clause (B) of Regulation 70 of these regulations.

63. Computation and Payment of Supplementary Capacity Charge for Coal or Lignite based Thermal Generating Stations:

(1) The fixed cost of the emission control system shall be computed on an annual basis based on the norms specified under these regulations and recovered on a monthly basis under a supplementary capacity charge. The total supplementary capacity charge is payable for a generating station shall be shared by its beneficiaries as per their respective percentage share or allocation in the capacity of the generating station.

(2) The Supplementary Capacity Charge payable to a coal or lignite generating station for a calendar month shall be calculated in accordance with the following formulae:

$$SCC_1 = (AFC_e) \times (1/12) \times (PAFM_1/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (1/12)\}$$

$$SCC_2 = [(AFC_e) \times (1/6) \times (PAFM_2/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (1/6)\}] - SCC_1$$

$$SCC_3 = [(AFC_e) \times (1/4) \times (PAFM_3/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (1/4)\}] - (SCC_1 + SCC_2)$$

$$SCC_4 = [(AFC_e) \times (1/3) \times (PAFM_4/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (1/3)\}] - (SCC_1 + SCC_2 + SCC_3)$$

$$SCC_5 = [(AFC_e) \times (5/12) \times (PAFM_5/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (5/12)\}] - (SCC_1 + SCC_2 + SCC_3 + SCC_4)$$

$$SCC_6 = [(AFC_e) \times (1/2) \times (PAFM_6/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (1/2)\}] - (SCC_1 + SCC_2 + SCC_3 + SCC_4 + SCC_5)$$

$$SCC_7 = [(AFC_e) \times (7/12) \times (PAFM_7/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (7/12)\}] - (SCC_1 + SCC_2 + SCC_3 + SCC_4 + SCC_5 + SCC_6)$$

$$SCC_8 = [(AFC_e) \times (2/3) \times (PAFM_8/NAPAF) \text{ subject to ceiling of } \{(AFC_e) \times (2/3)\}] - (SCC_1 +$$

$$SCC_2+ SCC_3+SCC_4+SCC_5+SCC_6 +SCC_7)$$

$$SCC_9= [(AFC_e) \times (3/4) \times (PAFM_9/NAPAF)] \text{ subject to ceiling of } \{(AFC_e) \times (3/4)\} - (SCC_1+ SCC_2+ SCC_3+SCC_4+SCC_5+SCC_6+SCC_7+SCC_8)$$

$$SCC_{10}= [(AFC_e) \times (5/6) \times (PAFM_{10}/NAPAF)] \text{ subject to ceiling of } \{(AFC_e) \times (5/6)\} - (SCC_1+ SCC_2+ SCC_3+SCC_4+SCC_5+SCC_6 +SCC_7+SCC_8 +SCC_9)$$

$$SCC_{11}= [(AFC_e) \times (11/12) \times (PAFM_{11}/NAPAF)] \text{ subject to ceiling of } \{(AFC_e) \times (11/12)\} - (SCC_1+ SCC_2+ SCC_3+SCC_4+SCC_5+SCC_6 +SCC_7+SCC_8+SCC_9+SCC_{10})$$

$$SCC_{12}= [(AFC_e) \times (PAFM_{12}/NAPAF)] \text{ subject to ceiling of } (AFC_e) - (SCC_1+ SCC_2+ SCC_3+SCC_4+SCC_5+SCC_6 +SCC_7+SCC_8+SCC_9+SCC_{10}+SCC_{11})$$

Provided that in case of the generating station or unit thereof under shutdown due to Renovation and Modernisation, the generating company shall be allowed to recover O&M expenses and interest on the loan in respect of the emission control system only.

Where,

SCC_n = Supplementary Capacity Charge for the n^{th} Month;

AFC_e = Annual Fixed Cost of the emission control system;

$PAFM_n$ = Plant Availability Factor achieved up to the end of n^{th} Month;

$NAPAF$ = Normative Annual Plant Availability Factor.

(3) Normative Plant Availability Factor for a month for the purpose of Supplementary Capacity Charge shall be considered in the manner specified in Clause (3) of Regulation 62 of these regulations. The PAFM shall be worked out in accordance with Clause (4) of Regulation 62 of these regulations.

64. Computation and Payment of Energy Charge for Thermal Generating Stations and Supplementary Energy Charge for Coal or Lignite based Thermal Generating Stations:

(1) The energy charge shall cover the primary and secondary fuel cost and limestone consumption cost (where applicable) and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the energy charge rate of the month (with fuel and limestone price adjustment).

The total Energy charge payable to the generating company for a month shall be:

$$\text{Energy Charges} = (\text{Energy charge rate in Rs./kWh}) \times \{\text{Scheduled energy (ex bus) for the month in kWh}\}$$

(2) The supplementary energy charge on account of the emission control system shall cover the differential energy charges due to auxiliary energy consumption and cost of reagent consumption and shall be payable by every beneficiary for the total energy scheduled to be supplied to such beneficiary during the calendar month on an ex-power plant basis, at the supplementary energy charge rate of the month. The total supplementary energy charge payable to the generating company for a month shall be:

$$\text{Supplementary Energy Charges} = (\text{Supplementary energy charge rate in Rs./kWh}) \times \{\text{Scheduled energy (ex-bus) for the month in kWh}\}$$

(3) Energy charge rate (ECR) and Supplementary Energy charge rate in Rupees per kWh on ex-power plant basis shall be determined to three decimal places in accordance with the following formulae:

(a) ECR for coal based and lignite fired stations:

$$\text{ECR} = [\{ (\text{SHR} - \text{SFC} \times \text{CVSF}) \times \text{LPPF} / \text{CVPF} \} + (\text{SFC} \times \text{LPSFi}) + (\text{LC} \times \text{LPL})] \times 100$$

/(100 - AUX)

(b) Supplementary ECR for coal and lignite based thermal generating stations:

$$\text{Supplementary ECR} = (\Delta\text{ECR}) + [(\text{SRC} \times \text{LPR} / 10) / (100 - (\text{AUX}_n + \text{AUX}_{en}))]$$

(c) For gas and liquid fuel based stations:

$$\text{ECR} = \text{SHR} \times \text{LPPF} \times 100 / \{(\text{CVPF}) \times (100 - \text{AUX})\}$$

Where,

AUX = Normative auxiliary energy consumption in percentage.

CVPF = (a) Weighted Average Gross calorific value of coal considering GCV as per Regulation 60, in kCal per kg for coal based stations less 85 Kcal/Kg on account of variation during storage at generating station;

(b) Weighted Average Gross calorific value of primary fuel as received, in kCal per kg, per litre or per standard cubic meter, as applicable for lignite, gas and liquid fuel based stations;

(d) In the case of blending of fuel from different sources, the weighted average Gross calorific value of the primary fuel shall be arrived at in proportion to the blending ratio:

CVSF = Calorific value of secondary fuel, in kCal per ml;

ECR = Energy charge rate, in Rupees per kWh sent out;

SHR = Gross station heat rate, in kCal per kWh;

LC = Normative limestone consumption in kg per kWh;

LPL = Weighted average landed cost of limestone in Rupees per kg;

LPPF = Weighted average landed fuel cost of primary fuel, in Rupees per kg, per litre or per standard cubic metre, as applicable, during the month. (In case of blending of fuel from

different sources, the weighted average landed fuel cost of primary fuel shall be arrived in proportion to the blending ratio);

SFC = Normative Specific fuel oil consumption, in ml per kWh;

LPSFi = Weighted Average Landed Fuel Cost of Secondary Fuel in Rs./ml during the month;

(Δ ECR) = Difference between ECR with revised auxiliary energy consumption with emission control system equivalent to ($AUX_n + AUX_{en}$) and ECR with normative auxiliary energy consumption as specified in these regulations;

SRC = Specific reagent consumption on account of revised emission standards (in g/kWh);

LPR = Weighted average landed price of reagent for the emission control system (in Rs./kg).

Provided that the energy charge rate for a gas or liquid fuel based station shall be adjusted for open cycle operation based on certification of the Member Secretary of the respective Regional Power Committee during the month.

In case of part or full use of an alternative source of fuel supply by coal based thermal generating stations other than as agreed by the generating company and beneficiaries in their power purchase agreement for the supply of contracted power on account of a shortage of fuel or optimization of economical operation through blending, the use of an alternative source of fuel supply shall be permitted to generating station:

Provided that the weighted average price of alternative source of fuel shall not exceed 30% of base price of fuel computed as per clause (5) of this Regulation and in such case, prior permission from beneficiaries shall not be a pre-condition, unless otherwise agreed specifically in the power purchase agreement:

Provided further that where the energy charge rate based on weighted average price of fuel upon use

of alternative source of fuel supply exceeds 30% of base energy charge rate as approved by the Commission for that year or exceeds 20% of energy charge rate for the previous month, whichever is lower shall be considered and, in that event, prior consultation with beneficiary shall be made at least three days in advance.

(4) Notwithstanding anything contained in clause 3 of this Regulation, the Commission after considering the shortage of fuel, may vary through separate Order(s), the blending ratio and the requirement of beneficiary consent thereof, towards use of alternative source of fuel..

(5) Where biomass fuel is used for blending with coal, the landed cost of biomass fuel shall be worked out based on the delivered cost of biomass at the unloading point of the generating station, inclusive of taxes and duties as applicable. The energy charge rate of the blended fuel shall be worked out considering the consumption of biomass based on the blending ratio as specified by the Authority or the actual consumption of biomass, whichever is lower.

(6) The Commission, through specific tariff orders to be issued for each generating station, shall approve the energy charge rate at the start of the tariff period. The energy charge rate so approved shall be the base energy charge rate for the first year of the tariff period. The base energy charge rate for subsequent years shall be the energy charge computed after escalating the base energy charge rate by escalation rates for payment purposes as notified by the Commission from time to time under competitive bidding guidelines.

(7) The tariff structure as provided in Regulation 63 and Regulation 64 of these regulations may be adopted by the Department of Atomic Energy, Government of India, for the nuclear generating stations by specifying annual fixed cost (AFC), normative annual plant availability factor (NAPAF), installed capacity (IC), normative auxiliary energy consumption (AUX) and energy charge rate (ECR) for such stations.

65. Computation and Payment of Capacity Charge and Energy Charge for Hydro Generating Stations:

(1) The fixed cost of a hydro generating station shall be computed on an annual basis, based on norms specified under these regulations, and shall be recovered on a monthly basis under capacity charge (inclusive of incentive) and energy charge, which shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station, i.e., in the capacity excluding the free power to the home State:

Provided that during the period between the date of commercial operation of the first unit of the generating station and the date of commercial operation of the generating station, the annual fixed cost shall provisionally be worked out based on the latest estimate of the completion cost for the generating station, for the purpose of determining the capacity charge and energy charge payment during such period.

(2) The capacity charge (inclusive of incentive) payable to a hydro generating station for a calendar month shall be:

$$\text{AFC} \times 0.5 \times \text{NDM} / \text{NDY} \times (\text{PAFM} / \text{NAPAF}) \text{ (in Rupees)}$$

Where,

AFC = Annual fixed cost specified for the year, in Rupees

NAPAF = Normative plant availability factor in percentage

NDM = Number of days in the month

NDY = Number of days in the year

PAFM = Plant availability factor achieved during the month, in percentage

- (3) The PAFM shall be computed in accordance with the following formula:

$$\text{PAFM} = 10000 \times \sum_{i=1}^N \frac{\text{DC}_i}{\{N \times \text{IC} \times (100 - \text{AUX})\}} \%$$

Where

AUX = Normative auxiliary energy consumption in percentage

DC_i = Declared capacity (in ex-bus MW) for the ith day of the month, which the station can deliver for at least three (3) hours, as certified by the nodal load dispatch centre after the day is over.

IC = Installed capacity (in MW) of the complete generating station

N = Number of days in the month

- (4) In addition to the AFC entitlement as computed above, the hydro generating station shall be allowed an incentive of up to 3% of the Capacity Charge approved for a given year which shall be billed monthly as per the following.

$$\text{Incentive} = (3\% \times \beta \times \text{CC}_y)/12$$

Where,

β = Average Monthly Frequency Response Performance for that generating station, as certified by RPCs, which shall be computed by considering primary response as per the methodology prescribed by the NLDC with approval of the Commission and beta shall range between 0 to 1.

Provided that incentive shall be payable only if Beta value is higher than 0.30.

CC_y = Capacity Charges for the Year.

(5) The energy charge shall be payable by every beneficiary for the total energy scheduled to be supplied to the beneficiary, excluding free energy, if any, during the calendar month, on the ex-bus basis, at the computed energy charge rate. The total energy charge payable to the generating company for a month shall be:

$$\text{Energy Charges} = (\text{Energy charge rate in Rs. / kWh}) \times \{ \text{Scheduled energy (ex-bus) for the month in kWh} \} \times (100 - \text{FEHS}) / 100$$

(6) Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis, for a hydro generating station, shall be determined up to three decimal places based on the following formula, subject to the provisions of clause (8) of this Regulation:

$$\text{ECR} = \text{AFC} \times 0.5 \times 10 / \{ \text{DE} \times (100 - \text{AUX}) \times (100 - \text{FEHS}) \}$$

Where,

DE = Annual design energy specified for the hydro generating station, in MWh, subject to the provision in clause (7) below.

FEHS = Free energy for home State, in per cent, as mentioned in EXPLANATION-III under Regulation 76 of these regulations.

(7) In case the saleable scheduled energy (ex-bus) of a hydro generating station during a year is less than the saleable design energy (ex-bus) for reasons beyond the control of the generating station, the generating station may directly recover the shortfall in energy charges in six equal interest-free monthly instalments after adjusting for DSM Energy in the immediately following year and shall be subject to truing up at the end of the tariff period.

Provided that in case actual generation from a hydro generating station is less than the design energy for a continuous period of four years on account of hydrology factor, the generating

station shall approach the Central Electricity Authority with relevant hydrology data for revision of design energy of the station.

(8) Any shortfall in the energy charges on account of saleable scheduled energy (ex-bus) being less than the saleable design energy (ex-bus) during the tariff period 2019-24, which was beyond the control of the generating station and which could not be recovered during the said tariff period shall be recovered in accordance with clause (7) of this Regulation.

(9) In case the energy charge rate (ECR) for a hydro generating station, computed as per clause (5) of this Regulation exceeds one hundred and thirty paise per kWh, and the actual saleable energy in a year exceeds $\{DE \times (100 - AUX) \times (100 - FEHS) / 10000\}$ MWh, the energy charge for the energy in excess of the above shall be billed at one hundred and thirty paise per kWh only.

(10) In addition to the above, an incentive shall be payable to a ROR Hydro generating station @ 50 paise/ kWh corresponding to the saleable scheduled energy during peak hours of the day in excess of average saleable scheduled energy during the day (24 hours).

66. Computation and Payment of Capacity Charge and Energy Charge for Pumped Storage Hydro Generating Stations:

(1) The fixed cost of a pumped storage hydro generating station shall be computed on an annual basis, based on norms specified under these regulations, and recovered on a monthly basis as a capacity charge. The capacity charge shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station;

Provided that during the period between the date of commercial operation of the first unit of the generating station and the date of commercial operation of the generating station, the annual fixed cost shall be worked out based on the latest estimate of the completion cost for the generating station, for the purpose of determining the capacity charge payment during such period.

(2) The capacity charge payable to a pumped storage hydro generating station for a calendar month shall be:

$(AFC \times NDM / NDY)$ (In Rupees), if actual Generation during the month is $\geq 75\%$ of the Pumping Energy consumed by the station during the month and $\{(AFC \times NDM / NDY) \times (\text{Actual Generation during the month during peak hours} / 75\% \text{ of the Pumping Energy consumed by the station during the month})\}$ (in Rupees)}, if actual Generation during the month is $< 75\%$ of the Pumping Energy consumed by the station during the month.

Where,

AFC = Annual fixed cost specified for the year, in Rupees

NDM = Number of days in the month

NDY = Number of days in the year

Provided that there would be adjustments at the end of the year based on actual generation and actual pumping energy consumed by the station during the year.

(3) The energy charge shall be payable by every beneficiary for the total energy scheduled to be supplied to the beneficiary in excess of the design energy plus 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir, at a flat rate equal to the average energy charge rate of 20 paise per kWh, if any, during the calendar month, on ex power plant basis.

(4) Energy charge payable to the generating company for a month shall be:

$= 0.20 \times \{(\text{Scheduled energy (ex-bus) for the month in kWh} - \text{Design Energy for the month (DEm)}) + 75\% \text{ of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir of the month}\} / 100.$

Where,

DEm = Design energy for the month specified for the hydro generating station, in MWh

Provided that in case the Scheduled energy in a month is less than the Design Energy for the month plus 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir of the month, then the energy charges payable by the beneficiaries shall be zero.

Provided that if the energy for the pumping of water from lower reservoir to upper reservoir is arranged by the generating company, the charges for the pumping energy till the ex-Bus of the generating station shall be payable by the beneficiaries in proportion to their respective allocation in the saleable capacity of the generating station.

(5) The generating company shall maintain the record of daily inflows of natural water into the upper elevation reservoir and the reservoir levels of the upper elevation reservoir and lower elevation reservoir on an hourly basis. The generator shall be required to maximize the peak hour supplies with the available water, including the natural flow of water. In case it is established that the generator is deliberately or otherwise, without any valid reason, not pumping water from a lower elevation reservoir to a higher elevation during off-peak periods or not generating power to its potential or wasting the natural flow of water, the capacity charges of the day shall not be payable by the beneficiary. For this purpose, outages of the unit(s)/station, including planned outages and forced outages up to 15% in a year, shall be construed as the valid reason for not pumping water from the lower elevation reservoir to the higher elevation during an off-peak period or not generating power using the energy of pumped water or natural flow of water:

Provided that the total capacity charges recovered during the year shall be adjusted on a pro-rata basis in the following manner in the event of total machine outages in a year exceeding 15%:

$$(ACC)_{adj} = (ACC) R \times (100 - ATO) / 85$$

Where,

(ACC)_{adj} - Adjusted Annual Capacity Charges

(ACC) R - Annual Capacity Charges recovered

ATO - Total Outages in percentage for the year including forced and planned outages

Provided further that the generating station shall be required to declare its machine availability daily on day ahead basis for all the time blocks of the day in line with the scheduling procedure of Grid Code.

(6) The concerned Load Despatch Centre shall finalise the schedules for the hydro generating stations, in consultation with the beneficiaries, for optimal utilization of all the energy declared to be available, which shall be scheduled for all beneficiaries in proportion to their respective allocations in the generating station.

67. Computation and Payment of Transmission Charge for Inter-State Transmission System and Communication System:

(1) The fixed cost of the transmission system or communication system forming part of the transmission system shall be computed on an annual basis, in accordance with norms contained in these regulations, aggregated as appropriate, and recovered on a monthly basis as transmission charge from the users, who shall share these charges in the manner specified in clause (2) of this Regulation.

(2) The Transmission charge (inclusive of incentive) payable for a calendar month for the transmission system or part shall be computed for each region separately for the AC and DC system as under:

For AC system:

a) For $TAFM_n \leq 98.00\%$

$$AFC \times (NDM_n / NDY) \times (TAFM_n / 98.00\%)$$

b) For $TAFM_n: 98.00\% < TAFM_n < 98.50\%$

$$AFC \times (NDM_n / NDY) \times (1)$$

c) For $TAFM_n: 98.50\% < TAFM_n \leq 99.75\%$

$$AFC \times (NDM_n / NDY) \times (TAFM_n / 98.50\%)$$

d) For $TAFM_n > 99.75\%$

$$AFC \times (NDM_n / NDY) \times (99.75\% / 98.50\%)$$

Where,

AFC = Annual Fixed Cost specified for the year in Rupees

NDM_n = Number of days in nth month

NDY = Number of days in the year

$TAFM_n$ = Transmission System availability factor for the nth month, in percent computed in accordance with Appendix IV.

For HVDC bi-pole links and HVDC back-to-back Stations:

$$TC_1 = AFC \times (NDM_1 / NDY) \times (TAFM_1 / NATAF)$$

$$TC_2 = AFC \times (NDM_2 / NDY) \times (TAFM_2 / NATAF) - TC_1$$

$$TC_3 = AFC \times (NDM_3 / NDY) \times (TAFM_3 / NATAF) - (TC_1 + TC_2)$$

$$TC_4 = AFC \times (NDM_4 / NDY) \times (TAFM_4 / NATAF) - (TC_1 + TC_2 + TC_3)$$

.....

$$TC_{11} = AFC \times (NDM_{11}/NDY) \times (TAFM_{11}/NATAF) - (TC_1+TC_2+....+TC_{10})$$

$$TC_{12} = AFC \times (TAFY/NATAF) - (TC_1+TC_2+....+TC_{11});$$

If,

- (i) TAFM: $95.00\% < TAFM < 97.50\%$, then $TAFM=NATAF$;
- (ii) TAFM: $97.50\% \leq TAFM \leq 99.75\%$, then $NATAF=97.50\%$; and
- (iii) For $TAFM \geq 99.75\%$, then $TAFM=99.75\%$ and $NATAF= 97.50\%$.

Where,

TC_n = Transmission charges inclusive of incentive up to the nth month

AFC = Annual fixed cost specified for the year in rupees

$NATAF$ = Normative Annual Transmission Availability Factor in percentage

NDM_n = No of days up to the end of the nth month of the financial year

NDY = No. of days in the year

$TAFM_n$ = Transmission availability factor up to the end of the nth month of the year in percentage computed in accordance with Appendix -IV

$TAFY$ = Transmission availability factor in per cent for the year.

- (3) The transmission charges shall be calculated separately for part of the transmission system having different NATAF and aggregated thereafter, according to their sharing by the long term customers or DICs or GNA grantee. The charges of the communication system shall be a part of the transmission charges and shall be shared by the long term customers.

68. **Deviation Charges:** (1) Variations between actual net injection and scheduled net injection for the generating stations, and variations between actual net drawl and scheduled net drawl for the beneficiaries shall be treated as their respective deviations and charges for such deviations shall be governed by the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related matters) Regulations, 2022.

(2) The actual net deviation of every generating station and Beneficiary shall be metered on its periphery through special energy meters (SEMs) installed by the Central Transmission Utility (CTU), and computed in MWh for each 15-minute time block by the concerned Regional Load Despatch Centre.

CHAPTER - 12

NORMS OF OPERATION

69. **Recovery of Tariff and Incentive:** (1) Recovery of capacity charge, energy charge, supplementary capacity charge, supplementary energy charge, transmission charge and incentive by the generating company and the transmission licensee shall be based on the achievement of the operational norms specified in the Regulation 70 to Regulation 72 of these regulations.

(2) The Commission may on its own revise the norms of Station Heat Rate specified in Regulation 70(C) of these regulations in respect of any of the generating stations for which relaxed norms have been specified.

Norms of operation for thermal generating station

70. The norms of operation as given hereunder shall apply to thermal generating stations:

(A) **Normative Annual Plant Availability Factor (NAPAF)**

(a) 85% for all thermal generating stations, except those covered under clauses (b), (c), (d) and (e);

(b) 83% for coal and lignite based generating stations completing 30 years from COD as on 31.03.2024;

(c) For the following Gas based Thermal generating stations of NEEPCO:

Assam GPS	70%
Agartala GPS	85%
Tripura GPS	85%

(d) Lignite fired generating stations using Circulatory Fluidized Bed Combustion (CFBC)

Technology and generating stations based on coal rejects:

1. First Three years from the date of commercial operation – 68.50%
2. After completion of three years of the date of commercial operation - 75%

(e) For following lignite fired thermal generating stations of NLC India Ltd.

1. TPS-II State-I and Stage-II : 80%
2. Barsingsar (CFBC) : 75%
3. TPS-II Expansion (CFBC) : 70%
4. TPS-1 Expansion : 85%
5. New Neyveli TPS : 80%

(B) **Normative Annual Plant Load Factor (NAPLF) for Incentive:**

- (a) 85% for all thermal generating stations, except for those covered under clause (b) below
- (b) 83% for coal and lignite based generating stations completing 30 years from COD as on 31.03.2024

(C) **Gross Station Heat Rate:**

(a) **Existing Thermal Generating Stations achieving COD before 1.4.2009**

- (i) For Coal-based Thermal generating stations other than those covered under clause (ii) below:

200-300 MW Sets	500 MW Sets (Sub-critical)
2,415kCal/kWh	2,375kCal/kWh

Note 1

In respect of 500 MW and above units where the boiler feed pumps are electrically operated, the gross station heat rate shall be 40 kCal/kWh lower than the gross station heat rate specified above.

Note 2

For the generating stations having combination of 200/210/250 MW and above sets and 500 MW and above sets, the normative gross station heat rate shall be the weighted average gross station heat rate of the combinations.

Note 3

The normative gross station heat rate above is exclusive of the compensation specified as per the Grid Code. The generating company shall, based on the unit loading factor, consider the compensation in addition to the normative gross heat rate above.

Note 4

The gross station heat rate for the unit capacity of less than 200 MW sets, shall be dealt with on a case-to-case basis.

(ii) For the following Thermal generating stations of NTPC Ltd:

Tanda TPS	2,750 kCal/kWh
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(iii) Lignite-fired Thermal Generating Stations:

TPS-II (Stg I & II) : 2,880 kCal/kWh

TPS-I (Expansion) : 2,710 kCal/kWh

- (iv) Open Cycle Gas Turbine/Combined Cycle Generating Stations: For the following gas-based thermal generating stations:

Name of generating station	Combined cycle (kCal/kWh)	Open Cycle (kCal/kWh)
Gandhar GPS	2,040	2,960
Kawas GPS	2,050	3,010
Anta GPS	2,075	3,010
Dadri GPS	2,000	3,010
Auraiya GPS	2,100	3,045
Faridabad GPS	1,975	2,900
Kayamkulam GPS	2,000	2,900
Assam GPS	2,600	3,578
Agartala GPS	2,600	3,578
Ratnagiri	1,820	2,641

(b) **Thermal Generating Stations achieving COD on or after 1.4.2009:**

- (i) For Coal-based and lignite-fired Thermal Generating Stations:

For 200-300 MW Sets. : 1.05 X Design Heat Rate (kCal/kWh)

For 500 MW Sets and above: 1.045 X Design Heat Rate (kCal/kWh)

Where the Design Heat Rate of a generating unit means the unit heat rate guaranteed by the supplier at conditions of 100% MCR, zero per cent make up, design coal and design cooling water temperature/back pressure.

Provided that depending upon the pressure and temperature ratings of the units, the maximum design turbine cycle heat rate and minimum design boiler efficiency shall be as per the table below:

Pressure Rating (Kg/cm ²)	150	170	170
SHT/RHT (°C)	535/535	537/537	537/565
Type of BFP	Electrical Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1955	1950	1935
Min. Boiler Efficiency			
Sub-Bituminous Indian Coal (%)	86	86	86
Bituminous Imported Coal (%)	89	89	89

Pressure Rating (Kg/cm ²)	247	247	260	270	270
SHT/RHT (°C)	537/565	565/593	593/593	593/593	600/600
Type of BFP	Turbine Driven	Turbine Driven	Turbine Driven	Turbine Driven	Turbine Driven
Max Turbine Heat Rate (kCal/kWh)	1900	1850	1814	1810	1790
Min. Boiler Efficiency (%)					
Sub-Bituminous Indian Coal (%)	86.00	86.00	86.00	86.50	86.50
Bituminous Imported Coal (%)	89.00	89.00	89.50	89.50	89.50

** For Lignite fired thermal generating station, the minimum boiler efficiency shall be 76% (for pulverised) and 80% (for fluidised bed) based boilers.*

In case designed turbine cycle heat rate and boiler efficiency are better than these values, the same shall be considered for calculation of design unit heat rate.

Provided further that in case the pressure and temperature parameters of a unit are different from the above ratings, the maximum design heat rate of the unit of the nearest class shall be taken:

Provided also that where the heat rate of the unit has not been guaranteed but turbine cycle heat rate and boiler efficiency are guaranteed separately by the same supplier or different suppliers,

the design heat rate of the unit shall be arrived at by using guaranteed turbine cycle heat rate and boiler efficiency:

Provided also that where the boiler efficiency is lower than 86% for Sub-bituminous Indian coal and 89% for bituminous imported coal, the same shall be considered as 86% and 89% for Sub-bituminous Indian coal and bituminous imported coal, respectively, for computation of station heat rate:

Provided units based on a dry cooling system, the maximum turbine cycle heat rate shall be considered as per the actual design or 6% higher than the values given in the table above, whichever is lower;

Provided also that in the case of coal based generating station, if one or more generating units were declared under commercial operation prior to 1.4.2024, the heat rate norms for those generating units as well as generating units declared under commercial operation on or after 1.4.2024 shall be lowest of the heat rate norms considered by the Commission during tariff period 2019-24 or those arrived at by above methodology or the norms as per the sub-clause (C)(a)(i) of this Regulation:

Provided also that for Generating stations based on coal rejects, the Commission shall approve the Station Heat Rate on a case-to-case basis.

Note: In respect of generating units where the boiler feed pumps are electrically operated, the maximum design heat rate of the unit shall be 40 kCal/kWh lower than the maximum design heat rate of the unit specified above with turbine driven Boiler Feed Pump.

(ii) For the following Thermal generating stations of NTPC Ltd:

Kanti TPS	2,500 kCal/kWh
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(iii) For the following lignite generating stations of NLC India Ltd:

Barsingsar (2X125 MW)	2,525 kCal/kWh
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(c) **For Gas-based/ Liquid based Thermal Generating Unit(s)/ Block(s) having COD on or after 1.4.2009:**

For Natural Gas and RLNG= 1.050 X Design Heat Rate of the unit/block (kCal/kWh)

For Liquid Fuel=1.071 X Design Heat Rate of the unit/block for Liquid Fuel (kCal/kWh)

Where the Design Heat Rate of a unit shall mean the guaranteed heat rate for a unit at 100% MCR and at site ambient conditions, and the Design Heat Rate of a block shall mean the guaranteed heat rate for a block at 100% MCR, site ambient conditions, zero per cent make up, design cooling water temperature/back pressure.

(d) The Gross Station Heat Rate norms as specified in sub-clauses (a) and (b) of this clause, in respect of the coal and lignite based generating stations or units thereof (except for the generating stations or units thereof for which relaxed norms have been specified) and commissioned till 31.3.2024 (before 2009 and after 2009) shall remain applicable for such generating stations or units thereof for the remaining operational life of the respective generating stations or units thereof.

(D) **Secondary Fuel Oil Consumption:**

(a) For Coal-based generating stations: 0.50 ml/kWh

(b) For Coal-based generating stations with wall (front/rear/sides) fired boilers: 1.00 ml/kWh

(c) For Lignite-fired generating stations (Pulverised and CFBC): 1.0 ml/kWh

(d) For Coal-based generating stations of DVC:

Mejia TPS (Unit 1 to 3)	1.00 ml/kWh
Mejia TPS (Unit 4)	1.00 ml/kWh

(e) For Generating Stations based on Coal Rejects: 2.0 ml/kWh

(E) Auxiliary Energy Consumption:

(a) For Coal-based generating stations except at (b) below:

S. No.	Generating Station	With Natural Draft cooling tower or without cooling tower
(i)	200-300 MW series	8.50%
(ii)	300/ 330/ 350/ 500 MW and above	
	Steam driven boiler feed pumps	5.25%
	Electrically driven boiler feed pumps	8.00%
(iii)	600 MW and above	
	Steam driven boiler feed pumps	5.25%
	Electrically driven boiler feed pumps	8.00%

Provided that for thermal generating stations with induced draft cooling towers and where ball and tube-type coal mill is used, the norms shall be further increased by 0.5% and 0.8%, respectively:

Provided further that Additional Auxiliary Energy Consumption as follows shall be allowed for plants with Dry Cooling Systems:

Type of Dry Cooling System	(% of gross generation)
Direct cooling air cooled condensers with mechanical draft fans	1.0%
Indirect cooling system employing jet condensers with pressure recovery turbine and natural draft tower	0.5%

Note: The auxiliary energy consumption for the unit capacity of less than 200 MW sets shall be dealt with on a case-to-case basis.

(b) For other Coal-based generating stations:

(i)	Tanda Thermal Power Station	12.00%
(ii)	Chandrapur TPS (2x250 MW) (DVC)	9.50%

(c) For Gas Turbine /Combined Cycle generating stations:

(i) Combined Cycle : 2.75%

(ii) Open Cycle : 1.00%

Provided that where the gas based generating station is using electric motor driven Gas Booster Compressor, the Auxiliary Energy Consumption in case of Combined Cycle mode shall be 3.30% (including the impact of air-cooled condensers for Steam Turbine Generators):

Provided further that an additional Auxiliary Energy Consumption of 0.35% shall be allowed for Combined Cycle Generating Stations having direct cooling air cooled condensers with mechanical draft fans.

(iii) Tripura CCPP : 3.50%

(iv) OTPC Palatana CCPP : 3.50%

(d) For Lignite-fired thermal generating stations:

(i) For all generating stations with 200 MW sets and above:

The auxiliary energy consumption norms shall be 0.5 percentage points more than the auxiliary energy consumption norms of coal-based generating stations at (E) (a) above.

Provided that for the lignite fired stations using CFBC technology, the auxiliary energy consumption norms shall be 1.5 percentage points more than the auxiliary energy consumption norms of coal-based generating stations at (E) (a) above.

- (ii) For Barsingsar Generating station of NEC using CFBC technology: 12.50%
- (iii) For TPS-I (Expansion) and TPS-II Stage-I&II of NLC India Ltd.:

TPS-II Stage-I and Stage-II	10.00%
TPS-II (Expansion)	12.50%

- (e) For Generating Stations based on coal rejects: 10%

(f) Norms of Auxiliary energy consumption for the emission control system (AUX_{en}) of thermal generating stations:

Name of Technology	AUX_{en} (as % of gross generation)
(1) For reduction of emission of Sulphur dioxide:	
a) Wet Limestone based FGD system (without Gas to Gas heater)	1.0%
b) Lime Spray Dryer or Semi dry FGD System	1.0%
c) Dry Sorbent Injection System (using Sodium bicarbonate)	NIL
d) For CFBC Power plant (furnace injection)	NIL
e) Sea water based FGD system (without Gas to Gas heater)	1.00%
(2) For reduction of emission of oxide of nitrogen:	
a) Selective Non-Catalytic Reduction system	NIL
b) Selective Catalytic Reduction system	0.2%

Provided that where the technology is installed with a "Gas to Gas" heater, AUX_{en} specified above shall be increased by 0.20% of gross generation.

(F) Norms for consumption of reagent:

(1) The normative consumption of specific reagents for various technologies for the reduction of emission of sulphur dioxide shall be as under:

(a) For Wet Limestone based Flue Gas De-sulphurisation (FGD) system: The specific limestone consumption (g/kWh) shall be worked out by following the formula:

$$\frac{[K \times \text{Normative heat rate (kcal/kWh)} \times \text{Sulphur content of coal (\%)} / \text{CVPF in kCal/Kg}] \times [85/\text{LP}]}{\text{g/kWh}}$$

Where,

GCV = (a) Weighted Average Gross calorific value of coal in kCal per kg for coal based thermal generating stations computed in accordance with Regulation 60 of these regulations;

(b) Weighted Average Gross calorific value of lignite as received, in kCal per kg, as applicable for lignite based thermal generating stations:

Provided that the value of K shall be equivalent to $(35.2 \times \text{Design SO}_2 \text{ Removal Efficiency} / 96\%)$ to comply with the SO₂ emission norm of 100/200 mg/Nm³ or $(26.8 \times \text{Design SO}_2 \text{ Removal Efficiency} / 73\%)$ for units to comply with the SO₂ emission norm of 600 mg/Nm³;

Provided further that the limestone purity shall not be less than 85%.

(b) For Lime Spray Dryer or Semi-dry Flue Gas Desulphurisation (FGD) system: The specific lime consumption shall be worked out based on minimum purity of lime (LP) as at 90% or more by applying formula $[6 \times 90/\text{LP}] \text{ g/kWh}$;

(c) For Dry Sorbent Injection System (using sodium bicarbonate): The specific consumption of sodium bicarbonate shall be 12 g per kWh at 100% purity.

(d) For CFBC Technology (furnace injection) based generating station: The specific limestone consumption for CFBC based generating station (furnace injection) shall be computed with the following formula:

$$[62.9 \times S \times \text{SHR} / \text{CVPF}] \times [85 / \text{LP}]$$

Where

S = Sulphur content in percentage,

LP = Limestone Purity in percentage,

SHR = Gross station heat rate, in kCal per kWh,

CVPF = (a) Weighted Average Gross calorific value of lignite as received, in kCal per kg as applicable for lignite based thermal generating stations;

(e) For Sea Water based Flue Gas Desulphurisation (FGD) system: The reagent used in sea water based Flue Gas Desulphurisation (FGD) system shall be NIL

(2) The normative consumption of specific reagent for various technologies for the reduction of emission of oxide of nitrogen shall be as below:

(a) For Selective Non-Catalytic Reduction (SNCR) System: The specific urea consumption of the SNCR system shall be 1.2 g per kWh at 100% purity of urea.

(b) For Selective Catalytic Reduction (SCR) System: The specific ammonia consumption of the SCR system shall be 0.6 g per kWh at 100% purity of ammonia.

71. Norms of Operation for Hydro Generating Stations: The norms of operation as given hereunder shall apply to hydro generating stations:

(A) Normative Annual Plant Availability Factor (NAPAF): (1) The following normative annual plant availability factor (NAPAF) shall apply to hydro generating station:

(a) Storage and Pondage type plants with head variation between Full Reservoir Level (FRL) and Minimum Draw Down Level (MDDL) of up to 8%, and where plant availability is not affected by silt: 90%;

(b) In the case of storage and pondage type plants with head variation between full reservoir level and minimum draw down level is more than 8% and when plant availability is not affected by silt, the month-wise peaking capability as provided by the project authorities in the DPR (approved by CEA or the State Government) shall form the basis of fixation of NAPAF;

(c) Pondage type plants where plant availability is significantly affected by silt: 85%.

Run-of-river generating stations: NAPAF to be determined plant-wise, based on 10-day design energy data, moderated by past experience where available/relevant.

(2) A further allowance may be made by the Commission in NAPAF determination under special circumstances, e.g. abnormal silt problem or other operating conditions, and known plant limitations.

(3) A further allowance of 5% may be allowed for difficulties in North East Region.

(4) Based on the above, the Normative annual plant availability factor (NAPAF) of the hydro generating stations already in operation shall be as follows: -

Station	Type of Plant	Plant Capacity No. of Units x MW	NAPAF (%)
THDC			
THPS	Storage	4x250	77
KHEP	Storage	4x100	66
NHPC			
Station	Type of Plant	Plant Capacity No. of Units x MW	NAPAF (%)
Bairasul	Pondage	3x60	85
Loktak	Pondage	3x35	88
Salal	ROR	6x115	70
Tanakpur	ROR	3x31.4	70
Chamera-I	Pondage	3x180	90

Station	Type of Plant	Plant Capacity No. of Units x MW	NAPAF (%)
Uri I	ROR	4x120	80
Rangit	Pondage	3x20	90
Chamera-II	Pondage	3x100	87
Dhauliganga	Pondage	4x70	85
Dulhasti	Pondage	3x130	90
Teesta-V	Pondage	3x170	87
Sewa-II	Pondage	3x40	86
TLDP III	Pondage	4x33	80
Chamera III	Pondage	3x77	87
Chutak	ROR	4x11	48
Nimmo Bazgo	Pondage	3x15	70
Uri II	ROR	4x60	80
Parbati III	Pondage	4x130	45
TLDP IV	ROR with Pondage	4x40	90
Kishanganga	ROR with Pondage	3x110	83
Teesta III	Pondage	6x200	85
NHDC			
Indira Sagar	Storage	8x125	87
Omkareshwar	Pondage	8x65	90
NEEPCO			
Kopili I	Storage	4x50	69
Khandong	Storage	2x25	67
Kopili II	Storage	1x25	69
Doyang	Storage	3x25	65
Ranganadi	Pondage	3x135	85
Tuirial	Storage	2x30	75
NTPC			
Koldam	Storage	4x200	90
SJVNL			
Nathpa Jhakri	Pondage	6x250	87
Rampur	Pondage	6x68.67	83
DVC			
Panchet	Storage	2x40	80
Tilaya	Storage	2x2	80
Maithon	Storage	3x20	80
Karcham Wangtoo	ROR with	4x261.25	90

Station	Type of Plant	Plant Capacity No. of Units x MW	NAPAF (%)
	Pondage		

(B) In the case of pumped storage hydro generating stations, the quantum of electricity required for pumping water from the down-stream reservoir to the up-stream reservoir shall be arranged by the beneficiaries duly taking into account the transmission and distribution losses up to the bus bar of the generating station. In return, beneficiaries shall be entitled to an equivalent energy of 75% of the energy utilized in pumping the water from the lower elevation reservoir to the higher elevation reservoir from the generating station during peak hours, and the generating station shall be under obligation to supply such quantum of electricity during peak hours:

Provided that in the event of the beneficiaries failing to supply the desired level of energy during off-peak hours, there will be a pro-rata reduction in their energy entitlement from the station during peak hours:

Provided further that the beneficiaries may assign or surrender their share of capacity in the generating station, in part or in full, or the capacity may be reallocated by the Central Government, and in that event, the owner or assignee of the capacity share shall be responsible for arranging the equivalent energy to the generating station in off-peak hours, and be entitled to corresponding energy during peak hours in the same way as the original beneficiary was entitled.

(C) Auxiliary Energy Consumption (AEC):

Type of Station	AEC	
	Installed Capacity above 200 MW	Installed Capacity upto 200 MW
Surface		
Rotating Excitation	0.7%	0.7%
Static	1.0%	1.2%
Underground		

Type of Station	AEC	
	Installed Capacity above 200 MW	Installed Capacity upto 200 MW
Rotating Excitation	0.9%	0.9%
Static	1.2%	1.3%

* AEC for Tuirial HPS = 4%

Norms of operation for transmission system

72. Normative Annual Transmission System Availability Factor (NATAF):

(a) For recovery of Annual Fixed Cost, NATAF shall be as under:

- (1) AC system: 98.00%;
- (2) HVDC bi-pole links 95.00% and HVDC back-to-back stations: 95.00%:

Provided that the normative annual transmission availability factor of the HVDC bi-pole links shall be 85% for the first twelve months from the date of commercial operation.

(b) For Incentive, NATAF shall be as under:

- (1) AC system: 98.50%;
- (2) HVDC bi-pole links and HVDC back-to-back Stations: 97.50%:

Provided that no Incentive shall be payable for availability beyond 99.75%:

Provided further that for AC and HVDC system, actual outage hours shall be considered for computation of availability up to two tripping per year. After two tripping in a year, for every tripping, an additional 12 hours of outage shall be considered in addition to the actual outage hours:

Provided also that in case of an outage of a transmission element affecting evacuation of power from a generating station, outage hours shall be multiplied by a factor of 2.

73. Auxiliary Energy Consumption in the Sub-station

(1) AC System: The charges for auxiliary energy consumption in the AC sub-station for the purpose of air-conditioning, lighting and consumption in other equipment shall be borne by the transmission licensee and included in the normative operation and maintenance expenses.

(2) HVDC sub-station: For auxiliary energy consumption in HVDC sub-stations, the Central Government may allocate an appropriate share from one or more ISGS. The charges for such power shall be borne by the transmission licensee from the normative operation and maintenance expenses.

CHAPTER - 13

SCHEDULING, ACCOUNTING AND BILLING

74. **Scheduling:** The methodology for scheduling and dispatch for the generating station shall be as specified in the Grid Code.

75. **Metering and Accounting:** For metering and accounting, the provisions of the Grid Code shall be applicable.

76. **Billing and Payment of charges:** (1) Bills shall be raised for capacity charge and energy charge by the generating company and for transmission charge by the transmission licensee on a monthly basis in accordance with these regulations, and payments shall be made by the beneficiaries or the long term customers directly to the generating company or the transmission licensee, as the case may be:

EXPLANATION-I: The physical copy of the Bill in Original at the office of the Authorised Person of the beneficiary or long term customer, as the case may be, or the scanned copy of the Original Bill through the official email ID of the Authorised Signatory of the Generating Company or the Transmission Licensee, as the case may be, shall be recognized as a valid mode of presentation of Bill:

EXPLANATION-II: Authorized Signatory or Signatories (official designation only) shall be notified in advance by the Managing Director or Chief Executive Officer of the Company, and any change in the list of Authorised Signatories for the purpose shall be communicated in the same manner.

(2) Payment of the capacity charge for a thermal generating station shall be shared by the beneficiaries of the generating station as per their percentage shares for the month (inclusive of any

allocation out of the unallocated capacity) in the installed capacity of the generating station. Payment of capacity charge and energy charge for a hydro generating station shall be shared by the beneficiaries of the generating station in proportion to their shares (inclusive of any allocation out of the unallocated capacity) in the saleable capacity (to be determined after deducting the capacity corresponding to free energy to home State as per Note 3 herein.

EXPLANATION-I: Shares or allocations of each beneficiary in the total capacity of Central sector generating stations shall be as determined by the Central Government, inclusive of any allocation made out of the unallocated capacity. The shares shall be applied in percentages of installed capacity and shall normally remain constant for a month. Based on the decision of the Central Government, the changes in allocation shall be communicated by the Member-Secretary, Regional Power Committee in advance, at least three days prior to the beginning of a calendar month, except in case of an emergency call for an urgent change in allocations out of unallocated capacity. The total capacity share of a beneficiary would be the sum of its capacity share plus allocation out of the unallocated portion.

EXPLANATION-II: The beneficiaries may propose surrendering part of their allocated firm share to other States within or outside the region. In such cases, depending upon the technical feasibility of power transfer and specific agreements reached by the generating company with other States within or outside the region for such transfers, the shares of the beneficiaries may be re-allocated by the Central Government for a specific period (in complete months) from the beginning of a calendar month. When such re-allocations are made, the beneficiaries who surrender the share shall not be liable to pay capacity charges for the surrendered share. The capacity charges for the capacity surrendered and reallocated as above shall be paid by the State(s) to whom the surrendered capacity is allocated. Except for the period of reallocation of capacity as above, the beneficiaries of the

generating station shall continue to pay the full capacity charges as per allocated capacity shares. Any such reallocation and its reversion shall be communicated to all concerned by the Member Secretary, Regional Power Committee in advance, at least three days prior to such reallocation or reversion taking effect.

EXPLANATION-III: FEHS = Free energy for home State, in per cent and shall be taken as 13% or actual, whichever is less.

Provided that in cases where the site of a hydro project is awarded to a developer, by the State Government by following a two-stage transparent process of bidding, the 'free energy' shall be taken as 13%, in addition to an energy corresponding to 100 units of electricity to be provided free of cost every month to every project affected family for a period of 10 years from the date of commercial operation of the generating station:

Provided further that the generating company shall submit a detailed quantification of energy corresponding to 100 units of electricity to be provided free of cost every month to every month to every project-affected family for a period of 10 years from the date of commercial operation.

77. **Recovery of Statutory Charges:** The generating company shall recover the statutory charges imposed by the State and Central Government, such as electricity duty and water cess, by considering normative parameters specified in these regulations. In case the electricity duty is applied to the auxiliary energy consumption, such amount of electricity duty shall apply to the normative auxiliary energy consumption of the generating station (excluding colony consumption) and apportioned to each of the beneficiaries in proportion to their scheduled dispatch during the month.

78. **Sharing of Transmission Charges:** (1) The sharing of transmission charges shall be governed by the Sharing Regulations.

(2) The charges determined under these regulations in relation to the communication system forming part of the transmission system shall be shared by the beneficiaries or long term customers in accordance with the Sharing Regulations:

Provided that charges determined under these regulations in relation to communication systems other than that of the central portion shall be shared by the beneficiaries in proportion to the capital cost belonging to respective beneficiaries.

79. **Rebate:** (1) For payment of bills of the generating company and the transmission licensee through letter of credit on presentation or through National Electronic Fund Transfer (NEFT) or Real Time Gross Settlement (RTGS) payment mode within a period of 5 days of presentation of bills by the generating company or the transmission licensee, a rebate of 1.50% shall be allowed.

Provided that in case a different Rebate mechanism is provided in the PPA, the same shall be governed by the provisions of the PPA.

Explanation: In case of computation of '5 days', the number of days shall be counted consecutively without considering any holiday. However, in case the last day or day is an official holiday, the 5th day for the purpose of Rebate shall be construed as the immediate succeeding working day (as per the official State Government's calendar, where the Office of the Authorised Signatory or Representative of the Beneficiary, for the purpose of receipt or acknowledgement of Bill is situated).

(2) Where payments are made on any day after 5 days and within a period of 30 days of presentation of bills by the generating company or the transmission licensee, a rebate of 1% shall be allowed.

80. **Late payment surcharge:** (1) In case the payment of any bill for charges payable under these regulations is delayed by a beneficiary or long term customer as the case may be, beyond a period

of 45 days from the date of presentation of bills, a late payment surcharge as specified in the Ministry of Power – Electricity (Late Payment Surcharge and Related Matters) Rules, 2022 as amended from time to time shall be levied by the generating company or the transmission licensee, as the case may be.

Provided that in case a different LPS mechanism is provided in the PPA, the same shall be governed by the provisions of the PPA.

(2) Unless otherwise agreed by the parties, the charges payable by a beneficiary or long term customer shall be first adjusted towards a late payment surcharge on the outstanding charges and, thereafter, towards monthly charges billed by the generating company or the transmission licensee, as the case may be, starting from the longest overdue bill.

CHAPTER – 14

SHARING OF BENEFITS

81. **Sharing of gains due to variation in norms:** (1) The generating company or the transmission licensee shall work out gains based on the actual performance of applicable Controllable parameters as under:

- i) Station Heat Rate;
- ii) Secondary Fuel Oil Consumption; and
- iii) Auxiliary Energy Consumption.

(2) The financial gains by the generating company or the transmission licensee, as the case may be, on account of controllable parameters shall be shared between the generating company or transmission licensee and the beneficiaries or long term customers, as the case may be on an annual basis. The financial gains computed as per the following formulae in the case of generating stations other than hydro generating stations on account of operational parameters as shown in Clause (1) of this Regulation shall be shared in the ratio of 1:1 between the generating stations and beneficiaries.

$$\text{Net Gain} = (\text{ECRN} - \text{ECRA}) \times \text{Scheduled Generation}$$

Where,

ECRN = Normative Energy Charge Rate computed on the basis of norms specified for Station Heat Rate, Auxiliary Energy Consumption and Secondary Fuel Oil consumption.

ECRA = Actual Energy Charge Rate computed on the basis of actual Station Heat Rate, actual Auxiliary Energy Consumption and actual Secondary Fuel Oil Consumption.

Provided that in the case of hydro generating stations, the net gain on account of Actual

Auxiliary Energy Consumption being less than the Normative Auxiliary Energy Consumption shall be computed as per the following formulae provided the saleable scheduled generation is more than the saleable design energy and shall be shared in the ratio of 1:1 between generating station and beneficiaries:

- (i) When saleable scheduled generation is more than saleable design energy on the basis of normative auxiliary energy consumption and less than or equal to saleable design energy on the basis of actual auxiliary energy consumption:

$$\text{Net gain (Million Rupees)} = [(\text{Saleable Scheduled generation in MUs}) - (\text{Saleable Design energy on the basis of normative auxiliary energy consumption in MUs})] \times [1.30 \text{ or ECR, whichever is lower}]$$

- (ii) When saleable scheduled generation is more than saleable design energy on the basis of actual auxiliary energy consumption:

$$\text{Net gain (Million Rupees)} = \{ \text{Saleable Scheduled generation in MUs} - [(\text{Saleable Scheduled Generation in MUs} \times (100 - \text{normative AEC in \%}) / (100 \text{ actual AEC in \%}))] \} \times [1.30 \text{ or ECR, whichever is lower}]$$

82. **Sharing of savings in interest due to re-financing or restructuring of loan :**(1) If re-financing or restructuring of loan by the generating company or the transmission licensee, as the case may be, results in net savings on interest after accounting for cost associated with such refinancing or restructuring, the same shall be shared between the generating company or the transmission licensee and the beneficiaries, as the case may be, in the ratio of 1:1.

(2) In case of dispute, any of the parties may make an application in accordance with the Central Electricity Regulatory Commission (Conduct of Business) Regulations, 2023 for settlement of the

dispute:

Provided that the beneficiaries or the long term customers shall not withhold any payment on account of the interest claimed by the generating company or the transmission licensee during the pendency of any dispute arising out of re-financing of the loan.

83. Sharing of net gains referred to in Regulation 48(3)(e) and Regulation 49(1)(l) of Grid Code, unless specifically provided in the rules or the guidelines issued by the Central Government, shall be in the ratio of 1:1.

84. **Sharing of Non-Tariff Income:** The non-tariff net income in case of generating station and transmission system from rent of land or buildings, eco-tourism, sale of scrap, and advertisements shall be shared between the generating company or the transmission licensee and the beneficiaries or the long term customers, as the case may be, in the ratio of 1:1.

85. **Sharing of Clean Development Mechanism Benefits:** The proceeds of carbon credit from approved emission reduction projects under the Clean Development Mechanism shall be shared in the following manner:

(a) 100% of the gross proceeds on account of CDM to be retained by the project developer in the first year after the date of commercial operation of the generating station or the transmission system, as the case may be;

(b) In the second year, the share of the beneficiaries shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the generating company or the transmission licensee, as the case may be, and the beneficiaries.

86. **Sharing of income from other business of transmission licensee:** The income from other

business of the transmission licensee shall be shared with the long term customer in the manner as specified in the Central Electricity Regulatory Commission (Sharing of revenue derived from utilization of transmission assets for other business) Regulations, 2020.

CHAPTER 15

MISCELLANEOUS PROVISIONS

87. **Operational Norms to be ceiling norms:** Operational norms specified in these regulations are the ceiling norms and shall not preclude the generating company or the transmission licensee, as the case may be, and the beneficiaries and the long-term customers from agreeing to the improved norms and in case the improved norms are agreed to, such improved norms shall be applicable for determination of tariff.

88. **Deviation from ceiling tariff:** (1) The tariff determined in these regulations shall be a ceiling tariff. The generating company or the transmission licensee and the beneficiaries or the long-term customer, as the case may be, may mutually agree to charge a lower tariff.

(2) The generating company or the transmission licensee, may opt to charge a lower tariff for a period not exceeding the validity of these regulations on agreeing to deviation from operational parameters, reduction in operation and maintenance expenses, reduced return on equity and incentive specified in these regulations.

(3) If the generating company or the transmission licensee opts to charge a lower tariff for a period not exceeding the validity of these regulations on account of lower depreciation based on the requirement of repayment in such case, the unrecovered depreciation on account of reduction of depreciation by the generating company or the transmission licensee during useful life shall be allowed to be recovered after the useful life in these regulations.

- (4) The deviation from the ceiling tariff specified by the Commission, shall come into effect from the date agreed to by the generating company or the transmission licensee and the beneficiaries or the long-term customer, as the case may be.
- (5) The generating company and the beneficiaries of a generating station or the transmission licensee and the long term customer of the transmission system shall be required to approach the Commission for charging a lower tariff in accordance with clauses (1) to (3) above. The details of the accounts and the tariff actually charged under clauses (1) to (3) shall be submitted at the time of true up.
- (6) Where a generating company and its beneficiaries or a transmission licensee and its long-term customers have mutually agreed to charge a lower tariff in respect of a particular generating station or transmission system in terms of Clauses (1) to (3) of this Regulation, the said agreed tariff shall not be revised upwards at the time of truing up based on the capital cost and additional capital expenditures in accordance with these regulations:

Provided that where the trued up tariff is lower than the agreed tariff, the generating company or the transmission licensee shall charge such trued-up tariff only:

Provided further that the difference between the agreed tariff and the trued-up tariff shall be settled between the parties in accordance with Regulations 10(7) and 10(8) of these regulations.

89. **Deferred Tax liability with respect to the previous tariff period:** Deferred tax liabilities for the period up to 31st March 2009, whenever they materialise, shall be recoverable directly by the generating companies or transmission licensees from the then beneficiaries or long term customers, as the case may be. Deferred tax liabilities for the period arising from 1.4.2009 to 31.3.2024, if any, shall not be recoverable from the beneficiaries or the long term customers, as the case may be.

90. **Hedging of Foreign Exchange Rate Variation:** (1) The generating company or the

transmission licensee, as the case may be, may hedge foreign exchange exposure in respect of the interest and repayment of foreign currency loan taken for the generating station or the transmission system, in part or in full at their discretion.

(2) If the petitioner enters into hedging arrangement(s) based on its approved hedging policy, the petitioner shall communicate to the beneficiaries concerned, of entering into such arrangement(s) within thirty days.

(3) Every generating company and transmission licensee shall recover the cost of hedging of foreign exchange rate variation corresponding to the normative foreign debt, in the relevant year on a year-to-year basis as expense in the period in which it arises and extra rupee liability corresponding to such foreign exchange rate variation shall not be allowed against foreign debt.

(4) To the extent the generating company or the transmission licensee is not able to hedge the foreign exchange exposure, the extra rupee liability towards interest payment and loan repayment corresponding to the normative foreign currency loan in the relevant year shall be permissible, provided it is not attributable to the generating company or the transmission licensee or its suppliers or contractors.

91. **Award of Arbitration:** In cases where there is a liability with respect to capital works on account of award of arbitration having principal amount along with interest payment, the principal amount actually paid shall be capitalised.

Provided that any interest amount associated with the arbitration award and actually paid shall be recovered in instalments along with carrying cost at the rate specified under Regulation 10(6) and 10(7) of these Regulations.

Provided further that such number of instalments shall be decided by the Commission on a case-to-case basis depending upon the amount to be reimbursed.

92. **Recovery of the cost of hedging or Foreign Exchange Rate Variation (FERV):**

(1) Every generating company and the transmission licensee shall recover the cost of hedging and foreign exchange rate variation on a year-to-year basis as income or expense in the period in which it arises.

(2) Recovery of the cost of hedging or foreign exchange rate variation shall be made directly by the generating company or the transmission licensee, as the case may be, from the beneficiaries or the long term customers, as the case may be, without making any application before the Commission:

Provided that in case of any objections by the beneficiaries or the long term customers, as the case may be, to the amounts claimed on account of the cost of hedging or foreign exchange rate variation, the generating company or the transmission licensee, as the case may be, may make an appropriate application before the Commission for its decision.

93. **Approval Process of Non-ISTS Lines carrying Inter-State Power:**

Existing intra-state transmission lines other than Natural ISTS lines, as certified by CEA based on the recommendations of the STU and RPC, shall be considered as ISTS systems.

Provided that these transmission lines are being used for evacuation and transfer of inter-state power on a regular basis as identified by CTU in consultation with the concerned RPC and RLDC;

Provided further that such transmission system is under operation and appropriate metering system is in place to record flow of power;

Provided further that a proper mechanism is in place for the maintenance of such a transmission system after its COD;

Provided that such lines have not been developed for the sole purpose of the beneficiary(ies) of a single State.

- (1) Existing Intra State lines which were planned as ISTS System shall also be considered as ISTS lines;

Provided that such lines have not been developed for the sole purpose of the beneficiary(ies) of a single State;

Provided further that such transmission system is under operation and appropriate metering system is in place to record flow of power;

Provided further that a proper mechanism is in place for the maintenance of such a transmission system after its COD.

- (2) CTU, in consultation with RLDC, shall identify all such non-ISTS lines which are utilized for ISTS power transfer after ascertaining that such nature of flow of power has become permanent.
- (3) No New ISTS lines shall henceforth be planned and developed by State Transmission Utility unless agreed by CTU in consultation with RPC and approved by the Ministry of Power.
- (4) New transmission lines which have been conceived as ISTS lines at the planning stage shall be considered as part of the ISTS system;

Provided that such lines have not been developed for the sole purpose of the beneficiary(ies) of a single State;

Provided further that such transmission system is under operation and appropriate metering system is in place to record flow of power;

Provided further that a proper mechanism is in place for the maintenance of such a transmission system after its COD.

- (5) Tariff of all such ISTS lines shall be approved based on provisions of these Regulations, and the fixed charges of such system shall be allowed based on the availability certified by respective RPCs and shall be allowed to be recovered as per the mechanism specified in CERC (Sharing of Inter-State Transmission Charges and Losses), 2020.

94. **Application fee and publication expenses:** The following fees, charges and expenses shall be reimbursed directly by the beneficiary in the manner specified herein:

- (1) The application filing fee and the expenses incurred on publication of notices in the application for approval of tariff, may at the discretion of the Commission, be allowed to be recovered by the generating company or the transmission licensee, as the case may be, directly from the beneficiaries or the long term customers, as the case may be.
- (2) The fees and charges shall be reimbursed directly by the beneficiaries in proportion to their allocation in the generating stations or by the long term customers or DICs in proportion to their share in the inter-State transmission systems determined in accordance with the Central Electricity Regulatory Commission (Sharing of inter-State Transmission Charges and Losses) Regulations, 2020, as amended from time to time.
- (3) Fees and charges paid by the generating companies and inter-State transmission licensees (including deemed inter-State transmission licensees) under the Central Electricity Regulatory Commission (Fees and Charges of Regional Load Despatch Centre and other related matters) Regulations, 2009, as amended from time to time or any subsequent amendment thereof.

(4) Licence fees paid by the inter-State transmission licensees (including the deemed inter-State transmission licensee) in terms of Central Electricity Regulatory Commission (Payment of Fees) Regulations, 2012.

(5) Licence fees paid by NHPC Ltd to the State Water Resources Development Authority, Jammu, in accordance with the provisions of the Jammu & Kashmir Water Resources (Regulations and Management) Act, 2010.

(6) The Commission may, for the reasons to be recorded in writing and after hearing the affected parties, allow reimbursement of any fee or expenses, as may be considered necessary.

95. **Special Provisions relating to NLC India Limited:** The tariff of the existing generating stations of NLC India Ltd, namely, TPS-II (Stage I & II) and TPS-I (Expansion), whose tariff for the tariff periods 2004-09, 2009-14 and 2014-19 has been determined by following the Net Fixed Assets approach, shall continue to be determined by adopting Net Fixed Assets approach.

96. **Special Provisions relating to Damodar Valley Corporation:** (1) Subject to clause (2), this Regulation shall apply to the determination of tariff of the projects owned by Damodar Valley Corporation (DVC).

(2) The following special provisions shall apply for the determination of tariff of the projects owned by DVC:

(i) **Capital Cost:** The expenditure allocated to the object 'power', in terms of sections 32 and 33 of the Damodar Valley Corporation Act, 1948, to the extent of its apportionment to generation and inter-state transmission, shall form the basis of capital cost for the purpose of determination of tariff:

Provided that the capital expenditure incurred on head office, regional offices,

administrative and technical centres of DVC, after due prudence check, shall also form part of the capital cost.

(ii) Debt Equity Ratio: The debt-equity ratio of all projects of DVC commissioned prior to 01.01.1992 shall be 50:50, and that of the projects commissioned thereafter shall be 70:30.

(iii) Depreciation: The depreciation rate stipulated by the Comptroller and Auditor General of India in terms of section 40 of the Damodar Valley Corporation Act, 1948 shall be applied for the computation of depreciation of projects of DVC.

(iv) Funds under section 40 of the Damodar Valley Corporation Act, 1948 The Fund(s) established in terms of section 40 of the Damodar Valley Corporation Act, 1948 shall be considered as items of expenditure to be recovered through tariff.

(v) Expenses towards subsidiary activities as per Hon'ble Supreme Court Judgement in Civil Appeal No. 4289 of 2008.

97. **Special Provisions relating to BBMB and SSP:** The tariff of the generating station and the transmission system of Bhakra Beas Management Board (BBMB) and Sardar Sarovar Project (SSP) shall be determined after taking into consideration, the provisions of the Punjab Reorganization Act, 1966 and Narmada Water Scheme, 1980 under Section 6-A of the Inter-State Water Disputes Act, 1956, respectively.

98. **Special Provisions Relating to Certain Inter-State Generation Projects:** (1) The tariff of the generating station and the transmission system of the Indira Sagar generation project and such other inter-state generation projects shall be determined on a case-to-case basis.

99. **Special Provisions relating to Central Transmission Utility of India Ltd. (CTUIL):** The fees and charges of CTUIL shall be allowed separately by the Commission through a separate

regulation:

Provided that until such regulation is issued by the Commission, the expenses of CTUIL shall be borne by Power Grid Corporation of India Ltd. (PGCIL) which shall be recovered by PGCIL as additional O&M expenses through a separate petition.

100. **Transmission Majoration Factor:** Transmission Majoration Factor admissible for the transmission projects executed through the JV route in terms of Regulation 410A of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2001 shall be available for a period of 25 years from the date of issue of the transmission licence.

101. **Public Procurement through Competitive Bidding:** The generating company for a specific generating station or for an integrated mine or a transmission licensee shall procure equipment, work and services through a transparent process of competitive bidding.

Provided that under certain exceptional circumstances, equipment, works and services may be procured through other methods, as provided under general financial rules issued by the Government of India and applicable from time to time.

102. **Power to Relax:** The Commission, for reasons to be recorded in writing, may relax any of the provisions of these regulations on its own motion or on an application made before it by an interested person.

103. **Power to Remove Difficulty:** If any difficulty arises in giving effect to the provisions of these regulations, the Commission may, by order, make such provision not inconsistent with the provisions of the Act or provisions of other regulations specified by the Commission, as may appear to be necessary for removing the difficulty in giving effect to the objectives of these regulations.

104. **Issue of *Suo-Moto* orders and practice directions:** The Commission may, from time to time,

issue orders and practice directions in regard to the effective implementation of these regulations and matters incidental or ancillary thereto as the Commission may consider appropriate.

Sd/-
(Harpreet Singh Pruthi)
Secretary

Appendix I
Depreciation Schedule

Sr. No.	Asset Particulars	Depreciation Rate (Salvage Value=10%) SLM
A	Land under full ownership	0.00%
B	Land under lease	
(a)	for investment in the land	3.34%
(b)	For cost of clearing the site	3.34%
(c)	Land for reservoir in case of hydro generating station	3.34%
C	Assets purchased new	
a.	Plant & Machinery in generating stations	
(i)	Hydro electric	5.28%
(ii)	Steam electric NHRB & waste heat recovery boilers	5.28%
(iii)	Diesel electric and gas plant	5.28%
b.	Cooling towers & circulating water systems	5.28%
c.	Hydraulic works forming part of the Hydro-generating stations	
(i)	Dams, Spillways, Weirs, Canals, Reinforced concrete flumes and siphons	5.28%
(ii)	Reinforced concrete pipelines and surge tanks, steel pipelines, sluice gates, steel surge tanks, hydraulic control valves and hydraulic works	5.28%
d.	Building & Civil Engineering works	
(i)	Offices and showrooms	3.34%
(ii)	Containing thermo-electric generating plant	3.34%
(iii)	Containing hydro-electric generating plant	3.34%
(iv)	Temporary erections, such as wooden structures	100.00%
(v)	Roads other than Kutcha roads	3.34%
(vi)	Others	3.34%
e.	Transformers, Kiosks, sub-station equipment & other fixed apparatus (including plant)	
(i)	Transformers, including foundations having a rating of 100 KVA and over	5.28%
(ii)	Others	5.28%

f.	Switchgear including cable connections	5.28%
g.	Lightning arrestor	
(i)	Station type	5.28%
(ii)	Pole type	5.28%
(iii)	Synchronous condenser	5.28%
Sr. No.	Asset Particulars	Depreciation Rate (Salvage Value=10%) SLM
h.	Batteries	9.50%
(i)	Underground cable, including joint boxes and disconnected boxes	5.28%
(ii)	Cable duct system	5.28%
i.	Overhead lines, including cable support	
(i)	Lines on fabricated steel operating at terminal voltages higher than 66 KV	5.28%
(ii)	Lines on steel supports operating at terminal voltages higher than 13.2 KV but not exceeding 66 KV	5.28%
(iii)	Lines on steel on reinforced concrete support	5.28%
(iv)	Lines on treated wood support	5.28%
j.	Meters	5.28%
k.	Self propelled vehicles	9.50%
l.	Air Conditioning Plants	
(i)	Static	5.28%
(ii)	Portable	9.50%
m(i)	Office furniture and furnishing	6.33%
(ii)	Office equipment	6.33%
(iii)	Internal wiring, including fittings and apparatus	6.33%
(iv)	Street Light fittings	5.28%
n.	Apparatus let on hire	
(i)	Other than motors	9.50%

(ii)	Motors	6.33%
o.	Communication equipment	
(i)	Radio and high frequency carrier system	15.00%
(ii)	Telephone lines and telephones	15.00%
(iii)	Fibre Optic/OPGW	6.33%
p.	I. T Equipment including software, UNMS, URTDSM, EMS, Cyber Security System, REMC, WAMS, SCADA System	15.00%
q.	Any other assets not covered above	5.28%

Note: Where the life of the particular asset is less than the useful life of the project, the useful life of such particular asset shall be considered as per the provisions of the Companies Act, 2013 and subsequent amendment thereto.

Appendix II

Depreciation Schedule for New Projects

Sr. No.	Asset Particulars	Depreciation Rate (Salvage Value=10%) SLM
A	Land under full ownership	0.00%
B	Land under lease	
(a)	for investment in the land	3.34%
(b)	For the cost of clearing the site	3.34%
I	Land for reservoir in case of hydro generating station	3.34%
C	Assets purchased new	
a.	Plant & Machinery in generating stations	
(i)	Hydro electric	4.22%
(ii)	Steam electric NHRB & waste heat recovery boilers	4.22%
(iii)	Diesel electric and gas plant	4.22%
b.	Cooling towers & circulating water systems	4.22%
c.	Hydraulic works forming part of the Hydro-generating stations	
(i)	Dams, Spillways, Weirs, Canals, Reinforced concrete flumes and siphons	4.22%
(ii)	Reinforced concrete pipelines and surge tanks, steel pipelines, sluice gates, steel surge tanks, hydraulic control valves and hydraulic works	4.22%
d.	Building & Civil Engineering works	
(i)	Offices and showrooms	3.34%
(ii)	Containing thermo-electric generating plant	3.34%
(iii)	Containing hydro-electric generating plant	3.34%
(iv)	Temporary erections, such as wooden structures	100.00%
(v)	Roads other than Kutcha roads	3.34%
(vi)	Others	3.34%
e.	Transformers, Kiosks, sub-station equipment & other fixed apparatus (including plant)	
(i)	Transformers, including foundations having a rating of 100 KVA and over	4.22%
(ii)	Others	4.22%

f.	Switchgear, including cable connections	4.22%
g.	Lightning arrester	
(i)	Station type	4.22%
(ii)	Pole type	4.22%
(iii)	Synchronous condenser	4.22%
Sr. No.	Asset Particulars	Depreciation Rate (Salvage Value=10%) SLM
h.	Batteries	9.50%
(i)	Underground cable, including joint boxes and disconnected boxes	4.22%
(ii)	Cable duct system	4.22%
i.	Overhead lines, including cable support	
(i)	Lines on fabricated steel operating at terminal voltages higher than 66 KV	4.22%
(ii)	Lines on steel supports operating at terminal voltages higher than 13.2 KV but not exceeding 66 KV	4.22%
(iii)	Lines on steel on reinforced concrete support	4.22%
(iv)	Lines on treated wood support	4.22%
j.	Meters	4.22%
k.	Self propelled vehicles	9.50%
l.	Air Conditioning Plants	
(i)	Static	4.22%
(ii)	Portable	9.50%
m.(i)	Office furniture and furnishing	6.33%
(ii)	Office equipment	6.33%
(iii)	Internal wiring, including fittings and apparatus	6.33%
(iv)	Street Light fittings	4.22%
n.	Apparatus let on hire	
(i)	Other than motors	9.50%

(ii)	Motors	6.33%
o.	Communication equipment	
(i)	Radio and high frequency carrier system	15.00%
(ii)	Telephone lines and telephones	15.00%
(iii)	Fibre Optic/OPGW	6.33%
p.	I. T Equipment including software UNMS, URTDSM, EMS, Cyber Security System, REMC, WAMS, SCADA system	15.00%
q.	Any other assets not covered above	4.22%

Note: Where the life of the particular asset is less than the useful life of the project, the useful life of such particular asset shall be considered as per the provisions of the Companies Act, 2013 and subsequent amendment thereto

Appendix III

Depreciation Schedule for Integrated Mine

DEPRECIATION SCHEDULE FOR INTEGRATED MINE		
Sr No	Asset Particulars	Life in Years
1	Land Freehold@	999
2	Land Leasehold	&&&
3	Temporary erections	1
4	HEMM\$	8
5	Roads, bridges, culverts, helipads	25
6	Main Plant Buildings	30
7	Machinery other than HEMM	15
8	Water Supply, Drainage and sewerage	15
9	Furniture and Fixtures	15
10	Office equipment/s other than computers	15
11	Hospital equipment(s)	15
12	EDP, WP machines, SATCOM & communication equipment	15
13	Electrical installations	15
14	Self propelled vehicles	10
15	Computers, Software	6.33
16	Laboratory & workshop equipment	15
17	Mine Development Expenses and Evaluation and Exploration #	20 or life of mine, whichever is lower
18	Evaluation and Exploration#	20 or life of mine, whichever is lower
19	Others not covered above	15
*	Salvage Value shall be other than 5% for the following assets - a. IT Equipment, software Zero (0) b. Zero or as agreed with the state Government in case of land c. For specialized mining equipment as specified by the Ministry of Corporate affairs Mine Development expenses, Evaluation and Exploration Zero (0)	
@	Petitioner to submit if the Freehold Land is attached with any conditions for return. If yes submit the conditions and period after which the land is to be returned. In such a case, the land shall be depreciable based on such details.	
&&&	To be filled by petitioner, least of lease agreement/mine life/right to use period	
\$	List of individual HEMM with the cost of each HEMM be provided separately	
#	In a generic sense Mine Development Expenditure is the expenditure incurred to bring the mine n into usable condition after ensuring the economic viability and decision is taken by the Mine Owner to develop the mine. While filling under this head, details to the extent feasible are to be given separately. Evaluation and exploration expenditure is generally the expenditure incurred associated with finding the mineral by carrying out topographical, geological, geochemical and geophysical studies, exploratory drilling, trenching, sampling, expenditure for activities in relation to evaluation of technical feasibility and commercial viability, acquisition of rights to explore etc. While filling under this head, details to the extent feasible are to be given separately.	

Appendix-IV

Procedure for Calculation of Transmission System

Availability Factor for a Month

1. Transmission system availability factor for nth calendar month (“TAFPn”) shall be calculated by the respective transmission licensee, verified by the concerned Regional Load Dispatch Centre (RLDC) and certified by the Member-Secretary, Regional Power Committee of the region concerned, separately for each AC and HVDC transmission system and grouped according to sharing of transmission charges. In the case of the AC system, transmission System Availability shall be calculated separately for each Regional Transmission System and inter-regional transmission system. In the case of the HVDC system, transmission System Availability shall be calculated on a consolidated basis for all inter-state HVDC systems.
2. Transmission system availability factor for nth calendar month (“TAFPn”) shall be calculated by considering the following:
 - i) **AC transmission lines:** Each circuit of AC transmission line shall be considered as one element;
 - ii) **Inter-Connecting Transformers (ICTs):** Each ICT bank (three single-phase transformers together) shall form one element;
 - iii) **Static VAR Compensator (SVC):** SVC, along with SVC transformer, shall form one element;
 - iv) **Bus Reactors or Switchable line reactors:** Each Bus Reactors or Switchable line reactors shall be considered as one element;
 - v) **HVDC Bi-pole links:** Each pole of the HVDC link, along with associated equipment at both ends, shall be considered as one element;
 - vi) **HVDC back-to-back station:** Each block of the HVDC back-to-back station shall be considered as one element. If the associated AC line (necessary for the transfer of inter-regional power through the HVDC back-to-back station) is not available, the HVDC back-to-back station block shall also be considered unavailable;

vii) **Static Synchronous Compensation (“STATCOM”)**: Each STATCOM shall be considered as a separate element.

3. The Availability of the AC and HVDC portion of the Transmission system shall be calculated by considering each category of transmission elements as under:

TAFPn (in %) for AC system:

$$= \frac{(o \times AV_o) + (p \times AV_p) + (q \times AV_q) + (r \times AV_r) + (u \times AV_u)}{(o + p + q + r + u)} \times 100$$

Where,

- o = Total number of AC lines.
- AV_o = Availability of o number of AC lines
- p = Total number of bus reactors/switchable line reactors
- AV_p = Availability of p number of bus reactors/switchable line reactors
- q₁ = Total number of ICTs
- AV_q = Availability of q number of ICTs
- r = Total number of SVCs
- AV_r = Availability of r number of SVCs
- u = Total number of STATCOM
- AV_u = Availability of u number of STATCOM

TAFMn (in %) for HVDC System:

$$= \frac{\sum_{x=1}^s C_{xbp}(\text{act}) \times AV_{xbp} + \sum_{y=1}^t C_y(\text{act}) \times AV_{ybtb}}{\dots} \times 100$$

$$\sum_{x=1}^s C_{xbp} + \sum_{y=1}^t C_{ybtb}$$

Where

- $C_{xbp}(\text{act})$ = Total actual operated capacity of x^{th} HVDC pole
 C_{xbp} = Total rated capacity of x^{th} HVDC pole
 AV_{xbp} = Availability of x^{th} HVDC pole

 $C_{ybtb}(\text{act})$ = Total actual operated capacity of y^{th} HVDC back-to-back station block

 C_{ybtb} = Total rated capacity of y^{th} HVDC back-to-back station block
 AV_{ybtb} = Availability of y^{th} HVDC back-to-back station block
 s = Total no of HVDC poles
 t = Total no of HVDC Back to Back blocks

3. The availability for each category of transmission elements shall be calculated based on the weightage factor, total hours under consideration and non-available hours for each element of that category. The formulae for calculation of the Availability of each category of the transmission elements are as per **Appendix-V**. The weightage factor for each category of transmission elements shall be considered asunder:

- (a) For each circuit of the AC line – The number of sub-conductors in the line multiplied by ckt-km;
- (b) For each HVDC pole- The rated MW capacity x ckt-km;
- (c) For each ICT bank – The rated MVA capacity;
- (d) For SVC- The rated MVAR capacity (inductive and capacitive);
- (e) For Bus Reactor/switchable line reactors – The rated MVAR capacity;
- (f) For HVDC back-to-back stations connecting two Regional grids- Rated MW capacity of each block; and
- (g) For STATCOM – Total rated MVAR Capacity.

4. The transmission elements under outage due to the following reasons shall be deemed to be available:

- i. Shut down availed for maintenance of another transmission scheme or construction of new element or renovation/upgradation/additional capitalization in an existing system approved by the Commission. If the other transmission scheme belongs to the transmission licensee, the Member Secretary, RPC may restrict the deemed availability period to that considered reasonable by him for the work involved. In case of a dispute regarding deemed availability, the matter may be referred to the Chairperson, CEA, within 30 days.
- ii. Switching off of a transmission line to restrict over-voltage and manual tripping of switched reactors as per the directions of the concerned RLDC.
- iii. Shut down of a transmission line due to the Project(s) of NHAI, Railways and Border Road Organization, including for shifting or modification of such transmission line or any other infrastructure project approved by Ministry of Power. Member Secretary, RPC may restrict the deemed availability period to that considered reasonable by him for the work involved; Provided that apart from the deemed availability, any other costs involved in the process of such shutdown of transmission line shall not be borne by the DICs.

Provided that such deemed availability shall be considered only for the period for which DICs are not affected by the shutdown of such transmission line.

5. For the following contingencies, the outage period of transmission elements, as certified by the Member Secretary, RPC, shall be excluded from the total time of the element under the period of consideration for the following contingencies:

- i) Outage of elements due to force majeure events beyond the control of the transmission licensee. However, whether the same outage is due to force majeure (not design failure) will be verified by the Member Secretary, RPC. A reasonable restoration time for the element shall be considered by the Member Secretary, RPC, and any additional time taken by the transmission licensee for restoration of the element beyond the reasonable time shall be treated as outage time attributable to the transmission licensee. Member Secretary, RPC may consult the transmission licensee or any expert

for estimation of reasonable restoration time. Circuits restored through ERS (Emergency Restoration System) shall be considered as available;

- ii) Outage caused by grid incident/disturbance not attributable to the transmission licensee, e.g. faults in a substation or bays owned by another agency causing an outage of the transmission licensee's elements, and tripping of lines, ICTs, HVDC, etc., due to grid disturbance. However, if the element is not restored on receipt of direction from RLDC while normalizing the system following grid incident/disturbance within reasonable time, the element will be considered not available for the period of outage after issuance of RLDC's direction for restoration;
- iii) The outage period which can be excluded for the purpose of sub-clause (i) and (ii) of this clause shall be declared as under:
 - a. Maximum up to one month by the Member Secretary, RPC;
 - b. Beyond one month and up to three months after the decision at RPC;
 - c. Beyond three months by the Commission for which the transmission license shall approach the Commission along with reasons and steps taken to mitigate the outage and restoration timeline.

6. Time frame for certification of transmission system availability: (1) The following schedule shall be followed for certification of availability by the Member Secretary of the concerned RPC:

- Submission of outage data along with documentary proof (if any) and TAFPn calculation by Transmission Licensees to RLDC/ constituents
 - By the 5th of the following month;
- Review of the outage data by RLDC / constituents and forward the same to respective RPC – by 20th of the month;
- Issue of availability certificate by respective RPC – by the 3rd of the next month.

Appendix-V

FORMULAE FOR CALCULATION OF AVAILABILITY OF EACH CATEGORY OF TRANSMISSION ELEMENTS

For AC transmission system

$$AV_o(\text{Availability of } o \text{ no. of AC lines}) = \frac{\sum_{i=1}^o W_i(T_i - TN_{Ai})/T_i}{\sum_{i=1}^o W_i}$$

$$AV_q(\text{Availability of } q \text{ no. of ICTs}) = \frac{\sum_{k=1}^q W_k(T_k - TN_{Ak})/T_k}{\sum_{k=1}^q W_k}$$

$$AV_r(\text{Availability of } r \text{ no. of SVCs}) = \frac{\sum_{l=1}^{r-1} W_l(T_l - TN_{Al})/T_l}{\sum_{l=1}^r W_l}$$

$$AV_p(\text{Availability of } p \text{ no. of Switched Bus reactors}) = \frac{\sum_{m=1}^p W_m(T_m - TN_{Am})/T_m}{\sum_{m=1}^p W_m}$$

$$AV_u(\text{Availability of } u \text{ no. of STATCOMs}) = \frac{\sum_{n=1}^u W_n(T_n - TN_{An})/T_n}{\sum_{n=1}^u W_n}$$

$$AV_{x_{bp}}(\text{Availability of an individual HVDC pole}) = \frac{(T_x - TN)}{T_x}$$

$AV_{y_{btb}}$ (Availability of an individual HVDC

$$\text{Back-to-back Blocks}) = \frac{(T_y - TN_{Ay})}{T_y}$$

For the HVDC transmission system

For the new HVDC commissioned but not completed twelve months;

For first 12 months: $[(AV_{x\text{bp}} \text{ or } AV_{y\text{btb}}) \times 95\%/85\%]$, subject to a ceiling of 95%.

Where,

o	=	Total number of AC lines;
AV_o	=	Availability of o number of AC lines;
p	=	Total number of bus reactors/switchable line reactors;
AV_p	=	Availability of p number of bus reactors/switchable line reactors;
q	=	Total number of ICTs;
AV_q	=	Availability of q number of ICTs;
r	=	Total number of SVCs;
AV_r	=	Availability of r number of SVCs;
U	=	Total number of STATCOM;
AV_u	=	Availability of u number of STATCOMs;
W_i	=	Weightage factor for i th transmission line;
W_k	=	Weightage factor for k th ICT;
W_l	=	Weightage factors for inductive & capacitive operation of l th SVC;
W_m	=	Weightage factor for m th bus reactor;
W_n	=	Weightage factor for n th STATCOM.
$T_i, T_k, T_l,$ $T_m, T_n, T_x,$ T_y	=	The total hours of i th AC line, k th ICT, l th SVC, m th Switched Bus Reactor & n th STATCOM, x th HVDC pole, y th HVDC back-to-back blocks during the period under consideration (excluding time period for outages not attributed to transmission licensee for the reasons given in Para 5 of the procedure)
T_{NAi}, T_{NAk}	=	The non-availability hours (excluding the time period for outages not attributable to transmission licensee taken as deemed availability as $T_{NAi}, T_{NAk}, T_{NAx}, T_{NAy}$ per Para 5 of the procedure) for i th AC line, k th ICT, l th SVC, m th Switched Bus Reactor, n th STATCOM, x th HVDC pole and y th HVDC back-to-back block.



भारत सरकार/Government of India
 विद्युत मंत्रालय/Ministry of Power
 केन्द्रीय विद्युत प्राधिकरण/Central Electricity Authority
 एन.पी.सी. प्रभाग/National Power Committee Division
Ist Floor, Wing-5, West Block-II, RK Puram, New Delhi-66

विषय: सदस्य (जीओएंडडी) की अध्यक्षता में आरपीसी के लिए एकीकृत लेखा सॉफ्टवेयर के कार्यान्वयन पर चर्चा करने के लिए 20.11.2023 को आयोजित बैठक का कार्यवृत्त के संबंध में।

Subject: Minutes of the Meeting held on 20.11.2023 to discuss the implementation of the Unified Accounting Software for RPCs under the chairmanship of Member (GO&D)-reg.

Minutes of the Meeting held on 20.11.2023 to discuss the implementation of the Unified Accounting Software for RPCs under the chairmanship of Member (GO&D) is enclosed herewith for your kind information and necessary action, please.

भवदीय/ Yours faithfully

Encl: As above

रिषिका शरण
 01/12/2023
 (रिषिका शरण/Rishika Sharan)
 मुख्य अभियन्ता एवं सदस्य सचिव, रा.वि.स /
 Chief Engineer & Member Secretary, NPC

MS (ERPC/WRPC/NRPC/SRPC/NERPC), CE (GM), CE (OPM)

No. CEA-GO-15-14/1/2021-NPC Division 435

Date: 01.12.2023

Copy for kind information to:

1. SA to Chairperson, CEA, New Delhi
2. SA to Member (G&OD), CEA, New Delhi

Minutes of the Meeting held on 20.11.2023 to discuss the implementation of the Unified Accounting Software for RPCs under the chairmanship of Member (GO&D)

The List of Participants is attached at **Annexure-I**.

1. A meeting to discuss the implementation of the Unified Accounting Software for RPCs under the chairmanship of Member (GO&D), CEA was held on 20.11.2023 at Samvad, 6th floor, CEA, Sewa Bhawan in hybrid (Offline and Online) Mode. Member (GO&D) welcomed the Member Secretaries of RPCs. After expressing gratitude to everyone, he requested Member Secretary/Chief Engineer (NPC) to proceed with the meeting.
2. Chief Engineer (NPC) gave a brief presentation attached as **Annexure-II**. She informed that in the 13th meeting of NPC held on 05th July 2023, it was decided that the commercial subgroup of NPC would recommend on the standardization of the formats and software of the commercial accounts. The standard formats and software finalized by the commercial sub-group would be placed in next NPC meeting. Subsequently, a meeting of commercial sub-group of NPC was held on 8 Aug 2023. In this meeting, Commercial accounts to be standardized were identified and it was decided that ERPC would submit draft standard output formats of commercial accounts. Another meeting of the commercial sub-group of NPC was held on 30.10.2023 through video conference wherein the draft standard output formats of commercial accounts prepared by NPC Division, based on the inputs/comments of ERPC and SRPC, was discussed and the Final standard output formats (attached as **Annexure-III**) were circulated to all RPCs.
3. In the meeting, the implementation of the Unified Accounting Software for RPCs were discussed in detail and the following decisions were taken:
 - a) ERPC shall be the Nodal RPC for implementation of Unified Accounting Software for RPCs.
 - b) A Joint Committee shall be formed by NPC with representatives (Director/Superintending Engineer/ Deputy Director Level) from all RPCs, GM Division, CEA and NPC Division, CEA. Superintending Engineer, ERPC would be the Member Convener of Joint Committee with following Term of Reference:
 - i. Hiring of consultant for preparation of DPR
 - ii. Identifying the possible source of funding i.e. through PSDF or RPC funds.
 - iii. Preparation of NIT and other documents related to tendering.
 - iv. Selection of vendor for commercial account software.
 - v. Execution of work order and certification of completion of work.
 - vi. Recommend on O&M/AMC/Ownership of project.
4. The meeting ended with vote of thanks to the Chair.

List of Participants:

Central Electricity Authority (CEA)

1. Sh. B. K. Arya, Member (GO&D)
2. Smt. Rishika Sharan, Chief Engineer, NPC
3. Sh. B. Lyngkholi, Chief Engineer, OPM
4. Sh. Chandra Prakash, Chief Engineer, GM
5. Sh. Satyendra Kr. Dotan, Director, NPC
6. Sh. Himanshu Lal, Dy. Director, NPC
7. Sh. Nikul Rohin, Asstt. Director, NPC
8. Sh. Dhruv Kawat, Asstt Director, GM
9. Sh. Sakil Ahmad, Asstt. Director, GM

Eastern Regional Power Committee (ERPC)

10. Sh. N.S. Mondal, Member Secretary
11. Sh. S. K. Pradhan. EE

Southern Regional Power Committee (SRPC)

12. Sh. Asit Singh, Member Secretary
13. Sh. NRLK Prasad, SE

North Regional Power Committee (NRPC)

14. Sh. V.K. Singh, Member secretary
15. Sh. Praveen, EE

Western Regional Power Committee (WRPC)

16. Sh. P.D. Lone, SE

North-Eastern Regional Power Committee (NERPC)

17. Sh. Abhijeet Agarwal, EE

Annexure-II

Meeting to discuss implementation of the Unified Accounting Software for RPCs under the chairmanship of Member (GO&D), CEA

20-Nov-2023

Background

➤ 13th NPC meeting held on 5 July 2023 :

It was decided that the commercial subgroup of NPC will finalise the standardization of the formats and software of the commercial accounts and would be placed in next NPC meeting.

Background

➤ Meetings of commercial subgroup of NPC:

Meeting held on 8 Aug 2023-Main decisions:

- i. Commercial accounts to be standardized were identified.
- ii. ERPC will submit draft standard output formats.

ERPC submitted draft formats on 20.09.2023 and the same was circulated for the comments. SRPC vide email dated 04 Oct 2023 has provided comments.

Meeting held on 30 Oct 2023:

NPC Div. presented the draft formats based on ERPC and SRPC inputs. The draft was discussed and tentatively finalised and circulated for further comments. SRPC has provided further comments on final draft which will be suitably incorporated during implementation.

Agenda of the meeting


➤ Meeting in the O/o Member (GO&D), CEA held on 20.10.2023:

Member GO&D reviewed the works of standardization of the format and software of the commercial accounts issued by RPCs. After due deliberations, Member (GO&D), CEA has directed to schedule a meeting to discuss the implementation of the Unified Accounting Software for RPCs.

Accordingly, a meeting has been scheduled to discuss the following agenda points:

- i. Scope of work for Unified Accounting Software for RPCs. (DPR preparation, Standardization of Reports and formats etc.)**
- ii. Modalities for implementations of Unified Accounting Software for RPCs.**
- iii. Any other agenda item with the permission of the Chair.**

Proposal:

1. Nomination of nodal RPC for the following:
 - a. Hiring of consultant for preparation of DPR
 - b. Source of funding-PSDF/RPC fund
 - c. Preparation of NIT
 2. Selection of vendor for accounting software by nodal RPC
 3. Execution of work order and certification of completion of work by Nodal RPC
 4. O&M/AMC/Ownership of project by Nodal RPC
- 

THANK YOU



**STANDARDIZATION OF OUTPUT REPORTS OF
COMMERCIAL ACCOUNTS ISSUED BY RPCs**

As per the decision in the 13th meeting of NPC held on 05th July 2023 and mandate given in Annexure-7: Accounting & Pool Settlement system under CERC IEGC Regulation 2023 and subsequent decision taken in the Sub group meeting held on 08th August 2023, ERPC secretariat has entrusted for preparing a draft standardization of Output format of all commercial accounts published by RPCs for accounting and settlement.

In this regard, ERPC vide email dated 20.09.2023 has provided draft standardization of Output format of all commercial accounts published by RPCs and the same was circulated for the comments. SRPC vide email dated 04 Oct 2023 has given their observation for standardization of output format.

A meeting of the commercial sub-group of NPC was held on 30.10.2023 through video conference to discuss Standardization of output formats of Commercial Accounts issued by RPCs. The standardised output formats of the commercial accounts have been modified based on deliberations in the meeting and circulated to all RPCs for comments. The comments/inputs dated 8.11.2023 was received from SRPC and the same has been suitably incorporated.

After consideration of comments of SRPC and visiting the accounts published by RPCs, the standardization of Output format of all commercial accounts published by RPCs has been prepared by NPC Division for uniformity in all commercial account. The same has been given below with the final suggestions:

Basis of Standardization of Output Formats:

1. Regulations of CERC and existing formats of commercial accounts issued by RPCs.
2. Unit of energy, power, INR and Constituent name should be unique and will be applicable for all RPCs output report format uniformly.
3. Final modifications of output format may be done during the development of Unified Accounting Software for all RPCs.

Note:

1. Proper mentioning of Amount (this shall be indicated along with sign (+/-) & Nature of Amount (this shall be indicated a Payable to Pool/ Receivable from Pool).
2. All Amounts shall be shown in Rupee terms.
3. Resolution of Power (in MW) & Energy (in MWH) figures shall be restricted to THREE Decimals in the Main Reports

A. Weekly Accounts

Standard Format of Commercial Accounts

1. DSM Account Format:

1.1 Final Weekly DSM Account

DSM Settlement Account for the week From DD-MM-YYYY to DD-MM-YYYY

Entity	Total Deviation (MWHr)	Under Drawl Charges/ Over Injection Charges (Rs)	Over Drawl Charges/ Under Injection Charges (Rs)	Post-facto Charges/ Charges for Drawl without Schedule (Rs)	Final Charges (Rs)	Payable ToPool (“-“)/ Receivable From Pool (“+”)
States/UT/Drawee Entities						
Ent-1						
Ent-2						
....						
CGS						
CGS-1						
CGS-2						
...						
General Sellers						
GS-1						
GS-2						
...						
WS-Seller						
Solar Entity						
SE-1						
SE-2						
...						
Wind Entity						
WE-1						
WE-2						
...						
Inter- regional						

Inter- National						
Infirm generators						

(All Figs. in Rs.)

Payable To The Pool (A) :	
Receivable From The Pool (B) :	
__ Deviation (A-B) :	

1.2 Day-wise Report Format:

(All Figs. in Rs.)

Date	Total Scheduled (MWH)	Total Actual (MWH)	Deviation (MWH)	Final Charges (Rs)	Payable To Pool (“-“)/ Receivable From Pool (“+”)
States/UT/Drawee Entities					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
CGS					
Day-1					
Day-2					
Day-3					

Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
General Sellers					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
WS-Seller					
Solar Entity					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Wind Entity					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Inter- regional					
Day-1					
Day-2					

Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Inter National					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Infirm Generator					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					

Note: Energy unit in MWH and upto 3 decimal.

2. Ancillary Service Account:

2.1 SRAS Settlement Account for the week from dd-mm-yyyy to dd-mm-yyyy

Payments to the SRAS Provider(s) from the DSM pool

Sr. No.	SRAS Provider	UP Regulation due to SRAS (MWh)	Down Regulation due to SRAS (MWh)	Net Energy (MWh)	Energy Charges/ Compensation Charges (Rs.)	Incentive Charges (Rs.)	Total Charges (Rs.)	Payable to the pool/Receivable from the pool

Total								

Notes :

1. Energy unit in MWH and upto 3 decimal.
2. Energy Charges/Compensation Charges for SRAS provider has been calculated as per the rate furnished by the respective SRAS providers in Format AS and the same published in RPC website.
3. The Incentive has been calculated based on actual performance of SRAS providers.

**2.2 SRAS Actual Performance Statement by __RPC
from dd-mm-yyyy to dd-mm-yyyy**

Sr. No.	SRAS Provider	dd-mm-yyyy	dd-mm-yyyy	dd-mm-yyyy	...	dd-mm-yyyy	dd-mm-yyyy	Remarks (Disqualification period)
		Actual Performance(%)	Actual Performance(%)	Actual Performance(%)	...	Actual Performance(%)	Actual Performance(%)	
					...			
					...			
					...			

2.3 TRAS Account:

**TRAS Settlement Account for the week from dd-mm-yyyy to dd-mm-yyyy
(Short Fall/Emergency)**

Net Charges Payable/Receivable by the TRAS Provider(s) to/from the Regional Deviation and Ancillary Service Pool Account in Shortfall/Emergency Condition

SL No.	TRAS Provider	Energy scheduled under shortfall/Emergency TRAS-Up (MWH) (A)	Total Charges /Compensation Charges for Shortfall/Emergency TRAS-Up (Rs) (B)	Energy scheduled under Shortfall/Emergency TRAS-Down (MWh) (C)	Total Charges / Compensation Charges for Shortfall/Emergency TRAS-Down to be paid back to Pool (Rs) (D)	Net Charges (Rs) (E)=(B)-(D)	Payable from Pool to TRAS Provider/ Receivable by Pool from TRAS Provider

Notes:

A) TRAS settlement account for the week dd-mm-yyyy to dd-mm-yyyy has been prepared as per the detailed procedure for Tertiary Reserve Ancillary Services (TRAS) approved by CERC.

B) Total Charges for TRAS providers have been calculated as per the rates furnished by the respective TRAS providers and the same published in ___RPC website.

2.4 TRAS Settlement Account by RPC (Day Ahead and Real Time Market)

TRAS Account for Week from dd-mm-yyyy to dd-mm-yyyy.

Net Charges Payable/Receivable by the TRAS Provider(s) to/from the Regional Deviation and Ancillary Service Pool Account

S. No	TRAS Provider Name	TRAS-Up in Day Ahead AS Market				TRAS-Up Energy in Real Time AS Market				Total Charges/compensation charge for TRAS Up (Rs) (I)=(C)+(D)+(G)+(H) (11)
		TRAS Up Cleared (MWh) (A) (3)	TRAS-Up Energy Scheduled (MWh) (B) (4)	TRAS Up Energy Charges (Rs.) (C) (5)	TRAS-Up Commitment Charges (Rs.) (D) (6)	TRAS Up Cleared (MWh) (E) (7)	TRAS-Up Energy Scheduled (MWh) (F) (8)	TRASUp Energy Charges (Rs) (G) (9)	TRAS-Up Commitment Charges (Rs) (H) (10)	
1										
2										
3										

TRAS-Down in Day Ahead AS Market		TRAS-Down in Real Time AS Market		Net Charges (Rs) (N)=(I)-(K)- (M) (15)	Payable from Pool to TRAS Provider/Receivable by Pool from TRAS Provider
TRASDown Energy Scheduled (MWh) (J) (12)	TRASDown Charges to be paid back to Pool (Rs) (K) (13)	TRASDown Energy Scheduled (MWh) (L) (14)	TRASDown Charges to be paid back to Pool (Rs) (M) (15)		
1					
2					

3. Reactive Energy Account Format:

3.1 Weekly Reactive Energy Account format after final Adjustment:

Regional Entity Name	MVArh_H	MVArh_L	Net Amount (Rs.)	Payable to Pool (-)/ Receivable from Pool (+)
States/UTs/ Drawee Utilities				
CGS				
General Sellers				
WS Seller (Solar Entity)				
WS Seller (Wind Entity)				
WS Seller (Others)				

(All Figs. in Rs.)

Payable To The Pool :	
Receivable From The Pool :	

3.2 Meter-wise Reactive Energy Details

Regional Entity Name	Station Name	Element Name	Meter No	MVArh_H	MVArh_L
Ent-1					
Ent-2					
...					

3.3 Day wise Format:

Reactive Energy export (-) / import (+) under high & low voltage condition

And Reactive Energy Charges thereof

(Reactive Energy Exchange in MVARH & Charges in Rs.)

Regiona l Entity Name	ISTS/B BMB/D VC etc.	Drawl Point	Day1 (HV, LV)...	Day7(HV, LV)	Total HV	Total LV	Charges HV	Charges LV

B. Monthly Accounts

1. REA Accounts Formats:

_____ **Regional Power Committee**

Regional Energy Account for the Month of _____

1.1 Details of Plant Availability Factor (PAF) for CS Stations

High Demand Season for FY 20__ - __

Peak Hours ()

ISGS	IC (MW)	Auxiliary Consumption	NPAF (%)	PAFM (%)	PAFC (%)	High Demand Season				Low Demand Season			
						Peak Hour		Off-Peak Hour		Peak Hour		Off-Peak Hour	
						PAFM (%)	PAFC (%)	PAFM (%)	PAFC (%)	PAFM (%)	PAFC (%)	PAFM (%)	PAFC (%)
ISGS-1													
ISGS-2													
.....													
.....													

1.2 Details of Plant Load Factor (PLF) for CS Stations

High Demand Season for FY 20__ - __

Peak Hours ()

ISGS	IC (MW)	Auxiliary Consumption	NPLF (%)	PLFM (%)	PLFC (%)	High Demand Season				Low Demand Season			
						Peak Hour		Off-Peak Hour		Peak Hour		Off-Peak Hour	
						PLFM (%)	PLFC (%)	PLFM (%)	PLFC (%)	PLFM (%)	PLFC (%)	PLFM (%)	PLFC (%)
ISGS-1													
ISGS-1													
.....													
.....													

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

1.3 Details of Misdeclaration of Declared Capability by CS Stations

Entity	Mis Declaration Date	Incident No	No. of days for which FC Deductible

1.4 Weighted Average Percentage Allocation - Peak & Off – Peak Hours combined from ISGS for the FY 20__-__ Month- 20__

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)								
ISGS-1 (Cumulative 2023-24)								
ISGS-2 (August-2023)								
ISGS-2 (Cumulative 2023-24)								
...								
...								
ISGS-13 (August-2023)								
ISGS-13 (Cumulative 2023-24)								

1.5 Details of Scheduled Energy to the Beneficiaries for Month, Year

1.5.a Energy Scheduled from ISGS to the Beneficiaries for Month, Year

All units in MWH

Entity		Ben-1	Ben-2	...	...	...	...	...	Total
ISGS-1									
ISGS-2									
...									
Hydro Stations	Name of Hydro stations								
	Free Energy of Hydro Stations								
Nuclear Stations									
Solar									
Wind									

Shared Projects								
STOA Export by Goa								

Note: Energy unit in MWH and upto 3 decimal.

1.5.b Energy Scheduled from Renewable ISGS for the Month, Year

All units in MWH

Entity	Total Energy Schedule (MWH)	Total Actual Energy (MWH)	Net Deviation for the purpose of REC (MWH)
SOLAR ENTITY			
S1			
S2			
...			
NON SOLAR ENTITY			
NS1			
NS2			
...			
Total Solar Deviation for the purpose of REC			
Total Non-Solar Deviation for the purpose of REC			

Note: Energy unit in MWH and upto 3 decimal.

1.6 Energy Scheduled above Normative PLF from Inter State Generating Stations for the FY 2023-24 (Incentive Energy)

1.6.a. High Demand Season

Details of Incentive Energy (in MWH) Beyond Target PLF							
Station Name	State Name	Incentive Energy Peak Period			Incentive Energy Off Peak Period		
		Incentive Energy upto Last Month (A)	Incentive Energy upto Current Month (B)	Incentive Energy for the Month (C)=(B)-(A)	Incentive Energy upto Last Month (D)	Incentive Energy upto Current Month (E)	Incentive Energy for the Month (F)=(E)-(D)
Station-1							

	Total							
Station-2								
	Total							
Station-N								
	Total							

1.6. b. Low Demand Season

Details of Incentive Energy (in MWH) Beyond Target PLF							
Station Name	State Name	Incentive Energy Peak Period			Incentive Energy Off Peak Period		
		Incentive Energy upto Last Month (A)	Incentive Energy upto Current Month (B)	Incentive Energy for the Month (C)=(B)-(A)	Incentive Energy upto Last Month (D)	Incentive Energy upto Current Month (E)	Incentive Energy for the Month (F)=(E)-(D)
Station-1							
	Total						
Station-2							
	Total						
Station-N							
	Total						

1.7. Compensation for Degradation of Heat Rate (SHR) and Auxiliary Energy Consumption (AEC)

As per Detailed Operating Procedure on Reserve Shutdown and Compensation Mechanism issued on 05-05-2017 by Hon'ble CERC.

From Date: dd-mm-yyyy, To Date: dd-mm-yyyy

1.7 a Information used for ECR calculation

Entity (SR-ISGS)	Installed capacity MCR (MW)	Normative SHR or Net SHR (kCal/kWh)	Normative SFC (ml/kWh)	CVSF (kCal/ml)	LPPF (Rs./MT)	LPSFI (Rs./KL)	Normative LC (kg/kWh)	LPL (Rs./kg)	Normative Aux. Cons (%)	CVPF (kCal/kg)	Actual GHR / SHR (kCal/kWh)	Actual SFC (ml/kWh)	Actual LC (kg/kWh)	Actual Aux. Cons (%)
ISGS-1														
ISGS-2														
...														
ISGS-13														

1.7 b Outage Data details for Stations for the Month, Year

Entity	Unit No.	Installed Capacity	Start-Date time	End Date time	Type of Outage
ISGS-X					
ISGS-X					
...					

Note: Outage Duration has been calculated from 01-04-2023 at 00:00 hrs.

1.7 c Compensation Calculated for each ISGS Stations up to Month , Year

Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis is determined to three decimal places.

ENTITY (SR-ISGS)	Average Unit Loading (%)	Total schedule (MWH)	ECR (Norm) (Rs/kWh)	ECR (Actual) (Rs/kWh)	ECR (SE) (Rs/kWh)	ECR (DC) (Rs/kWh)	EC (Norm) (Rs)	EC (Actual) (Rs)	EC (SE) (Rs)	EC (DC) (Rs)	EC (A) - EC (N) (Rs)	Comp (P) (Rs)	Comp (F) (Rs)
ISGS-1													
ISGS-2													
...													
ISGS-13													
TOTAL													

1.7 d Details of Entitlement and Schedule of Beneficiaries and SCED from ISGS

SR-ISGS	Ben-1		Ben-2		...		Ben-15		SCED	
	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)
ISGS-1										
ISGS-2										

...																	
ISGS-13																	

1.7 e Proportion of (Un-requisitioned Energy of beneficiaries when Schedule is below 85% of its entitlement from ISGS) and (SCED)

Rounded off values are shown in the table below; however, actual values are considered for computation of compensation payable by beneficiary.

SR-ISGS (NTPC)	Ben-1	Ben-2	Ben15	SECD	Total
ISGS-1																		
ISGS-2																		
...																		
ISGS-13																		

1.7 f Compensation Amount payable by Beneficiary

SR-ISGS (NTPC)	Ben-1	Ben-2	Ben15	SECD	Total
ISGS-1																	
ISGS-2																	
...																	
ISGS-13																	
Total for each Beneficiary																	

1.7 g Statement of Compensation due to Part Load Operation on Account of SCED

Month, Year

SCED Generator	Decrement due to SCED up to the month (MWhr)	Compensation Amount Payable on account of SCED from National Pool Account (SCED) to SCED Generator upto the month (Rs)	Compensation Amount Payable on account of SCED from National Pool Account (SCED) to SCED Generator for the month (Rs)	Payable/ Receivable for the month (Rs)
ISGS-1				
ISGS-2				
...				
ISTS-13				
Total				

**1.8 Details of Intra/ Inter Regional Exchanges through Power Exchanges (COLLECTIVE TRANSCATION DETAILS)
FROM DD/MM/YYYY TO DD/MM/YYYY**

(In MWH)

	Indian Energy Exchange				Power Exchange of India				Hindustan Power Exchange Limited			
	Import (Region Peri)	Import(State Peri)	Export(Region Peri)	Export(State Peri)	Import(Region Peri)	Import(State Peri)	Export(Region Peri)	Export(State Peri)	Import(Region Peri)	Import(State Peri)	Export (Region Peri)	Export(State Peri)
DAM												
Total												
Region												
Through												
Region												
Inter national												
RTM												
Total												
Region												
Through												
Region												
Inter national												
GDAM												
Total												
Region												
Through												
Region												
Inter national												
HPDAM												
Total												
Region												
Through												
Region												
Inter national												

1.9 Bilateral Open Access Transactions (GNA/T-GNA/REMC Details) for the month

SL No.	Access	Applicant	From State	From Utility	To State	To Utility	IR Link	Approval No.	Schedule (MWh)
1	GNA								
2	GNA								
3									
4	TGNA								
	TGNA								
	...								
	...								
	REMC								
	REMC								

1.10 Certification of DC and Computation of Plant Availability Factor (PAF) and Plant Load Factor (PLF) for IPPs

Up to Month, Year

STATION NAME	State	Contracted Capacity (MW)	Availability up to the Month(kWh)	Plant Availability Factor (PAF)	Plant Load Factor (PLF)
IPP-1					
IPP-2					
...					

For Month, Year

STATION NAME	State	Contracted Capacity (MW)	Availability up to the Month(kWh)	Plant Availability Factor (PAF)	Plant Load Factor (PLF)
IPP-1					
IPP-2					
...					

1.11 Statement of Scheduled Energy for exported electricity by Generation Plants (using fuel except nuclear, gas, domestic linkage coal, mix fuel) for claiming Input Tax Credit

I. Generating Station Name

1. Month in which electricity was exported :
2. Name of Generating Station and Location :
3. Name of Company :
4. GSTIN of Company :
5. Installed Capacity of Generating Station (in MW) :
6. Connection point state and Region :
- 7. Details of Scheduled Energy during the month :**

Domestic	
Name of Domestic Entity	Scheduled Energy in (MU)
.....	
.....	
Power Exchange	
Subtotal Domestic Sale (A)	
Cross Border	
Name of Cross Border Country with Exporting entity	Scheduled Energy in (MU)
Subtotal Export (B)	
Total Scheduled Energy of Generating Station (C=A+B)	

Note: As per decision taken in the special meeting held on 01st May'2023 under the chairmanship of Member (Power System), CEA.

11. Availability, Schedule and Un-requisition Surplus Data of CGS (For Information) up to Month, Year

All values in MU. This is only for information. It has no commercial implications.				
STATION NAME (SR-ISGS)	AVAILABILTY	SCHEDULE	SURRENDERAT EX-BUS	SURRENDER AT GENERATOR TERMINAL (SURRENDER AT EX- BUS/(1-NAux))
ISGS-1 (NAux= XX%)				
ISGS-2 (NAux= XX%)				
...				
ISGS-13 (NAux= XX%)				

12. _____ Region High Demand & Low Demand Seasons and the hours of Peak and Off-Peak periods during a day declared by ___ RLDC

YEAR (F.Y)	High demand Season	Low Demand Season

Period	Hours of Peak Period (4 Hours) during a day

2. RTA Format:

.....REGIONAL POWER COMMITTEE

2.1 RTA for the billing month

S.No.	Name of DIC	GNA (MW)	GNA waiver (MW)	Net GNA (MW)	Usage based AC system charges (Rs.)	Balanc e AC system charges (Rs.)	National Component (Rs.)		Regional Componen t (Rs.)	Transformer s component (Rs.)	Total Transmissio n Charges payable in Rs.
					AC-UBC	AC-BC	NC -RE	NC-HVD C	RC	TC	

2.2 Details of entity-wise bilateral billing

S.No.	DIC	Name of the Assets	Bilateral charges (Rs)	Remarks
	DIC1			
	DIC2			

3. RTDA Format:

.....REGIONAL POWER COMMITTEE

3.1 RTDA for the billing month

SL No.	Gen/State/DIC	Located in State	Deviation due to Over drawl (MW)	Deviation due to Over injection (MW)	Total Deviation (MW)	Transmission Deviation Rate (Rs/MW)	Deviation Charges (in Rs.)
Beneficiaries of Region							
Inter State Generating Stations							
SELLER							
Inter-National							
Generating Station Under INFIRM Stage							
Inter-National							

3.2 Day wise RTDA format

.....REGIONAL POWER COMMITTEE

Day wise RTDA report for the Month

SL No.	Gen/State/DIC	Located in State	Deviation due to Over drawl (MW)	Deviation due to Over injection (MW)	Total Deviation (MW)	Transmission Deviation Rate (Rs/MW)	Deviation Charges (in Rs.)
Beneficiaries of Region							
Inter State Generating Stations							

SELLER							
Inter-National							
Generating Station Under INFIRM Stage							
Inter-National							

4. Ramping Accounting Format.

_____ REGIONAL POWER COMMITTEE

Ramp Performance of Thermal Power Stations for Month _____										Month
Number of months in computation (M):										
Station	Total no. of Time Blocks (Tm)	No. of Time Blocks Where Declared Ramp Up & Down rate \geq 1%(Td)	Td /Tm	No. of time blocks where scheduled ramp \geq 1%/min (D)	Out of (D), no. of time blocks where actual ramp \geq scheduled ramp (E)	Out of (D), no. of time blocks where actual ramp \geq 1%/min (F)	Average actual ramp rate during blocks when scheduled ramp \geq 1%/min (%/min) (AARR)	E/D	F/D	Recommended change in RoE (%)
Generator 1										
Generator 2										
Generator 3										
Generator 4										

5. SCED Account:

_____ REGIONAL POWER COMMITTEE

SCED Settlement Account for the Month _____

SL No.	SCED Generator	Increment due to SCED scheduled to VSCED (MWhr) (A)	Decrement due to SCED scheduled to VSCED (MWhr) (B)	Charges to be paid to SCED Generators from National Pool (SCED) (in Rs) (C)= (A) x V.C.	Charges to be Refunded by SCED Generators to National Pool (SCED) (in Rs) (D)= (B) x V.C.	Net Charges (in Rs)	Payable (+) /Receivable (-)
1							
2							
3							
	Total						

6. Details of Delayed Payments to DSM, Reactive Energy, Congestion & Ancillary Services Pool and Interest Payable for Delayed Payments

SN	Constituent	Week No	Week	Amount Payable (Rs.)	Amount Paid (Rs.)	Difference(Rs.)	Due Date for Payment (7 Days)	Date of Payment	Interest to be paid for Delayed Payments
1									
2									
...									

Regional Energy Account Statement

(Additional formats)

1. Details of Weighted Average Allocation from ISGS for 2023-24

1.1 Weighted Average Allocation - Peak & Off-Peak Hours combined from ISGS for the FY 2023-24 (August-2023)

(In MW terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

1.2 Weighted Average Allocation High Demand Season- Peak Hours from ISGS for the FY 2023-24 (April, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

1.3 Weighted Average Allocation High Demand Season- Off Peak Hours from ISGS for the FY 2023-24 (April, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

1.4 Weighted Average Allocation Low Demand Season- Peak Hours from ISGS for the FY 2023-24 (August, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2															

(Cumulative 2023-24)															
...															
...															

1.5 Weighted Average Allocation Low Demand Season- Off Peak Hours from ISGS for the FY 2023-24 (August, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

2. Details of Incentive Energy for Inter State Generating Stations for the FY 2023-24

2.1 Details of Energy Scheduled above Normative PLF from ISGS – Up to April-2023 during Peak Hours

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

2.2 Details of Incentive Energy from ISGS – Up to April-2023 during Peak Hours

ISGS	Normative Schedule Energy in KWhr	Schedule Energy in KWhr	Incentive Energy in KWhr
ISGS-1			
ISGS-2			
...			

2.3 Details of Energy Scheduled above Normative PLF from ISGS – Up to April-2023 during Off-Peak Hours

SR-ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															
...															

2.4 Details of Incentive Energy from ISGS – Up to April-2023 during Off-Peak Hours

SR-ISGS	Nor.Schedule Energy in KWhr	Schedule Energy in KWhr	Incentive Energy in KWhr
ISGS-1			
ISGS-2			
...			

Additional formats of Output Data Files related to various Accounts:

SN	Output Data File Name (Name is indicative only)	Output Data File Description	Related Account (s)
1	Commercial_actual	Day-wise, Block-wise Actuals of all DSM Entities	DSM
2	commercial_actual_ananthapuramu_inj	Day-wise, Block-wise Actuals of Ananthapuram Entities	DSM
3	commercial_actual_pavagada_inj	Day-wise, Block-wise Actuals of Pavagada Entities	DSM
4	commercial_dev2022_ENTITY	Day-wise, Block-wise DSM Details of ENTITY;	DSM
5	commercial_dev2022_interregional	Day-wise, Block-wise DSM Details of (SR, WR) & (SR , ER)	DSM
6	commercial_postfacto_ENTITY	Postfacto Details of ENTITY from Eligible Sources	DSM
7	commercial_sch_sras_15minute	Day-wise, Block-wise Schedules of SRAS Providers	AS
8	commercial_sch_rras	Day-wise, Block-wise Schedules of TRAS Generators of SR	AS
9	commercial_reactive_states	Entity-wise, Station-wise, Element-wise, Meter-wise Weekly Reactive Energy Details	Reactive Energy Account
10	commercial_dev2022_ENTITY	Day-wise, Block-wise RTA & RTDA Details of ENTITY	RTA & RTDA
11	commercial_transmission_charges	Day-wise Details of Transmission Charges of all SR DICs	RTA & RTDA
12	commercial_ecr_data	ECR & Compensation Parameters of ISGS Stations	REA
13	commercial_ent_ENTITY	Day-wise, Block-wise Entitlement of ENTITY from all ISGSs	REA
14	commercial_entonbar_ENTITY	Day-wise, Block-wise On-Bar & Off-Bar Entitlement of ENTITY from all ISGSs	REA
15	commercial_gdam_px_iex	Details of G-DAM Transactions done in IEX	REA
16	commercial_gdam_px_pxi	Details of G-DAM Transactions done in PXI	REA
17	commercial_isgs	Day-wise, Block-wise Details of DC & Schedule of all ISGS	REA
18	commercial_modify_dc_sch_isgs	Modified Day-wise, Block-wise Details of DC & Schedule of all ISGS	REA
19	commercial_on_off_dc_isgs	Day-wise, Block-wise On-Bar	REA

		& Off-Bar DC of ENTITY from all ISGSs	
20	commercial_outage_data	Outage Details of all ISGSs	REA
21	commercial_pushp_beneficiary	Day-wise, Block-wise Details of allocation inclusive of PUSHP Transactions of SR Beneficiaries	REA
22	commercial_px_ENTITY	Day-wise, Block-wise Details of DAM, GDAM, RTM, HPDAM Transactions in Power Exchanges	REA
23	commercial_remc_schedule	Day-wise, Block-wise Details of REMC Schedules involving SR RE Generators/ SR Entities	REA
24	commercial_rnw_schedule	Day-wise, Block-wise Details of RENEWABLE bilateral Schedules involving SR RE Generators/ SR Entities	REA
25	commercial_rtm_px_iex	Day-wise, Block-wise Details of RTM Transactions of SR Entities in IEX	REA
26	commercial_rtm_px_pxi	Day-wise, Block-wise Details of RTM Transactions of SR Entities in PXI	REA
27	commercial_sch_ENTITY	Day-wise, Block-wise Schedules of ENTITY from all Sources	REA
28	commercial_urs_ENTITY	Day-wise, Block-wise Details of URS Power scheduled to ENTITY from ISGSs	REA
29	Commercial_Gen_Parameters	Details of various Parameters of Generators present in the region	REA
30	commercial_sch_sced	Day-wise, Block-wise Schedules of SCED Generators of SR	SCED
31	commercial_sch_sced_acount	Day-wise, Block-wise Amounts from SCED Generators of SR	SCED



भारत सरकार/Government of India
विद्युत मंत्रालय/Ministry of Power
केन्द्रीय विद्युत प्राधिकरण/Central Electricity Authority
एन.पी.सी. प्रभाग/National Power Committee Division
1st Floor, Wing-5, West Block-II, RK Puram, New Delhi-66

No. CEA-GO-15-14/1/2021-NPC Division **83-104**

Date: 27.02.2024

To
(As per distribution list)

विषय: 03.02.2024 को बैंगलोर में आयोजित एनपीसी की 14वीं बैठक के कार्यवृत्त के संबंध में।
Subject: Minutes of the 14th Meeting of NPC held on 03.02.2024 at Bangalore-reg.

कृपया 03.02.2024 को बैंगलोर में आयोजित एनपीसी की 14वीं बैठक का कार्यवृत्त आपकी जानकारी और आवश्यक कार्रवाई के लिए संलग्न है। यह सीईए वेबसाइट पर भी उपलब्ध है।

The Minutes of the 14th meeting of NPC held on 03.02.2024 at Bangalore is enclosed herewith for your kind information and necessary action, please. The same is also available on CEA website.

भवदीय/Yours faithfully

Encl: As above

रुषिका शरण
 27/02/24

(रुषिका शरण/Rishika Sharan)
 मुख्य अभियन्ता एवं सदस्य सचिव, रा.वि.स /
 Chief Engineer & Member Secretary, NPC

Distribution List (Members of NPC):

1. Shri. Chowna Mein, Hon'ble Dy. Chief Minister and I/C Power, Govt. of Arunachal Pradesh, Block No.2, 5th Floor, A.P. Civil Secretariat, Itangar-791111. [Email: chowna.mein@gov.in]
2. Shri Ginko Lingi, Chairman, TCC, NERPC & Chief Engineer (P), TPMZ , Department of Power, Govt. of Arunachal Pradesh, Vidyut Bhawan, zero Point, Itanagar-791111. [Email: ginko.lingi@gmail.com]
3. Shri K Vijayanand, Chairperson, SRPC, Chairman & Managing Director , Transmission Corporation of Andhra Pradesh Limited, Vidyut Soudha, Gunadala, Eluru Rd, Vijayawada, Andhra Pradesh 520004.[Email: cmd.aptransco@aptransco.in ; vjanand@nic.in]
4. Shri AKV Bhaskar, Chairperson TCC, Director (Transmission & Grid Management), Transmission Corporation of Andhra Pradesh Limited, Vidyut Soudha, Gunadala, Eluru Rd, Vijayawada, Andhra Pradesh 520004. [Email: kannanvenkatabhaskar.angulabharanam@aptransco.co.in]
5. Shri Vishal Kumar Dev, IAS, Chairman ERPC, Principal Chief Secretary to Govt., Department of Energy, Govt. of Odisha, Bhubaneswar. [Email: chairman@gridco.co.in]
6. Shri Trilochan Panda, Managing Director, GRIDCO, Chairperson TCC ERPC, GRIDCO Limited, Regd. Office: Janpath, Bhubaneswar – 751022.
7. Shri Mohammed Shayin, IAS, Chairperson, NRPC, Managing Director, HVPNL, Shakti Bhawan, C-4, sector-6, Panchkula-134109. [Email: md@hvpn.org.in]
8. Shri Manmohan Matta, Director (Projects), Chairman TCC, NRPC, Shakti Bhawan, C-4, sector-6, Panchkula-134109. [Email: directorprojects@hvpn.org.in]
9. Shri Sanjay Dubey, Chairman WRPC & Principal Secretary (Energy), GoMP, VB-2, Vallabh Bhawan Annex, Mantralay, Bhopal-462001(M.P.).[Email: psenergyn@gmail.com]
10. Shri Raghuraj Rajendran, Chairman-TCC & Managing Director MPPMCL, Block No-15, Shakti Bhawan, Vidyut Nagar, Rampur, Jabalpur-482008. [Email: md@mppmcl.com]
11. Shri N.S. Mondal, Member Secretary, ERPC, 14, Golf Club Road, ERPC Building, Tollygunje, Kolkata-700033. [Email: mserpc-power@nic.in]
12. Shri V.K.Singh, Member Secretary, NRPC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110066.[Email: ms-nrpc@nic.in]
13. Shri Asit Singh, Member Secretary, SRPC, No.29, Race Course Cross Road, Bengaluru-560009. [Email: mssrpc-ka@nic.in]
14. Shri Deepak Kumar, Member Secretary, WRPC, Plot No- F-3, MIDC Area, Marol, Opp. SEEPZ, Central Road, Andheri (East), Mumbai-40093.[email: ms-wrpc@nic.in]
15. Shri K B Jagtap, Member Secretary, NERPC, NERPC Complex, Dong Parmaw, Lapalang, Shillong-793006. [Email: ms-nerpc@gov.in]

Special Invitees:

1. CMD, GRID-INDIA, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016.

2. CMD, NTPC, NTPC Bhawan, SCOPE Complex, Institutional Area, Lodhi Road, New Delhi-110003.
3. CMD, PowerGrid, Saudamini, Plot No.2, Sector-29, Gurugram-122001.
4. COO, CTU, Saudamini, Plot No.2, Sector-29, Gurugram-122001
5. Chief Engineer, GM Division, Sewa Bhawan, CEA, New Delhi.

Copy for kind information to:-

1. SA to Chairperson, CEA, New Delhi
2. SA to Member(Go&D),CEA, New Delhi



केंद्रीय विद्युत प्राधिकरण
Central Electricity Authority

राष्ट्रीय विद्युत समिति
National Power Committee

Minutes of 14th Meeting of
National Power Committee (NPC)
held on 03.02.2024
At Bangalore.

- iv. **The exception report of prolonged non-compliance of the recommendations of the protection audit may be monitored by NPC on the basis of reports submitted by RPCs on half yearly basis.**

(Action: NPC/RPCs)

4. Unified Accounting Software (UAS) for RPCs

- a. MS NPC informed that in the 13th meeting of NPC held on 05th July 2023, it was decided that the commercial subgroup of NPC would recommend on the standardization of the formats and software of the commercial accounts. The standard formats and software finalised by the commercial sub-group would be placed in next NPC meeting.
- b. She further informed that two meetings of commercial sub-group was held on 8.8.23 and 30.10.23. Based on the inputs/comments of ERPC and SRPC, the standardised output formats was discussed and the Final standard output formats (attached as **Annexure-V**) were circulated to all RPCs. The **Standard Output formats contains** the formats of the **Weekly account** (i.e. DSM Settlement Account, Ancillary Service Account (SRAS, TRAS) and Reactive Energy Account), **Monthly Account (i.e. Regional Energy Account, RTA/RTDA, Ramping Account Format, SCED Account, Delayed payment accounts)** and Additional formats of some commercial account. Further, a meeting to discuss the implementation of the Unified Accounting Software for RPCs under the chairmanship of Member (GO&D), CEA was held on 20.11.2023 at Sewa Bhawan, New Delhi in hybrid mode. (MoM is attached at **Annexure-VI**). In this meeting, the implementation of the Unified Accounting Software for RPCs were discussed in detail and the following decisions were taken:
- i. ERPC shall be the Nodal RPC for implementation of Unified Accounting Software for RPCs.
- ii. A Joint Committee shall be formed with representatives (Director/Superintending Engineer/ Deputy Director Level) from all RPCs, GM Division, CEA and NPC Secretariat. Superintending Engineer, ERPC would be the Member Convener of Joint Committee with following Term of Reference (TOR):
- Hiring of consultant for preparation of DPR
 - Identifying the possible source of funding i.e. through PSDF or RPC funds.
 - Preparation of NIT and other documents related to tendering.
 - Selection of vendor for commercial account software.
 - Execution of work order and certification of completion of work.
 - Recommend on O&M/AMC/Ownership of project.
 - Any other matter related to Unified Accounting Software.
- c. She further informed that in the pre-meeting among MS, RPCs and MS, NPC held on 29.01.2024, MS SRPC suggested that the development of Unified Accounting Software may be carried out in two phases. In Phase –I, Technical specifications and scope of work for commercial accounts may be finalised and in the Phase –II, Additional formats for information or analysis of operational data, report formations may be carried out.

MS SRPC also suggested the working level officers may be involved in the finalisation of technical specifications. In pre-meeting, NRPC representative suggested that the parallel efforts may also be carried out for identifying non uniformity in Commercial accounts wrt different RPCs so that same may be accommodated simultaneously in process finalisation. Further, a dedicated team/committee may also be formed at RPC for carrying out changes required after implementation of the UAS.

- d. The standard output formats of commercial accounts and constitution of the Committee along with its ToR was proposed for approval of the Committee.
- e. **Chairperson SRPC** raised the issue of funding for the Uniform Accounting Software and suggested that the PSDF funding may be provided for the smoother implementation of the project considering the importance of Accounts. It was suggested to plan the implementation of the UAS in the comprehensive manner considering the interoperability and uniformity among all the regions of the country.
- f. **Chairperson NPC queried regarding the cost estimates for implementation of the Unified Accounting Software for all RPCs.** MS NRPC informed that RPCs may share the cost for hiring of consultant and preparation of DPR, however, the project cost may be funded through PSDF.
- g. **Director (System Operation) Grid-India** informed that the cost of implementation for Uniform WBES software was around Rs. 20 crore including the cost of AMC. Accordingly, UAS may cost around Rs. 20-30 crore and the provision of migrating to 5 min scheduling was made in their WBES and other applications. It was opined that similar provision need to be made in Unified Accounting Software (UAS) of RPCs.
- h. **Chairperson NPC** suggested to prepare a proposal for UAS and thereafter, the PSDF funding may be sought. The project may be considered as critical project under PSDF guidelines for bringing interoperability uniformity in the system and importance of timely and accuracy of Regional accounts. ERPC will be nodal RPC for implementation of the UAS and the ToR of the Joint Committee may be revised considering the NEA and for carrying out changes required post implementation of the UAS. He also suggested to include the NTPC and some states as member of the Joint Committee.
- i. **Decisions of the Committee:**
 - i. **The standard output formats of commercial accounts were approved.**
 - ii. **ERPC will be nodal RPC for implementation of the UAS and the ToR of the Joint Committee may be revised considering the NEA, provisions of migrating to 5 min scheduling and for carrying out changes required post implementation of the UAS. NTPC and some states may be included as member of the Joint Committee.**

(Action: ERPC/JC/NPC)

- iii. **A proposal for UAS may be prepared and thereafter, the DPR may be submitted to nodal agency i.e. NLDC for PSDF funding. The project may be considered as critical item under PSDF guidelines for bringing interoperability and uniformity in the system and importance of timely and accuracy of**

1. REA Accounts Formats:

Regional Power Committee

Regional Energy Account for the Month of _____

1.1 Details of Plant Availability Factor (PAF) for CS Stations

High Demand Season for FY 20__-__

Peak Hours ()

ISGS	IC (MW)	Auxiliary Consumption	NPAF (%)	PAFM (%)	PAFC (%)	High Demand Season				Low Demand Season			
						Peak Hour		Off-Peak Hour		Peak Hour		Off-Peak Hour	
						PAFM (%)	PAFC (%)	PAFM (%)	PAFC (%)	PAFM (%)	PAFC (%)	PAFM (%)	PAFC (%)
ISGS-1													
ISGS-2													
.....													
.....													

1.2 Details of Plant Load Factor (PLF) for CS Stations

High Demand Season for FY 20__-__

Peak Hours ()

ISGS	IC (MW)	Auxiliary Consumption	NPLF (%)	PLFM (%)	PLFC (%)	High Demand Season				Low Demand Season			
						Peak Hour		Off-Peak Hour		Peak Hour		Off-Peak Hour	
						PLFM (%)	PLFC (%)	PLFM (%)	PLFC (%)	PLFM (%)	PLFC (%)	PLFM (%)	PLFC (%)
ISGS-1													
ISGS-1													
.....													
.....													

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

1.3 Details of Misdeclaration of Declared Capability by CS Stations

Entity	Mis Declaration Date	Incident No	No. of days for which FC Deductible

1.4 Weighted Average Percentage Allocation - Peak & Off – Peak Hours combined from ISGS for the FY 20__ - __ Month- 20__

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)									
ISGS-1 (Cumulative 2023-24)									
ISGS-2 (August-2023)									
ISGS-2 (Cumulative 2023-24)									
...									
...									
ISGS-13 (August-2023)									
ISGS-13 (Cumulative 2023-24)									

1.5 Details of Scheduled Energy to the Beneficiaries for Month, Year

1.5.a Energy Scheduled from ISGS to the Beneficiaries for Month, Year

All units in MWH

Entity		Ben-1	Ben-2	...	...	...	...	...	Total
ISGS-1									
ISGS-2									
...									
Hydro Stations	Name of Hydro stations								
	Free Energy of Hydro Stations								
Nuclear Stations									
Solar									
Wind									

Shared Projects								
STOA Export by Goa								

Note: Energy unit in MWH and upto 3 decimal.

1.5.b Energy Scheduled from Renewable ISGS for the Month, Year

All units in MWH

Entity	Total Energy Schedule (MWH)	Total Actual Energy (MWH)	Net Deviation for the purpose of REC (MWH)
SOLAR ENTITY			
S1			
S2			
...			
NON SOLAR ENTITY			
NS1			
NS2			
...			
Total Solar Deviation for the purpose of REC			
Total Non-Solar Deviation for the purpose of REC			

Note: Energy unit in MWH and upto 3 decimal.

1.6 Energy Scheduled above Normative PLF from Inter State Generating Stations for the FY 2023-24 (Incentive Energy)

1.6.a. High Demand Season

Details of Incentive Energy (in MWH) Beyond Target PLF							
Station Name	State Name	Incentive Energy Peak Period			Incentive Energy Off Peak Period		
		Incentive Energy upto Last Month (A)	Incentive Energy upto Current Month (B)	Incentive Energy for the Month (C)=(B)-(A)	Incentive Energy upto Last Month (D)	Incentive Energy upto Current Month (E)	Incentive Energy for the Month (F)=(E)-(D)
Station-1							

	Total							
Station-2								
	Total							
Station-N								
	Total							

1.6. b. Low Demand Season

Details of Incentive Energy (in MWH) Beyond Target PLF							
Station Name	State Name	Incentive Energy Peak Period			Incentive Energy Off Peak Period		
		Incentive Energy upto Last Month (A)	Incentive Energy upto Current Month (B)	Incentive Energy for the Month (C)=(B)-(A)	Incentive Energy upto Last Month (D)	Incentive Energy upto Current Month (E)	Incentive Energy for the Month (F)=(E)-(D)
Station-1							
	Total						
Station-2							
	Total						
Station-N							
	Total						

1.7. Compensation for Degradation of Heat Rate (SHR) and Auxiliary Energy Consumption (AEC)

As per Detailed Operating Procedure on Reserve Shutdown and Compensation Mechanism issued on 05-05-2017 by Hon'ble CERC.

From Date: dd-mm-yyyy, To Date: dd-mm-yyyy

1.7 a Information used for ECR calculation

Entity (SR-ISGS)	Installed capacity MCR (MW)	Normative SHR or Net SHR (kCal/kWh)	Normative SFC (ml/kWh)	CVSF (kCal/ml)	LPPF (Rs./MT)	LPSFI (Rs./KL)	Normative LC (kg/kWh)	LPL (Rs./kg)	Normative Aux. Cons (%)	CVPF (kCal/kg)	Actual GHR / SHR (kCal/kWh)	Actual SFC (ml/kWh)	Actual LC (kg/kWh)	Actual Aux. Cons (%)
ISGS-1														
ISGS-2														
...														
ISGS-13														

1.7 b Outage Data details for Stations for the Month, Year

Entity	Unit No.	Installed Capacity	Start-Date time	End Date time	Type of Outage
ISGS-X					
ISGS-X					
...					

Note: Outage Duration has been calculated from 01-04-2023 at 00:00 hrs.

1.7 c Compensation Calculated for each ISGS Stations up to Month , Year

Energy charge rate (ECR) in Rupees per kWh on ex-power plant basis is determined to three decimal places.

ENTITY (SR-ISGS)	Average Unit Loading (%)	Total schedule (MWH)	ECR (Norm) (Rs/kWh)	ECR (Actual) (Rs/kWh)	ECR (SE) (Rs/kWh)	ECR (DC) (Rs/kWh)	EC (Norm) (Rs)	EC (Actual) (Rs)	EC (SE) (Rs)	EC (DC) (Rs)	EC (A)- EC (N) (Rs)	Comp (P) (Rs)	Comp (F) (Rs)
ISGS-1													
ISGS-2													
...													
ISGS-13													
TOTAL													

1.7 d Details of Entitlement and Schedule of Beneficiaries and SCED from ISGS

SR-ISGS	Ben-1		Ben-2		...		Ben-15		SCED	
	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)	Ent (MW)	Sch (MW)
ISGS-1										
ISGS-2										

...																	
ISGS-13																	

1.7 e Proportion of (Un-requisitioned Energy of beneficiaries when Schedule is below 85% of its entitlement from ISGS) and (SCED)

Rounded off values are shown in the table below; however, actual values are considered for computation of compensation payable by beneficiary.

SR-ISGS (NTPC)	Ben-1	Ben-2	Ben15	SECD	Total
ISGS-1																	
ISGS-2																	
...																	
ISGS-13																	

1.7 f Compensation Amount payable by Beneficiary

SR-ISGS (NTPC)	Ben-1	Ben-2	Ben15	SECD	Total
ISGS-1																	
ISGS-2																	
...																	
ISGS-13																	
Total for each Beneficiary																	

1.7 g Statement of Compensation due to Part Load Operation on Account of SCED

Month, Year

SCED Generator	Decrement due to SCED up to the month (MWhr)	Compensation Amount Payable on account of SCED from National Pool Account (SCED) to SCED Generator upto the month (Rs)	Compensation Amount Payable on account of SCED from National Pool Account (SCED) to SCED Generator for the month (Rs)	Payable/ Receivable for the month (Rs)
ISGS-1				
ISGS-2				
...				
ISTS-13				
Total				

**1.8 Details of Intra/ Inter Regional Exchanges through Power Exchanges (COLLECTIVE TRANSCATION DETAILS)
FROM DD/MM/YYYY TO DD/MM/YYYY**

(In MWH)

	Indian Energy Exchange				Power Exchange of India				Hindustan Power Exchange Limited			
	Import (Region Peri)	Import(State Peri)	Export(Region Peri)	Export(State Peri)	Import(Region Peri)	Import(State Peri)	Export(Region Peri)	Export(State Peri)	Import(Region Peri)	Import(State Peri)	Export (Region Peri)	Export(State Peri)
DAM												
Total												
Region												
Through												
Region												
Inter national												
RTM												
Total												
Region												
Through												
Region												
Inter national												
GDAM												
Total												
Region												
Through												
Region												
Inter national												
HPDAM												
Total												
Region												
Through												
Region												
Inter national												

1.9 Bilateral Open Access Transactions (GNA/T-GNA/REMC Details) for the month

SL No.	Access	Applicant	From State	From Utility	To State	To Utility	IR Link	Approval No.	Schedule (MWh)
1	GNA								
2	GNA								
3									
4	TGNA								
	TGNA								
	...								
	...								
	REMC								
	REMC								

1.10 Certification of DC and Computation of Plant Availability Factor (PAF) and Plant Load Factor (PLF) for IPPs

Up to Month, Year

STATION NAME	State	Contracted Capacity (MW)	Availability up to the Month(kWh)	Plant Availability Factor (PAF)	Plant Load Factor (PLF)
IPP-1					
IPP-2					
...					

For Month, Year

STATION NAME	State	Contracted Capacity (MW)	Availability up to the Month(kWh)	Plant Availability Factor (PAF)	Plant Load Factor (PLF)
IPP-1					
IPP-2					
...					

1.11 Statement of Scheduled Energy for exported electricity by Generation Plants (using fuel except nuclear, gas, domestic linkage coal, mix fuel) for claiming Input Tax Credit

I. Generating Station Name

1. Month in which electricity was exported :
2. Name of Generating Station and Location :
3. Name of Company :
4. GSTIN of Company :
5. Installed Capacity of Generating Station (in MW) :
6. Connection point state and Region :
- 7. Details of Scheduled Energy during the month :**

Domestic	
Name of Domestic Entity	Scheduled Energy in (MU)
.....	
.....	
Power Exchange	
Subtotal Domestic Sale (A)	
Cross Border	
Name of Cross Border Country with Exporting entity	Scheduled Energy in (MU)
Subtotal Export (B)	
Total Scheduled Energy of Generating Station (C=A+B)	

Note: As per decision taken in the special meeting held on 01st May'2023 under the chairmanship of Member (Power System), CEA.

11. Availability, Schedule and Un-requisition Surplus Data of CGS (For Information) up to Month, Year

All values in MU. This is only for information. It has no commercial implications.				
STATION NAME (SR-ISGS)	AVAILABILTY	SCHEDULE	SURRENDERAT EX-BUS	SURRENDER AT GENERATOR TERMINAL (SURRENDER AT EX- BUS/(1-NAux))
ISGS-1 (NAux= XX%)				
ISGS-2 (NAux= XX%)				
...				
ISGS-13 (NAux= XX%)				

12. _____ Region High Demand & Low Demand Seasons and the hours of Peak and Off-Peak periods during a day declared by ___ RLDC

YEAR (F.Y)	High demand Season	Low Demand Season

Period	Hours of Peak Period (4 Hours) during a day

1. Details of Weighted Average Allocation from ISGS for 2023-24

1.1 Weighted Average Allocation - Peak & Off-Peak Hours combined from ISGS for the FY 2023-24 (August-2023)

(In MW terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

1.2 Weighted Average Allocation High Demand Season- Peak Hours from ISGS for the FY 2023-24 (April, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

1.3 Weighted Average Allocation High Demand Season- Off Peak Hours from ISGS for the FY 2023-24 (April, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

1.4 Weighted Average Allocation Low Demand Season- Peak Hours from ISGS for the FY 2023-24 (August, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2															

(Cumulative 2023-24)															
...															
...															

1.5 Weighted Average Allocation Low Demand Season- Off Peak Hours from ISGS for the FY 2023-24 (August, 2023)

(In Percentage Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

(In MW Terms)

ISGS	Ben-1	Ben-2	Total
ISGS-1 (August-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (August-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

2. Details of Incentive Energy for Inter State Generating Stations for the FY 2023-24

2.1 Details of Energy Scheduled above Normative PLF from ISGS – Up to April-2023 during Peak Hours

ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															

2.2 Details of Incentive Energy from ISGS – Up to April-2023 during Peak Hours

ISGS	Normative Schedule Energy in KWhr	Schedule Energy in KWhr	Incentive Energy in KWhr
ISGS-1			
ISGS-2			
...			

2.3 Details of Energy Scheduled above Normative PLF from ISGS – Up to April-2023 during Off-Peak Hours

SR-ISGS	Ben-1	Ben-2	Total
ISGS-1 (April-2023)															
ISGS-1 (Cumulative 2023-24)															
ISGS-2 (April-2023)															
ISGS-2 (Cumulative 2023-24)															
...															
...															
...															

2.4 Details of Incentive Energy from ISGS – Up to April-2023 during Off-Peak Hours

SR-ISGS	Nor.Schedule Energy in KWhr	Schedule Energy in KWhr	Incentive Energy in KWhr
ISGS-1			
ISGS-2			
...			

2. RTA Format:

.....REGIONAL POWER COMMITTEE

2.1 RTA for the billing month

S.No.	Name of DIC	GNA (MW)	GNA waiver (MW)	Net GNA (MW)	Usage based AC system charges (Rs.)	Balance AC system charges (Rs.)		National Component (Rs.)		Regional Component (Rs.)	Transformer component (Rs.)	Total Transmission Charges payable in Rs.
					AC-UBC	AC-BC	NC-RE	NC-HVDC	RC	TC		

2.2 Details of entity-wise bilateral billing

S.No.	DIC	Name of the Assets	Bilateral charges (Rs)	Remarks
	DIC1			
	DIC2			

3. RTDA Format:

.....REGIONAL POWER COMMITTEE

3.1 RTDA for the billing month

SL No.	Gen/State/DIC	Located in State	Deviation due to Over drawl (MW)	Deviation due to Over injection (MW)	Total Deviation (MW)	Transmission Deviation Rate (Rs/MW)	Deviation Charges (in Rs.)
Beneficiaries of Region							
Inter State Generating Stations							
SELLER							
Inter-National							
Generating Station Under INFIRM Stage							
Inter-National							

3.2 Day wise RTDA format

.....REGIONAL POWER COMMITTEE

Day wise RTDA report for the Month

SL No.	Gen/State/DIC	Located in State	Deviation due to Over drawl (MW)	Deviation due to Over injection (MW)	Total Deviation (MW)	Transmission Deviation Rate (Rs/MW)	Deviation Charges (in Rs.)
Beneficiaries of Region							
Inter State Generating Stations							

SELLER							
Inter-National							
Generating Station Under INFIRM Stage							
Inter-National							

Standard Format of Commercial Accounts

1. DSM Account Format:

1.1 Final Weekly DSM Account

DSM Settlement Account for the week From DD-MM-YYYY to DD-MM-YYYY

Entity	Total Deviation (MWhr)	Under Drawl Charges/ Over Injection Charges (Rs)	Over Drawl Charges/ Under Injection Charges (Rs)	Post-facto Charges/ Charges for Drawl without Schedule (Rs)	Final Charges (Rs)	Payable ToPool (“-“)/ Receivable From Pool (“+”)
States/UT/Drawee Entities						
Ent-1						
Ent-2						
....						
CGS						
CGS-1						
CGS-2						
...						
General Sellers						
GS-1						
GS-2						
...						
WS-Seller						
Solar Entity						
SE-1						
SE-2						
...						
Wind Entity						
WE-1						
WE-2						
...						
Inter- regional						

Inter- National						
Infirm generators						

(All Figs. in Rs.)

Payable To The Pool (A) :	
Receivable From The Pool (B) :	
__ Deviation (A-B) :	

1.2 Day-wise Report Format:

(All Figs. in Rs.)

Date	Total Scheduled (MWH)	Total Actual (MWH)	Deviation (MWH)	Final Charges (Rs)	Payable To Pool (“-“)/ Receivable From Pool (“+”)
States/UT/Drawee Entities					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
CGS					
Day-1					
Day-2					
Day-3					

Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
General Sellers					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
WS-Seller					
Solar Entity					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Wind Entity					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Inter- regional					
Day-1					
Day-2					

Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Inter National					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Infirm Generator					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					

Note: Energy unit in MWH and upto 3 decimal.

2. Ancillary Service Account:

2.1 SRAS Settlement Account for the week from dd-mm-yyyy to dd-mm-yyyy

Payments to the SRAS Provider(s) from the DSM pool

Sr. No.	SRAS Provider	UP Regulation due to SRAS (MWh)	Down Regulation due to SRAS (MWh)	Net Energy (MWh)	Energy Charges/ Compensation Charges (Rs.)	Incentive Charges (Rs.)	Total Charges (Rs.)	Payable to the pool/Receivable from the pool

Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Inter National					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					
Infirm Generator					
Day-1					
Day-2					
Day-3					
Day-4					
Day-5					
Day-6					
Day-7					
Weekly Total					

Note: Energy unit in MWH and upto 3 decimal.

2. Ancillary Service Account:

2.1 SRAS Settlement Account for the week from dd-mm-yyyy to dd-mm-yyyy

Payments to the SRAS Provider(s) from the DSM pool

Sr. No.	SRAS Provider	UP Regulation due to SRAS (MWh)	Down Regulation due to SRAS (MWh)	Net Energy (MWh)	Energy Charges/ Compensation Charges (Rs.)	Incentive Charges (Rs.)	Total Charges (Rs.)	Payable to the pool/Receivable from the pool

Total								

Notes :

1. Energy unit in MWH and upto 3 decimal.
2. Energy Charges/Compensation Charges for SRAS provider has been calculated as per the rate furnished by the respective SRAS providers in Format AS and the same published in RPC website.
3. The Incentive has been calculated based on actual performance of SRAS providers.

**2.2 SRAS Actual Performance Statement by __RPC
from dd-mm-yyyy to dd-mm-yyyy**

Sr. No.	SRAS Provider	dd-mm-yyyy	dd-mm-yyyy	dd-mm-yyyy	...	dd-mm-yyyy	dd-mm-yyyy	Remarks (Disqualification period)
		Actual Performance(%)	Actual Performance(%)	Actual Performance(%)	...	Actual Performance(%)	Actual Performance(%)	
					...			
					...			
					...			

2.3 TRAS Account:

**TRAS Settlement Account for the week from dd-mm-yyyy to dd-mm-yyyy
(Short Fall/Emergency)**

Net Charges Payable/Receivable by the TRAS Provider(s) to/from the Regional Deviation and Ancillary Service Pool Account in Shortfall/Emergency Condition

SL No.	TRAS Provider	Energy schedule under shortfall/Emergency TRAS-Up (MWH) (A)	Total Charges /Compensation Charges for Shortfall/Emergency TRAS-Up (Rs) (B)	Energy scheduled under Shortfall/Emergency TRAS-Down (MWh) (C)	Total Charges / Compensation Charges for Shortfall/Emergency TRAS-Down to be paid back to Pool (Rs) (D)	Net Charges (Rs) (E)=(B)-(D)	Payable from Pool to TRAS Provider/ Receivable by Pool from TRAS Provider

Notes:

A) TRAS settlement account for the week dd-mm-yyyy to dd-mm-yyyy has been prepared as per the detailed procedure for Tertiary Reserve Ancillary Services (TRAS) approved by CERC.

B) Total Charges for TRAS providers have been calculated as per the rates furnished by the respective TRAS providers and the same published in ___RPC website.

2.4 TRAS Settlement Account by RPC (Day Ahead and Real Time Market)

TRAS Account for Week from dd-mm-yyyy to dd-mm-yyyy.

Net Charges Payable/Receivable by the TRAS Provider(s) to/from the Regional Deviation and Ancillary Service Pool Account

S. No	TRAS Provider Name	TRAS-Up in Day Ahead AS Market				TRAS-Up Energy in Real Time AS Market				Total Charges/compensation charge for TRAS Up (Rs) (I)=(C)+(D)+(G)+(H) (11)
		TRAS Up Cleared (MWh) (A) (3)	TRAS-Up Energy Scheduled (MWh) (B) (4)	TRAS Up Energy Charges (Rs.) (C) (5)	TRAS-Up Commitment Charges (Rs.) (D) (6)	TRAS Up Cleared (MWh) (E) (7)	TRAS-Up Energy Scheduled (MWh) (F) (8)	TRASUp Energy Charges (Rs) (G) (9)	TRAS-Up Commitment Charges (Rs) (H) (10)	
1										
2										
3										

TRAS-Down in Day Ahead AS Market		TRAS-Down in Real Time AS Market		Net Charges (Rs) (N)=(I)-(K)- (M) (15)	Payable from Pool to TRAS Provider/Receivable by Pool from TRAS Provider
TRASDown Energy Scheduled (MWh) (J) (12)	TRASDown Charges to be paid back to Pool (Rs) (K) (13)	TRASDown Energy Scheduled (MWh) (L) (14)	TRASDown Charges to be paid back to Pool (Rs) (M) (15)		
1					
2					

3. Reactive Energy Account Format:

3.1 Weekly Reactive Energy Account format after final Adjustment:

Regional Entity Name	MVArh_H	MVArh_L	Net Amount (Rs.)	Payable to Pool (-)/ Receivable from Pool (+)
States/UTs/ Drawee Utilities				
CGS				
General Sellers				
WS Seller (Solar Entity)				
WS Seller (Wind Entity)				
WS Seller (Others)				

(All Figs. in Rs.)

Payable To The Pool :	
Receivable From The Pool :	

3.2 Meter-wise Reactive Energy Details

Regional Entity Name	Station Name	Element Name	Meter No	MVArh_H	MVArh_L
Ent-1					
Ent-2					
...					

3.3 Day wise Format:

Reactive Energy export (-) / import (+) under high & low voltage condition

And Reactive Energy Charges thereof

(Reactive Energy Exchange in MVARH & Charges in Rs.)

Regiona l Entity Name	ISTS/B BMB/D VC etc.	Drawl Point	Day1 (HV, LV)...	Day7(HV, LV)	Total HV	Total LV	Charges HV	Charges LV

4. Ramping Accounting Format.

_____ REGIONAL POWER COMMITTEE

Ramp Performance of Thermal Power Stations for Month _____										Month
Number of months in computation (M):										
Station	Total no. of Time Blocks (Tm)	No. of Time Blocks Where Declared Ramp Up & Down rate \geq 1%(Td)	Td /Tm	No. of time blocks where scheduled ramp \geq 1%/min (D)	Out of (D), no. of time blocks where actual ramp \geq scheduled ramp (E)	Out of (D), no. of time blocks where actual ramp \geq 1%/min (F)	Average actual ramp rate during blocks when scheduled ramp \geq 1%/min (%/min) (AARR)	E/D	F/D	Recommended change in RoE (%)
Generator 1										
Generator 2										
Generator 3										
Generator 4										

5. SCED Account:

_____ REGIONAL POWER COMMITTEE

SCED Settlement Account for the Month _____

SL No.	SCED Generator	Increment due to SCED scheduled to VSCED (MWhr) (A)	Decrement due to SCED scheduled to VSCED (MWhr) (B)	Charges to be paid to SCED Generators from National Pool (SCED) (in Rs) (C)= (A) x V.C.	Charges to be Refunded by SCED Generators to National Pool (SCED) (in Rs) (D)= (B) x V.C.	Net Charges (in Rs)	Payable (+) /Receivable (-)
1							
2							
3							
	Total						

6. Details of Delayed Payments to DSM, Reactive Energy, Congestion & Ancillary Services Pool and Interest Payable for Delayed Payments

SN	Constituent	Week No	Week	Amount Payable (Rs.)	Amount Paid (Rs.)	Difference(Rs.)	Due Date for Payment (7 Days)	Date of Payment	Interest to be paid for Delayed Payments
1									
2									
...									

Annexure-VIII 14th NPC

National Power Committee

National Energy Account

Week from -----to -----

A. Deviation Settlement Account Statement

DSM Weekly Statement (From DD-MM-YYYY to DD-MM-YYYY)

Inter-regional							
From ↓/ To →	ER	WR	NR	SR	NER	Net Charges (Rs)	Payable To National Pool / Receivable From National Pool
ER	-						
WR		-					
NR			-				
SR				-			
NER					-		
Inter-National							
Bhutan							
Bangladesh							
Nepal							
Dagachu HEP							
Basachu HEP							
...							

DSM Pool Summary	
Total Payable to National Pool	
Total Receivable from National Pool	
Net Total	

B. Settlement through National Pool Account

Region	DSM Surplus (+)/ Deficit (-) (A)	RRAS Charges paid from DSM Pool a/c (B)	RRAS Charges received in DSM Pool a/c (C)	AGC Net Charges paid from DSM Pool a/c (D)	Net Surplus (+)/ Deficit (-) (A-B+C-D)	Inter-Pool transfer required (Yes/No)
ER						
WR						
NR						
SR						
NER						
Total						

Reactive Energy Account Statement

Statement of Reactive Energy Charges

(For The Period from DD-MM-YYYY to DD-MM-YYYY)

1. Reactive Energy Charges with the National Pool (For the Period from DD-MM-YYYY to DD-MM-YYYY]

Regional Entity Name	MVArh_H	MVArh_L	Net Reactive Energy Charges (Rs.)	Payable to Pool (-)/ Receivable from Pool (+)
Inter-National				
IN-1				
IN-2				
...				
Reactive Pool Summary				
Total Payable to National Pool				
Total Receivable from National Pool				
Net Total				

SCED MONTHLY ACCOUNT STATEMENTS

1. National SCED Account Statement - for the month of Month, Year

* (+) means payable from the 'National Pool Account (SCED)' to SCED Generator
/ (-) means receivable by 'National Pool Account (SCED)' from SCED Generator

S.No	SCED Generator	Increment due to SCED scheduled to VSCED (MWHr) (A)	Decrement due to SCED scheduled to VSCED (MWHr) (B)	Charges To be Paid to SCED Generator from National Pool (in Rs) (C=A*VC)	Charges To be Refunded by SCED Generator to National Pool (in Rs) (D=B*VC)	Net Charges(in Rs) (E*= C-D)	Payable from SCED Pool (+)/ Receivable to SCED Pool (+)
	ERPC						
	ISGS1						
	ISGS2						
2	NERPC						
	ISGS1						
	ISGS2						
	NRPC						
	ISGS1						
	ISGS2						
	SRPC						
	ISGS1						
	ISGS2						
	WRPC						
	ISGS1						

	ISGS2						
	Total						

2. National Statement of Compensation due to Part Load Operation on Account of SCED for the Month of Month, Year

SCED Generator	Decrement due to SCED up to the month (MWhr)	Compensation Amount Payable on account of SCED from National Pool Account (SCED) to SCED Generator upto the month (Rs)	Compensation Amount Payable on account of SCED from National Pool Account (SCED) to SCED Generator for the month (Rs)	Payable to Pool/ Receivable from Pool for the Month (Rs)
ERPC				
ISGS-1				
.....				
NERPC				
ISGS-1				
.....				
NRPC				
ISGS-1				
.....				
SRPC				
ISGS-1				

.....				
WRPC				
ISGS-1				
.....				
Total				

3. National net SCED Benefits Distribution Statement- SCED Generator for the Month of

Table 1: System Savings

Total Saving for the month (Rs.) (A)	Heat Rate Compensation (Rs.) (B)	Net Saving for the month (Rs.) (C)	SCED UP + DOWN in MWH (E)

Table 2: Share of System Savings for Merchant Generators

Generator	SCED Schedule MWH	Contribution in SCED	Benefit accrued to Generator (Rs.)	Estimated benefit (Rs. per KWH)	Final benefit (Rs.)

Table 3: Share of System Savings for Untied capacity

Generator	SCED Schedule MWH	Contribution in SCED	Benefit accrued to Generator (Rs.)	Estimated benefit (Rs. per KWH)	Final benefit (Rs.)

ISGS1							
ISGS2							
.....							

4. National net SCED Benefits Distribution Statement- Beneficiary for the Month of

Sl No	State	REGION	Total schedule Energy(Mwh)	50% Benefit sharing in (Rs)	Additional benefit sharing in (Rs)	Total benefit sharing in (Rs)
1	State1	ER				
2	State2	ER				
3	.....				
4	State1	NER				
5	....	NER				
6	State1	NR				
7	....	NR				
8	State1	SR				
9	.....	SR				
10	State1	WR				
.....	.....	WR				

- A.20.1 NHPC Representative stated that they are repeatedly requesting JKPCL, J&K to open letter of credit (LC) for an amount of 96.76 Crs in accordance with letter of MoP notification no. 23/22/2019- R&R (Part-4) dated 03.06.2022 "Electricity (Late Payment Surcharge and Related matters) Rules, 2022". However JKPCL, J&K has yet not opened the LC for the requisite amount in favour of NHPC Ltd.
- A.20.2 NHPC Ltd. reiterated that in accordance with the Ministry of Power (MoP), Govt. of India notification mentioned, requisite LC is necessarily required to be opened by distribution company in favour of generating company before schedule of power to them.
- A.20.3 LC is to be opened by JKPCL, J&K of mentioned amount worked out on the basis of 105% of last 12 months average billing. In this regard, last reminder was sent to JKPCL, J&K on 11.08.2023.
- A.20.4 Member Secretary, NRPC highlighted that the issue is same as of SJVN. So discussion on the same has already been done under agenda no. 7 of this meeting.

Decision of the Forum:

Forum decided to send a DO letter by Chairperson, NRPC to Secretary (Power), J&K and MHA, GOI highlighting the issue for early resolution.

A.21 Replacement of Various Size of ACSR Conductor (i.e. wolf/panther/zebra/moose) with Equivalent HTLS Conductor to Reduce the Overloading of Existing Transmission Lines and also to Improve the Reliability of Power System in Haryana under PSDF Grant (agenda by HVPN)

- A.21.1 EE (P) apprised about agenda of HVPN regarding re-conductoring work on their line.
- A.21.2 HVPN representative added that due to exponential growth in power demand, the existing lines are unable to cater power demand in the various region of Haryana. It is further submitted that erection of new lines in these regions are not feasible due to non-availability of RoW (Right of Way). Therefore, replacement of existing ACSR conductors with equivalent HTLS conductor of higher current carrying capacity is the only available option to reduce the overloading of existing lines and also to improve the reliability with capability to cater the increased load demand in Haryana.
- A.21.3 He explained that the designing of HTLS conductor depends a lot on the conductors ageing effect on sag and tension, existing creep mitigation methods of the conductor and the profile of existing Transmission lines. Therefore, all the works have been packaged as per existing size (type) of the conductor i.e. wolf, Panther, Zebra &

Moose. Accordingly, following 3 no. packages have been prepared with overall estimated cost of Rs. 290 Crore (approx.) (**Annexure-VII**).

- A.21.4 Chairperson, NRPC highlighted that there are multiple cases of right of way issues in NCR region so HTLS conductor is better option.
- A.21.5 Member Secretary, NRPC appreciated the HVPN for their proposal and addressed the importance of PSDF for improvement of grid network.
- A.21.6 CTU representative stated that intra-state network augmentation may be discussed at CEA level first for technical feasibility.

Decision of the Forum:

Forum accorded in-principal approval to proposal of HVPN for replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor. HVPN was requested to approach CEA for technical evaluation and accordingly, DPR for PSDF may be put up for approval of NRPC in upcoming meetings.

A.22 Non submission of Letter of Credit (LC) by M/s. JKPCL (agenda by NPCIL)

- A.22.1 NPCIL representative apprised that as per Power Purchase Agreement the Discom- M/s. JKPCL is required to open LC as payment security mechanism for an amount worked out on the basis of 105% of last 12 months average billing.
- A.22.2 He highlighted that LC of JKPCL has expired on 13.11.2019, and since then, inspite of various reminders, DISCOM has not acceded to open LC in favour of NPCIL for power supplied from Rajasthan Atomic Power Station and Narora Atomic Power Station.
- A.22.3 He further stated that NPCIL wants to get it resolved amicably without any litigation or arbitration way. Accordingly, he requested Forum to sort the matter on its level.
- A.20.5 Member Secretary, NRPC highlighted that the issue is same as of SJVN and NHPC. So discussion on the same has already been done under agenda no. 7 and 20 of this meeting.

Decision of the Forum:

Forum decided to send a DO letter by Chairperson, NRPC to Secretary (Power), J&K and MHA, GOI highlighting the issue for early resolution.



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन-I प्रभाग

Power System Planning & Appraisal-I Division

सेवा में / To,

Chief Engineer (PD&C),
Haryana Vidyut Prasaran Nigam Limited,
Shakti Bhawan,
Sector-6, Panchkula- 134109

विषय /Subject: HVPNL's proposal for replacement of various existing conductors (i.e. wolf/ panther/ zebra/ moose) with equivalent HTLS conductor to reduce the overloading of existing transmission lines

संदर्भ/ Reference:

- (i) HVPNL letter no. Ch-18/HSS-391/III dated 25.08.2023
- (ii) HVPNL letter no. Ch-32/HSS-391/Vol-III dated 13.09.2023
- (iii) HVPNL letter no. Ch-43/HSS-391/Vol-III dated 27.09.2023
- (iv) HVPNL email dated 29.09.2023
- (v) CEA email dated 13.10.2023
- (vi) HVPNL email dated 16.10.2023

महोदय/ Sir,

HVPNL has submitted that due to the exponential growth in electricity demand, the existing lines are unable to cater the power demand in various areas of Haryana. Therefore, HVPNL vide its letters under reference (i) and (ii) has proposed replacement of existing conductors with equivalent HTLS conductors in the areas where erection of new transmission lines is not possible due to non-availability of RoW.

HVPNL's proposal was deliberated in a meeting held on 15.09.2023 amongst CEA, CTUIL, Grid-India and HVPNL wherein CEA requested HVPNL to submit the proper justification for requirement of reconductoring of various lines along with requisite data such as peak loading observed till date, expected loading in future etc. along with load flow studies. The same has been submitted by HVPNL vide letter u/r (iii) and emails u/r (iv) and (vi).

Comments were sought from CTUIL and Grid-India on the above proposal. Based on the comments of CTUIL and Grid-India, our observations are as follows:

- (i) Based on the peak loading data, future load projections and the load flow studies submitted by HVPNL, proposals for reconductoring of following existing lines have been found to be generally in order:

I/31631/2023

Sl. No.	HVPNL's proposal
1.	Reconductoring of Palwal - Mandkola 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-11.186 km)
2.	Reconductoring of Palwal - Hathin 66 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-14.2 km)
3.	Reconductoring of Badshahpur-Sector 35-Harsaru 66 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp along with raising of height at some locations. (Route length-9.96 km)
4.	Reconductoring of Khokrakot-Sector 3 Rohtak 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-7 km)
5.	Reconductoring of Harsaru - Farukhnagar 66 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-12.162 km)
6.	Reconductoring of portion* of HSIIDC- Barwala 66 kV S/c line (created after LILO of one circuit of Madanpur- Barwala 66 kV D/c line at HSIIDC) from Barwala S/s upto the LILO point with HTLS conductor having current carrying capacity of 600 Amp (Route length-4.8 km)
7.	Reconductoring of Daultabad-Sector10 Gurugram 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-10.5 km)
8.	Reconductoring of Chormar- Dabwali 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-24 km)
9.	Reconductoring of Shahpur Begu - Sirsa 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-9.5 km)
10.	Reconductoring of Jiwan Nagar - Rania 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-14 km)
11.	Reconductoring of A4-Ford 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-0.72 km)
12.	Reconductoring of Palla- Faridabad Sector 31 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-3 km)
13.	Reconductoring of Rohtak - Khokrakot Rohtak 132 kV D/c line ckt-1 with HTLS conductor having current carrying capacity of 600 Amp. (Route length-2.7 km)
14.	Reconductoring of Rohtak - Khokrakot Rohtak 132 kV D/c line ckt-2 with HTLS conductor having current carrying capacity of 600 Amp. (Route length-2.7 km)
15.	Reconductoring of portion* of Nissing-Jalmana 132 kV S/c line (which is to be LILOed at Dacher) with HTLS conductor having current carrying capacity of 600 Amp from Nissing S/s up to LILO Point. (Route length-6.5 km)
16.	Reconductoring of Isherwal - Behal 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-19.5 km)
17.	Reconductoring of Chhajpur-Chandoli 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length -8 km)
18.	Reconductoring of Bastara- Madhuban 132 kV S/c with HTLS conductor having current carrying capacity of 600 Amp (Route length-5.821 km)
19.	Reconductoring of Karnal- Madhuban 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp (Route length-12.065 km)
20.	Reconductoring of Nunamajra -MIE Bahadurgarh 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp (Route length-11.3 km)
21.	Reconductoring of portion* of Bapora-Tosham 132 kV S/c line from Tower Location (TL) No. 69-92 with HTLS conductor having current carrying capacity of 600 Amp. (Route length-5.6 km)
22.	Reconductoring of LILO portion* of LILO of Narwana- Jind 132 kV S/c line at Uchana with HTLS conductor having current carrying capacity of 600 Amp.

I/31631/2023

Sl. No.	HVPNL's proposal
	(Route length-1.094 km)
23.	Reconductoring of Nuhiyawali- Khairekan 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp (Route length-25 km)
24.	Reconductoring of Daultabad-IMT Manesar 220 kV D/c line along with LILO of one circuit at 220 kV Substation Sector-85, Gurugram with HTLS conductor having current carrying capacity of 1200 Amp.(Route length-17.56 km)
25.	Reconductoring of LILO portion* of LILO of 2 nd circuit of Daultabad-IMT Manesar 220 kV D/c line at 220 kV Substation Sector-99, Gurugram with HTLS conductor having current carrying capacity of 1200 Amp.(Route length-2.39 km)
26.	Reconductoring of Sector 72 Gurgaon (PGCIL) – Sector 72 Gurgaon (HVPNL) 220 kV 3xS/c line with HTLS conductor having current carrying capacity equivalent to Twin Moose conductor (Route length – 0.12 km)
27.	Reconductoring of Sector 46-Palli 220 kV D/c line with HTLS conductor having current carrying capacity of 1200 Amp. (Route length-8.01 km)
28.	Reconductoring of PGCIL (Khanpur)-Kaithal 220 kV D/c line with HTLS conductor having current carrying capacity of 1200 Amp along with the replacement of existing insulators (Route length – 15.9 km)

*Rest of the line already implemented/ under implementation with high capacity conductor

- (ii) Regarding the remaining proposals submitted by HVPNL, as per the load flow studies, it has been observed that reconductoring of the lines with HTLS conductor may not be required. Therefore, HVPNL is requested to review the proposals or submit proper justification for requirement of the reconductoring of the lines. Details of the proposals along with observations of CEA are enclosed as Annexure A.
- (iii) Along with reconductoring of the proposed lines, HVPNL may also ensure matching of bay upgradation works associated with lines whose reconductoring has been proposed.
- (iv) It has been observed that various Intra State lines and ICTs of HVPNL are 'N-1' non-compliant. HVPNL may plan necessary transmission system strengthening works for the same.

भवदीय / Yours faithfully,

for *Manjari Chaturvedi*
 (मंजरी चतुर्वेदी/Manjari Chaturvedi)
 (निदेशक/ Director)

Copy to:

1. COO (CTUIL), Saudamini, Plot no. 2, Sector -29, Gurgaon-122 001
2. Director (System Operation), Grid Controller of India Limited (Grid-India), B-9, Qutab Institutional Area, Kátwaria Sarai, New Delhi – 110010.

I/32257/2023

48th TCC & 70th NRPC Meeting (17-18 Nov 2023)-MoM~~Annexure - 3~~
3

Annexure-XXXI

- i. Forum appreciated the initiative of RVPN for use of drone technology in tower surveillance.
- ii. RVPN was requested to do analysis on tower design and causes of its failure.

A.31 Replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor to reduce the overloading of existing transmission line thereby improving the reliability of power system in Haryana (agenda by HVPN)

TCC Deliberation

A.31.1 EE (P) apprised that The HVPNL proposal for 31 No. existing overloaded transmission lines for augmentation with HTLS conductor through PSDF funding was discussed in 68th NRPC meeting held on 18.08.2023 for grant of PSDF wherein following was decided:

Forum accorded in-principal approval to proposal of HVPN for replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor. HVPN was requested to approach CEA for technical evaluation and accordingly, DPR for PSDF may be put up for approval of NRPC in upcoming meetings.

A.31.2 Subsequently, the detailed proposal was submitted by HVPN to Central Electricity Authority (CEA) vide letter dated 25.08.2023.

A.31.3 After detailed deliberations and meeting held on dated 15.09.2023, wherein CTU and Grid India were also present, CEA concurred the proposal for augmentation with HTLS conductor of 28 No transmission lines.

A.31.4 Accordingly, Detailed Project Report (**Annexure-XVI**) is placed for approval of Forum.

A.31.5 MS, NRPC appreciated HVPN and encouraged states to come with such proposals from PSDF fund.

A.31.6 In concurrence to CEA, forum approved the DPR for proposal of 28 nos, of lines to be implemented by PSDF fund and recommended to NRPC forum for approval.

NRPC Deliberation

Forum concurred the decision of the TCC forum.

Decision of NRPC Forum:

I/32257/2023

48th TCC & 70th NRPC Meeting (17-18 Nov 2023)-MoM

Forum approved DPR for reconductoring proposal of 28 nos. of lines to be implemented by PSDF fund.

A.32 Philosophy of Drawal Points of ICTs at Transmission Substation of PGCIL (agenda by UPSLDC)

TCC Deliberation

- A.32.1 EE (P) apprised that in 23rd TeST sub-committee meeting held on 21.09.2023 issue of Drawal Points of ICTs at Transmission Substations of PGCIL was deliberated.
- A.32.2 In the meeting, it was submitted that SEM installed at 220kV feeders should be taken for purpose of energy drawal and accounting of states. In case, there is some issue in SEM of 220kV feeders, meters installed at LV side of ICTs may be taken for the purpose of Energy. In the meeting, it was decided that a separate meeting may be held to discuss the issue of philosophy of Drawal points.
- A.32.3 Accordingly, a separate meeting was held on 13.10.2023 at NRPC Secretariat wherein UP raised concern in calculation of energy loss and stated that drawal is being calculated from the POWERGRID substation's HV side, but the drawal point of state is on the LV side of ICT which should be taken for the purpose of energy drawal and accounting of states. MoM of the meeting is attached as **Annexure-XVII**.
- A.32.4 Further, it was deliberated that according to CEA metering regulation, 2005 location of meter to be installed is on the HV side of the ICT and if, two or more states are fed, it should be placed on feeder. However, if LV side of ICT is taken for energy drawal and accounting then ICT losses will be borne by CTU, which will be distributed all over India which may not be a correct practice.
- A.32.5 Furthermore, CERC (Sharing of ISTS and Losses) Regulations, 2020 states that Transformer Component for a State shall comprise of Yearly Transmission Charges for inter-connecting transformers (ICTs) planned for drawal of power by the concerned State. Hence, only socializing of losses may be unjust.
- A.32.6 CE, UPSLDC stated that as the asset is of POWERGRID, then state should not bear loss of it by connecting meter on HV side.
- A.32.7 MS, NRPC quoted that as per CERC and CEA regulation, metering is to be done from HV side. CTU will not bear the ICT loss. UP STU may approach to UPERC or CERC for the resolution.
- A.32.8 CE (RA division), CEA commented that meter should not be at interface side, it should be on LV side. But as per practice and provisions of regulations the metering is to be done from HV side. He suggested to take the matter to CEA for any

2024

~~Annexure~~ 4

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन-1 प्रभाग

Power System Planning & Appraisal-I Division

सेवा में / To,

Chief Engineer (PD&C),
Haryana Vidyut Prasaran Nigam Limited
Shakti Bhawan, Sector-6
Panchkula (Haryana) - 134109

विषय /Subject: HVPNL's proposal for replacement of various existing conductors (i.e. wolf/ panther/ zebra/ moose) with equivalent HTLS conductor to reduce the overloading of existing transmission lines

संदर्भ/Reference: HVPNL letter no. Ch-78/HSS-391/Vol-III dated 11.12.2023

महोदय/ Sir,

In view of the exponential growth in the power demand in Haryana, HVPNL vide letters dated 25.08.2023 and 13.09.2023 had proposed reconductoring of 32 nos. of existing transmission lines with equivalent HTLS conductors in the areas where erection of new transmission lines is not possible due to non-availability of RoW. Subsequently, CEA vide letter dated 15.11.2023 concurred the HVPNL's proposal for reconductoring of 28 nos. of transmission lines and recommended HVPNL to review the following reconductoring proposals of remaining 4 nos. of transmission lines:

S.No.	HVPNL's proposal
1.	Reconductoring of Badshahpur – Sohna 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-14.594 km)
2.	Reconductoring of Kaithal-Khanpur 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-16.52 km)
3.	Reconductoring of Samaypur-Palli 220 kV D/c line with HTLS conductor having current carrying capacity of 1200 Amp (Route length – 9 km).
4.	Creation of LILO of one circuit of 220 kV Nuna Majra - Daultabad D/c line with HTLS conductor having ampacity of twin moose ACSR conductor (1262 amp) at 400 kV substation Bahadurgarh (PGCIL) (approx. 2.0 kms) along with augmentation of existing conductor of same circuit which is being LILOed for the section from 220 kV substation Nuna Majra to the LILO point with HTLS conductor (Route length-3.01 km)

HVPNL vide letter under reference dated 11.12.2023 has submitted the justification for requirement of reconductoring of above transmission lines. Further, comments were also sought from CTUIL and Grid-India on the above proposal.

Based on the justification furnished by HVPNL and comments of CTUIL and Grid-India, our observations are as follows:

- (i) HVPNL's proposal for reconductoring of transmission lines at S. No. 1, 2 and 3 in the above table seems to be generally in order.
- (ii) Regarding the proposal for reconductoring of transmission line at S.No. 4, it is to mention that as present, 2 ckt already exist between Bahadurgarh and Nuna Majra and 3rd ckt would be created with LILO of one circuit of 220 kV Nuna Majra - Daultabad D/c line whose recondcutoring has been proposed by HVPNL. As per the present loading and power flow studies, there does not seem to be need for reconductoring only one ckt of Bahadurgarh - Nuna Majra 220 kV line. Reconductoring of the same may be carried out at a later stage based on the increase in loading in real time.
- (iii) Along with reconductoring of the proposed lines, HVPNL may also ensure matching of bay upgradation works associated with lines whose reconductoring has been proposed.
- (iv) It has been observed that various intra-state lines and ICTs of HVPNL are not N-1 compliant. Accordingly, HVPNL may plan necessary transmission system strengthening works for the same.

भवदीय / Yours faithfully,

Signed by Nitin Deswal

Date: 20-02-2024 10:56:57

Reason: Approved
नितिन देसवाल / Nitin Deswal

(उप निदेशक / Deputy Director)

Copy to:

1. COO (CTUIL), Saudamini, Plot no. 2, Sector -29, Gurgaon-122 001
2. Director (System Operation), Grid Controller of India Limited (Grid-India), B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi - 110010



HVPN

**HARYANA VIDYUT PRASARAN
NIGAM**

DETAILED PROJECT REPORT

Replacement of existing 0.15/0.2/AL-59/0.4/0.5sq" ACSR conductors with equivalent HTLS conductor of higher current carrying capacity in State of Haryana



DETAILED PROJECT REPORT

Replacement of various size of low current carrying capacity conductor with equivalent HTLS conductor of higher current capacity in state of Haryana

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DETAILED PROJECT REPORT

Replacement of various size of low current carrying capacity conductor with equivalent HTLS conductor of higher current capacity in state of Haryana

1. BACKGROUND

- a. Due to exponential growth in power demand, the existing transmission lines are unable to cater power demand in the various region of Haryana. The erection of new lines in these regions is not feasible due to non-availability of RoW (Right of Way). Therefore, replacement of existing ACSR conductors with equivalent HTLS conductor of higher current carrying capacity is the only available option to reduce the overloading of existing lines and also to improve the reliability with capability to cater the increased load demand in Haryana.
- b. Various inter-utility meetings were conducted between the officers of HVPNL & DISCOMs for integrated planning to review the district-wise distribution and transmission infrastructure for the strengthening of power system in Haryana.
- c. During the meetings, proposals for creation of new substation/augmentation of existing substation and also erection of new transmission lines/ augmentation of existing transmission line were discussed. It was decided in-principle that HVPNL may replace the ACSR conductors of existing transmission lines with equivalent higher current capacity HTLS conductors wherein erection of new transmission lines is not feasible due to non-availability of RoW (Right of Way).
- d. Accordingly, various existing overloaded lines wherein erection of new tower/lines is not feasible due to RoW issue were identified by the field offices of HVPNL & DISCOMs while considering the various proposals for strengthening of power infrastructure of the area. The detailed proposal were prepared area-wise and same was got approved from the WTDs of concerned DISCOMs & HVPNL.
- e. It has been observed that the designing of HTLS conductor depends a lot on the conductors ageing effect on sag and tension, existing creep mitigation methods of the conductor and the profile of existing Transmission lines. Therefore, all the works were packaged as per existing size (type) of the conductor i.e. wolf, Panther, Zebra & Moose etc.
- f. In view of the above, the following 3 no. packages have been prepared with overall estimated cost of Rs. 290 crore (approx.):
 - I. Package-A (Tentative estimate cost: Rs. 45.04 Crore) Augmentation works of 07 no. Transmission lines with existing Wolf conductor to HTLS conductor.
 - II. Package-B (Tentative Estimate cost: Rs. 102.44 Crore). Augmentation works of 17 no. Transmission lines with existing Panther and AL-59 conductor to HTLS conductor.
 - III. Package-C (Tentative estimate cost: Rs 114.73 crore). Augmentation works of 07 no.



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Transmission lines with existing Zebra and Moose conductor to HTLS conductor.

- g. The proposal of HVPNL for power system strengthening & improvement in Haryana by replacement of existing ACSR conductors with equivalent HTLS conductor of higher current carrying capacity was placed before the NRPC forum in its 68th meeting held on 18.08.2023 with request to recommend the proposal for 100% PSDF grant.
- h. The proposal of HVPNL was deliberated at the NRPC forum and the decision of the forum is reproduced as under:-
- "Forum accorded in-principal approval to proposal of HVPN for replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor. HVPN was requested to approach CEA for technical evaluation and accordingly, DPR for PSDF may be put up for approval of NRPC in upcoming meetings."*
- i. Accordingly, detailed proposal for Replacement of existing 0.15/0.2/AL-59/0.4/0.5sq" ACSR conductors with equivalent HTLS conductor of higher current carrying capacity in State of Haryana was submitted to Central Electricity Authority (CEA) for their consideration & recommendations.
- j. Director/CEA vide their letter dated 15.11.2023 has conveyed that based on the peak loading data, future load projections and the load flow studies submitted by HVPNL, proposal for re-conductoring of 28 no. existing Transmission lines as per **Annexure-V** have been found to be generally in order. Further, regarding remaining 4 no. lines for re-conductoring with HTLS conductor CEA requested with HVPNL to review and submit proper justification for requirement of re-conductoring.
- k. NRPC in its meeting held on 18.11.2023 approved a DPR for proposal of 28 no. lines to be implemented by PSDF fund estimated cost of Rs. 225.99 Crores (Annexure-VI).
- l. CEA vide letter dated 20.02.2024 considered the justification submitted by HVPNL regarding proposal for re-conductoring with HTLS of another 4 no. lines and given concurrence for the 3 no. lines (Annexure-VII).
- m. The estimated cost of the re-conductoring work of existing 3 no. Transmission lines recommended by CEA as per **letter dates 20.02.2024** comes to the tune of Rs. 40,78,96,771. The detail estimate of same is placed at Annexure-I to III.

2. JUSTIFICATION

The replacement of ACSR (Aluminum Conductor Steel Reinforced) conductor with HTLS (High-Temperature Low-Sag) conductor can be justified for catering to the growing power



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demand in Haryana due to following reasons:-

- a. **Increased Capacity:** HTLS conductors have a higher ampacity compared to ACSR conductors. They can carry more current without overheating, allowing for increased power transmission capacity. This is especially important in areas experiencing growing power demand, as it enables the transmission of larger amounts of electricity without the need for additional transmission lines.
- b. **Reduced Line Losses:** HTLS conductors have lower electrical resistance compared to ACSR conductors. This reduces the I^2R losses, resulting in improved efficiency in power transmission. By minimizing line losses, HTLS conductors help optimize the power infrastructure and reduce energy wastage, leading to better utilization of available resources.
- c. **Enhanced Reliability:** HTLS conductors offer improved mechanical strength and reduced sag compared to ACSR conductors. This enables them to withstand adverse weather conditions such as high winds, ice, and heavy snowfall. By maintaining proper clearance between conductors and minimizing the risk of line faults, HTLS conductors contribute to a more reliable power supply, reducing downtime and enhancing the overall grid reliability.
- d. **Environmental Benefits:** HTLS conductors enable power utilities to optimize the existing transmission infrastructure, reducing the need for new transmission lines. This results in lower land requirements and minimized environmental impact associated with the construction of new power corridors.

3. PROJECT OBJECTIVES

- a. The Replacement of Various Sizes of ACSR/AL-59 Conductor with Equivalent High-Temperature Low Sag (HTLS) Conductor project in Haryana State is a critical infrastructure initiative aimed at enhancing the efficiency and reliability of the state's power transmission network. This project is driven by the need to modernize the existing electrical grid, reduce transmission losses, improve the capacity to handle increasing power demand, and promote sustainability through the deployment of advanced technologies.
- b. The scope of this project encompasses the replacement of traditional Aluminum Conductor Steel Reinforced (ACSR) and Aluminum Conductor Alloy Reinforced (AL-59) conductors with HTLS conductors across various transmission lines within Haryana State



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due to exponential growth in power demand in the various regions of Haryana.

- c. The erection of new lines in these regions is not feasible due to non-availability of RoW (Right of Way). Therefore, replacement of existing ACSR conductors with equivalent HTLS conductor of higher current carrying capacity is to reduce the overloading of existing lines and also to improve the reliability with capability to cater the increased load demand in Haryana.
- d. The growing power demand in Haryana suggests that the demand will continue to increase in the future. By replacing ACSR conductors with HTLS conductors, the power infrastructure can be upgraded to handle the anticipated load growth. This proactive approach ensures that the transmission lines can accommodate future demands without requiring frequent replacements or significant modifications.
- e. The Replacement of Various Sizes of ACSR/AL-59 Conductor with Equivalent HTLS Conductor project in Haryana State is a strategic initiative aimed at improving the state's power transmission infrastructure. By achieving the project objectives of increased efficiency, capacity enhancement, and reduced maintenance, Haryana State is poised to meet the growing energy demands of its citizens, support the integration of renewable energy sources, and contribute to environmental sustainability. This project stands as a testament to the state's commitment to delivering reliable and efficient power supply while embracing advanced technologies in the energy sector.

3.1 PROJECT HIGHLIGHTS

Sr. No.	Description of Projects	Tentative estimated cost (in INR)	Completion schedule
1.	Replacement of existing conductor 0.15 SQ"ACSR Conductor of 66 KV D/C line from 220 kV s/stn Badshahpur -66 kV S/stn Sohna with HTLS Conductor.	12,69,55,496	12 Months
2.	Augmentation of 132 kV Kaithal-Khanpur Line having 0.2 Sq" ACSR conductor with HTLS conductor equivalent to 0.2 sq" ACSR conductor	12,08,57,583	12 Months
3.	Augmentation of 220 kV Samaypur-Palli line with 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp)	16,00,83,692	15 Months
Total		40,78,96,771	



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Note: NRPC in its meeting held on 18.11.2023 approved a DPR for proposal of 28 no. lines to be implemented by PSDF fund.

3.2 SCOPE OF WORK

Since, the designing of HTLS conductor depends a lot on the conductors ageing effect on sag and tension, existing creep mitigation methods of the conductor and the profile of existing Transmission lines., Therefore, scope of works under the project to be implemented by HVPNL have been categorized in 3 number packages as per existing size (type) of the conductor i.e. wolf, Panther, AL-59, Zebra & Moose. CEA has given recommendation for 28 no. vide letter dated 15.11.2023.

Now CEA vide letter dated 20.02.2024 has given the recommendation for reconductoring of remaining 3 no. works of different size of conductor and same is as under:-

- I. Replacement of existing conductor 0.15 SQ"ACSR Conductor of 66 KV D/C line from 220 KV s/stn Badshahpur -66 KV S/stn Sohna with HTLS Conductor. **(Tentative estimated cost 12.69 cr. as Annexure "II")**
- II. Augmentation of 132 KV Kaithal-Khanpur Line having 0.2 Sq" ACSR conductor with HTLS conductor equivalent to 0.2 sq" ACSR conductor. **(Tentative estimated cost 12.08 cr. as Annexure "III")**
- III. Augmentation of 220 KV Samaypur-Palli line with 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp). **(Tentative estimated cost 16.00 cr. as Annexure "IV")**.

4. TARGET BENEFICIARIES

The Replacement project works of existing Wolf, Panther, AL-59, Zebra & Moose conductor with equivalent HTLS conductor of higher current capacity is to be implemented to meet the growing power demand in view of the expansion of power system network and other infrastructure. HTLS conductors enable power utilities to optimize the existing transmission infrastructure, reducing the need for new transmission lines. This result in lower land requirements and minimized environmental impact associated with the construction of new power corridors.

Thus beneficiaries of the project would be all the citizen of Haryana state by supporting the



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industrialization without impacting agriculture sector by reducing land requirement for new power corridors.

5. PROJECT STRATEGY

HTLS conductors have a higher current carrying capacity compared to ACSR conductors. They can carry more current without overheating, allowing for increased power transmission capacity. This is especially important in areas experiencing growing power demand, as it enables the transmission of larger amounts of electricity without the need for additional transmission lines. Replacement project work would be executed on transmission lines of Haryana State Transmission Utilities, wherein, existing conductor shall have to be replaced with equivalent weight of HTLS conductor, which require shutdown of the transmission line and sometimes addition of the tower in existing transmission lines may also be required for interconnecting the existing transmission Lines/ substations for improving reliability.

It is necessary to strengthen the existing transmission line network between substations in the State so as to handle the challenges posed by growing power demand in the absence of Right of Way (ROW).

6. LEGAL FRAME WORK

It is proposed to execute the Replacement project works of existing Wolf, Panther, AL-59, Zebra & Moose conductor with equivalent HTLS conductor of higher current capacity as per provisions contained in the Indian Electricity Act, 2003 and the rules made there-under and the Electricity (Supply) Act 1948, and subsequent amendments made thereof, so far as these are applicable.

7. ENVIRONMENTAL AND SOCIAL ASPECTS

7.1 Forest involvement/ Clearance

The project for Implementation of Replacement project works of existing low current carrying conductor with equivalent HTLS conductor of higher current capacity is to be carried out on the existing transmission lines of HVPNL, therefore, separate clearance for involvement of forest for any work related to the proposed work is not foreseen.



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7.2 Social Issues/ R&R measures

Not foreseen, as the proposed scheme shall be established on the existing transmission lines and the requirements of Social Issues/ R&R measures shall be taken care in specific transmission line work if required.

8. TECHNICAL FEATURES

- a. The physical and operating performance requirements of the transmission line with HTLS conductor is complying with the specified requirements. Particulars of the proposed conductor along with calculations to establish compliance with the specified requirements is provided in the detailed specification.
- b. The bidder shall indicate the technical particulars and details of the construction of the HTLS conductor in the relevant schedule of GTP during bidding. The bidder shall also guarantee the DC resistance of conductor at 20 deg C and AC resistance at the calculated temperatures corresponding to 50Hz specified alternating current flow per sub conductor at specified ambient conditions. The HTLS conductor (except GAP Conductor) shall meet the following minimum requirements:-

Overall diameter of complete HTLS conductor	Not exceeding existing ACSR conductor overall diameter
Approx. mass of complete HTLS conductor (kg/km)	Less than or equal to weight of existing ACSR conductor(kg/km)
UTS/Weight ratio of HTLS Conductor	Better than UTS/Weight ratio of existing ACSR Conductors.
Direction of lay of outer layer	Right Hand
DCResistance@20°C and AC Resistance@75°C	Should be at least 15% less than that of Existing ACSR Conductor

- c. The bidder shall submit the supporting calculations for the AC resistance indicating details & justifications of values of temperature coefficient of resistance & DC to AC resistance conversion factor(s) with due reference to construction/ geometry of the conductor.
- d. The offered conductor/ equipment of relevant technology should be type tested for each size, rating & assembly line. Test reports should not be more than seven years old reckoned from the date of bid opening in respect of all the tests carried out in



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accredited laboratories (based on ISO/IEC vide 25/17025 or EN 45001 by the National accreditation body of the country where laboratory is located) or witnessed by HVPNL or another electric power utility and shall be submitted by the Bidders.

- e. The main materials required for the work of replacement are Hardware fittings, conductor and earth wire. The accessories required are Split pin, suspension assembly, suspension clamp, Preformed Armour Rods Set, armour grip suspension clamp, dead end assembly, bolts, nuts and washers, Mid Span Compression Joint, Repair Sleeve, Vibration dampers, Armour grip bundle spacers, spacer dampers.

All the materials to be used shall conform to the Indian/International Standards which shall mean latest revisions, with amendments/ changes adopted and published, unless specifically stated otherwise in the Specification.

The bidder shall also supply mandatory spares (approximately 5% of main items) as specified in the BOQ of the project. The cost of mandatory spares would be included in the bid evaluation.

9. MODE OF FINANCE AND PROJECT BUDGET

- 9.1 Project Cost Estimate:** - Scope of works under the project to be implemented by HVPNL have been categorized in 3 number packages as per existing size (type) of the conductor i.e. wolf, Panther, AL-59, Zebra & Moose. NRPC in its meeting held on 18.11.2023 has approved DPR for proposal of 28 no lines to be implemented by PSDF fund. The remaining 3 no. works which is recommended by CEA vide letter dated 20.02.2024 is as under:-

Sr. No.	Description of Projects	Tentative estimated cost (in INR)	Completion schedule
1.	Replacement of existing conductor 0.15 SQ"ACSR Conductor of 66 KV D/C line from 220 kV s/stn Badshahpur -66 kV S/stn Sohna with HTLS Conductor (In package-A).	12,69,55,496	12 Months
2.	Augmentation of 132 kV Kaithal-Khanpur Line having 0.2 Sq" ACSR conductor	12,08,57,583	12 Months



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	with HTLS conductor equivalent to 0.2 sq" ACSR conductor (In package-B).		
3.	Augmentation of 220 kV Samaypur-Palli line with 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp) (In package-C).	16,00,83,692	15 Months
Total		40,78,96,771	

9.2 Basis of Cost Estimate: - The basis taken into consideration for the preparation of the estimate is as under:-

- i. Rates of Civil Works are prepared by Civil design wing of HVPNL on the basis of HSR.
- ii. The annual price list is being prepared and circulated by HVPNL for the major equipments; therefore rates for the items which are available in the latest rate list of HVPNL have been taken.
- iii. The rates which are not available in rate list are taken from latest Purchase Orders of the HVPNL.
- iv. The rates of HTLS conductor has been taken as per the lowest rates received from the budgetary offers of its original manufacturers.
- v. Transportation of material from site store to site work, insurance, storage charges/ watch and ward, survey & stacking etc @ 5% of supply rate list items
- vi. LabourCess @ 1% of Supply & Erection
- vii. Administrative Charges @ 1% LabourCess
- viii. Contractor premium @ 10% of Supply (only HVPNL rate list items)
- ix. Contingencies & Incidental charges @ 5% total estimated cost of estimate.
The above cost estimate is inclusive of GST as funding for supply of equipment is assumed to be done through domestic sources. F&I have also been considered in the said estimate.

9.3 PHYSICAL MILESTONES OF THE PROJECT WORK:-

PERT CHART for 12 months (Package-A & B) and 15 months (Package-C) to execute the project (including supply and erection) has been prepared as Annexure "VIII". However, the time line of the salient milestones is as under:-

12 months PERT Chart		
Sr. No.	Description of activity	Timeline



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i.	Detailed Survey including route alignment & profiling	1 st to 3 rd month
ii.	Supply of Stubs, Earthing, Towers & Gantaries	2 nd to 7 th month
iii.	Casting of tower foundation	5 th to 9 th month
iv.	Supply of HTLS conductor	5 th to 9 th month
v.	Dismantlement & erection of towers	5 th to 9 th month
vi.	Stringing & replacement of conductor	7 th to 11 th month
vii.	Inspection by CEI	12 th month
15 months PERT Chart		
Sr. No.	Description of activity	Timeline
i.	Detailed Survey including route alignment & profiling	2 nd to 10 th month
ii.	Supply of Stubs, Earthing, Towers & Gantaries	2 nd to 12 th month
iii.	Casting of tower foundation	3 rd to 13 th month
iv.	Supply of HTLS conductor	4 th to 13 th month
v.	Dismantlement & erection of towers	5 th to 12 th month
vi.	Stringing & replacement of conductor	5 th to 14 th month
vii.	Inspection by CEI	15 th month

9.4 FINANCIAL MILESTONES OF THE PROJECT WORK:-

Package "A" has already been awarded on 09.03.2024. NIT for Package "B" have already been floated on 21.09.2023 respectively and NIT for Package "C" is also likely to be floated by 31.05.2024. Package-A has already been awarded. Package-B likely to be awarded by June 2024 and Package-C will be awarded by October 2024 with completion schedule of 12 months (Package-A & B) and 15 months (Package-C).

Tentative projection for the expenditure to be incurred on the project is as under:-

For package-A

Sr. No.	Description	Projection of the expenditure (in % of project cost)	Timeline considering April 2024 as 1 st month
1	10 % Advance to the EPC contractor	10%	1 st month
2	Supply of Stubs, Earthing, Towers & Gantaries	1%	2 nd to 7 th month
3	Casting of tower foundation	2%	5 th to 9 th month
4	Supply of HTLS conductor	60%	5 th to 9 th month
5	Dismantlement & erection of towers	5%	5 th to 9 th month
6	Stringing & replacement of conductor	20%	7 th to 11 th month
7	Inspection by CEI	2%	12 th month

For Package-B

Sr. No.	Description	Projection of the	Timeline considering July
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		expenditure (in % of project cost)	2024 as 1 st month
1	10 % Advance to the EPC contractor	10%	1 st month
2	Supply of Stubs, Earthing, Towers & Gantries	1%	2 nd to 7 th month
3	Casting of tower foundation	2%	5 th to 9 th month
4	Supply of HTLS conductor	60%	5 th to 9 th month
5	Dismantlement & erection of towers	5%	5 th to 9 th month
6	Stringing & replacement of conductor	20%	7 th to 11 th month
7	Inspection by CEI	2%	12 th month

For package-C

Sr. No.	Description	Projection of the expenditure (in % of project cost)	Timeline considering November 2024 as 1 st month
1	10 % Advance to the EPC contractor	10%	1 st month
2	Supply of Stubs, Earthing, Towers & Gantries	1%	2 nd to 12 th month
3	Casting of tower foundation	2%	3 rd to 13 th month
4	Supply of HTLS conductor	60%	4 th to 13 th month
5	Dismantlement & erection of towers	5%	5 th to 12 th month
6	Stringing & replacement of conductor	20%	5 th to 14 th month
7	Inspection by CEI	2%	15 th month

10. SUSTAINABILITY

The sustainability of High-Temperature Low-Sag (HTLS) conductors can be evaluated from various perspectives, including environmental, economic, and social aspects. Here are some considerations regarding the sustainability of HTLS conductors:

10.1 Environmental Sustainability:

- i. **Reduced Line Losses:** HTLS conductors are designed to operate at higher temperatures and carry more current, which can reduce line losses during electricity transmission. This increased efficiency can lead to lower energy consumption and reduced greenhouse gas emissions, contributing to environmental sustainability.
- ii. **Extended Service Life:** HTLS conductors are built for durability and often have a longer service life compared to traditional conductors. This can reduce the need for frequent replacements and the associated environmental impact of manufacturing and disposing of conductor materials.



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- iii. **Compatibility with Renewable Energy:** HTLS conductors can support the integration of renewable energy sources like wind and solar by enhancing the grid's capacity and reliability, which is critical for transitioning to cleaner energy generation.
- iv. **Reduced Land Requirements:** The low sag of HTLS conductors can lead to reduced right-of-way requirements, minimizing the environmental impact of clearing land for transmission line corridor.

10.2 Economic Sustainability:

- i. **Efficiency Improvements:** HTLS conductors' ability to reduce line losses and increase power transmission capacity can lead to cost savings for utilities and consumers. This economic sustainability can help justify the investment in upgrading transmission infrastructure.
- ii. **Reduced Maintenance Costs:** The longer service life and durability of HTLS conductors can result in lower maintenance and replacement costs over time, contributing to the economic sustainability of power transmission systems.
- iii. **Compatibility with Existing Infrastructure:** HTLS conductors are designed to be compatible with existing transmission infrastructure, which can reduce the overall cost of upgrades and modernization.

10.3 Social Sustainability:

- i. **Reliability:** HTLS conductors' ability to maintain proper tension and low sag, even in extreme conditions, can enhance the reliability of the electrical grid. This reliability is essential for meeting the energy needs of communities and businesses.
- ii. **Reduced Outages:** By reducing the risk of overheating and power outages, HTLS conductors can contribute to social sustainability by ensuring a stable supply of electricity for critical infrastructure, emergency services, and everyday life.
- iii. **Safety:** HTLS conductors are designed with safety in mind, reducing the risk of accidents such as conductor clashing with vegetation or other objects. This helps protect both the environment and people living near transmission lines.

11. SPARE PARTS MANAGEMENT SYSTEM

- a. The primary objective of spare part management system is to ensure timely availability of proper spare parts for efficient maintenance of the transmission line without excessive



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build-upon non-moving and slow moving inventory.

- b. The main materials required for the work of replacement are Hardware fittings, conductor and earth wire. The accessories required are Split pin, suspension assembly, suspension clamp, Preformed Armour Rods Set, armour grip suspension clamp, dead end assembly, bolts, nuts and washers, Mid Span Compression Joint, Repair Sleeve, Vibration dampers, Armour grip bundle spacers, spacer dampers.
- c. The main materials required for the work of replacement are Hardware fittings, conductor and earth wire. The accessories required are Split pin, suspension assembly, suspension clamp, Preformed Armour Rods Set, armour grip suspension clamp, dead end assembly, bolts, nuts and washers, Mid Span Compression Joint, Repair Sleeve, Vibration dampers, Armour grip bundle spacers, spacer dampers.
- d. To ensure the supply of the quality materials in the project there would be provisions in the contract that the offered materials of relevant technology should be type tested for each size, rating & assembly line. Also all the materials to be used in the project shall conform to the Indian/International Standards which shall mean latest revisions, with amendments/changes adopted and published, unless specifically stated otherwise in the Specification.
- e. To ensure availability of proper spare parts for efficient maintenance of the transmission line there would be provision in the contract that the bidder shall also supply mandatory spares (approximately 5% of main items) as specified in the BOQ of the project. The cost of mandatory spares would be included in the bid evaluation

12. TRAINING OF PERSONNEL

The expertise available within the organization is required to be augmented to cater maintenance of transmission line to be installed under the proposed project. Accordingly, the training shall be imparted to the team of 3 Engineers (per line) nominated by the Nigam have to be arranged at suppliers place and site which is considered essential under the project.



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ANNEXURE-I

List of 3 No. transmission lines for reconductoring of HTLS recommended by CEA

- i. Replacement of existing conductor 0.15 SQ"ACSR Conductor of 66 KV D/C line from 220 kV s/stn Badshahpur -66 kV S/stn Sohna with HTLS Conductor (Part of package-A).
- ii. Augmentation of 132 kV Kaithal-Khanpur Line having 0.2 Sq" ACSR conductor with HTLS conductor equivalent to 0.2 sq" ACSR conductor (Part of package-B).
- iii. Augmentation of 220 KV Samaypur-Palli line with 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp) (Part of package-C).

Line wise Estimated Cost for Package-A			Annexure-II
Sr. No.	Name of Line	Ckt. Km	Amount (in Rs.)
1	Augmentation of 66kV D/C Palwal-Mandkola with HTLS Conductor equivalent to ACSR Wolf having current capacity equivalent to 600 Amp on the existing towers (Tentative D/C Route Length-11.185 KM)	22.372	94889505
2	Replacement of existing conductor 0.15 SQ*ACSR Conductor of 66 KV D/C LINE FROM 220 KV S/STN BADSHAHPUR -66 KV S/STN SOHNA with HTLS Conductor. (Tentative D/C Route Length-14.594 KM)	29.188	126955498
3	Replacement of existing conductor 0.15 SQ*ACSR Conductor of 66 KV S/C LINE FROM 220 KV S/STN Palwal -66 KV S/STN Hathin with HTLS Conductor (Tentative S/C Route Length-14.2 KM)	14.2	61487680
4	Augmentation of 66kV S/C Badshahpur-Sector-35-Harsaru line-provision of HTLS conductor of size 0.15 sq. inch (having ampacity of 600Amp thereof) alongwith raising of height at some locations (Tentative S/C Route Length-9.96 KM)	10	63837730
5	Augmentation of existing conductor 0.15 SQ*ACSR Conductor on HSEB Towers of 132 KV S/C Khokrakot-Sector-3 Rohtak Line with HTLS Conductor. (Tentative S/C Route Length-5.75 KM)	5.75	26066799
6	Augmentation of conductor of 66 kV S/C Harsaru - Farukhnagar line from 0.15 Sq. inch ACSR conductor to 0.15 Sq. inch HTLS conductor having capacity of 600 amp in FY 2022-23 (Tentative S/C Route Length-12.162 KM)	12.162	54600488
7	Replacement of 0.15 AAAC Conductor with HTLS from LILO point to 66kV S/STn of one circuit of 66kV Madanpur-Barwala line with HTLS Conductor equivalent to 600 Amp on the existing towers (Tentative S/C Route Length-4.8 KM)	4.8	22602613
	Total	98.472	460440311

Prepared By

AE/WB

Preaudited By

AO/PTB-AUDIT

Checked By


Xen/Contract

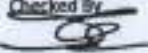
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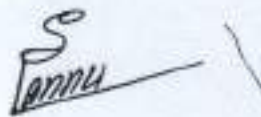
**Replacement of existing conductor 0.15 sq"ACSR Conductor of 66 KV D/C LINE FROM 220 KV S/STN BADSHAHPUR -66 KV S/STN
SOHNA with HTLS Conductor.
(Tentative length of D/C line = 14.634KM)**

S. N.	DESCRIPTION	UNIT	Qty.	Spares	Total Qty.	Unit price	Total	Rate taken from
1	HTLS Conductor having current carrying capacity of about 600 Amp size equivalent to ACSR Wolf conductor	Km	88.5	4	92.5	998280.00	92340900.00	Budgetary offer from M/s Apar, M/s Sterile & M/s Jak (CP-17)
2	A/F type Disc insulator or Silicon Rubber Polymer insulator strings	i) 70 kN	No. 270		270	1500.00	405000.00	Rate list dated 27.04.2023 (CP-20)
		ii) 90 kN	No. 252	3	252	1700.00	428400.00	
3	Hardware Fittings of HTLS Conductor having current carrying							
	(a) Single T Suspension String	set	264	10	274	9558.00	2618892.00	PO REC-207 (CP-18)
	(b) Single suspension pilot string	Set	0	1	1	22302.00	22302.00	
	(c) Single Tension string	Set	228	10	238	31850.00	7582680.00	PO REC-207 (CP-18)
(d) Double Tension string	Set	12	2	14	61596.00	862344.00		
4	HTLS conductor accessories						0.00	
	i) Mid Span Compression Joint	No.	58	3	62	27512.00	1711944.00	PO REC-207 (CP-18)
	ii) Repair sleeves	No.	18	1	19	3610.80	68605.20	
	iii) Vibration damper for conductor	No.	936	40	976	2568.80	2487628.80	
Total of Supply							108528496.00	
Erection @10% of Supply							10852849.60	
6	DISMANTLEMENT WORK to be included in Erection Part of BOQ							
	Dismantlement of existing of 0.15sq" ACSR conductor complete with HW fittings, insulators for above portion of line and their transportation proper stacking at Dedicated Store of H/PH.		Chm.		29.188	6704.46	195689.89	Rate @5 % of Supply rate after updating with CACMA July 2023 (CP-21)
Dismantlement							195689.89	
Total (Erection+Dismantlement charges)							11048559.49	
Total Rate list items							833400.00	
Total Supply + Erection+ Dismantlement							110577255.49	
Transportation of material from site store to site work, insurance, storage charges/ watch and ward, survey & stacking etc @ 5% of supply rate list items							41670.00	
Labour Cess @ 1% of Supply, erection & Dismantlement							1195772.55	
Administrative Charges @ 1% Labour Cess							11957.73	
Contractor premium @ 10% of Supply (rate list items)							83340.00	
Total (Total estimated cost)							120908996.77	
Contingencies & incidental charges @ 5% total estimated cost							6045449.79	
Gross Total Estimate							126954446.56	

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AE/WB


Pre-Audited By
AO, Pre-audit


Checked By

Xen/Contract



Sr. No.	Name of Line (Package-B)	Ckt Km	Amount (in Rs.)
1	Replacement of existing conductor 0.2 SQ" Inch ACSR Conductor of 132KV Chorman-Dabwali S/Ckt line with HTLS Conductor. (Tentative S/C Route Length-24 KM)	24	136463600
2	Replacement of existing conductor 0.2 SQ" Inch ACSR Conductor of 132 KV Shahpur Begu-Sirsa S/Ckt line with HTLS conductor (Tentative S/C Route Length-9.5 KM)	9.5	55445296
3	Replacement of existing conductor 0.2 SQ" ACSR Conductor of 132 KV Jwan Nagar - Rania S/Ckt line with HTLS conductor (Tentative S/C Route Length-14 KM)	14	78964593
4	Augmentation of 66kV D/C A4-Ford line having 0.2 sq. inch ACSR conductor with 0.2 sq. inch HTLS conductor having current capacity equivalent for 600 Amp on the existing towers. (Tentative D/C Route Length-1.45 KM)	1.45	4393504
5	Augmentation of 66kV D/C Palla-See-31, Faridabad line having 0.2 sq. inch ACSR conductor with 0.2 sq. inch HTLS conductor having current capacity equivalent for 600 Amp on the existing towers (Tentative D/C Route Length-3 KM)	6.1	48074368
6	Augmentation of existing 0.2 sq" AL-59 conductor on HSEB Design towers of 132 kV Rohtak (220 kV) - Khorkrakot Rohtak CK-1 (Tentative S/C Route Length-1.4 KM)	1.4	10160688
7	Augmentation of existing 0.2 sq" AL-59 conductor on HSEB Design towers of 132 kV Rohtak (220 kV) - Khorkrakot Rohtak CK-2 (Tentative S/C Route Length-1.12 KM)	1.12	8463851
8	Augmentation of 132 kV Kalhai-Khanpur Line having 0.2 Sq" ACSR conductor with HTLS conductor equivalent to 0.2 sq" ACSR conductor (Tentative S/C Route Length-16.32 KM)	16.5	130857583
9	Augmentation of existing 132 kV Nising-laimana S/C 0.2 sq" Inch ACSR line Conductor with equivalent HTLS Conductor having ampacity 600A from 220 kV Nising up to LLO Point. (Tentative S/C Route Length-6.5 KM)	6.5	39264324
10	To replace the existing 0.2 sq" ACSR conductor of 132 kV S/C Isharwal-Behal Line with 0.2 sq" HTLS conductor (Tentative S/C Route Length-19.5 KM)	19.51	109394286
11	Augmentation of existing 0.2 sq" ACSR conductor of 132 kV S/C Chhajpur-Chandoli line with HTLS conductor. (Tentative S/C Route Length-8 KM)	8	48331746
11	Replacement of 0.2 sq" ACSR conductor of 132 kV S/C Bastara- Madhuban/ (Tentative S/C Route Length-5.821 KM)	5.82	35162167
13	Replacement of 0.2 sq" ACSR conductor of 132 kV S/C Kamal- Madhuban line with high capacity conductor nearly equivalent to 0.4 sq inch ACSR conductor (Tentative S/C Route Length-12.065 KM)	12.06	69009004
14	Augmentation of 0.2 Sq" Al-59 conductor of 132 kV S/C Nunamajra -Mill Bahadurgarh line with 0.2 sq inch Al-59 equivalent HTLS conductor having ampacity 600A (Tentative S/C Route Length-11.15 KM)	11.15	89997703
15	Replacement of existing 0.2sq" Conductor of 132kV S/C line from 220kV Bagora-Tosham line from TL no. 69-92 with OPGW with HTLS conductor of equivalent size of 0.25sq" conductor with current capacity equivalent to 0.4sq" ACSR Conductor (600Amp). (Tentative S/C Route Length-5.6 KM)	5.6	31278324
16	Replacement of LLO section of Narwana-Jind line at Uchana will be converted from 0.2sq" Conductor to 0.2sq" HTLS conductor of having current capacity equivalent to 600Amp without replacement of towers (Tentative S/C Route Length-1.094 KM)	1.92	15807053
17	Replacement of existing conductor 0.250" Inch ACSR Conductor of 132 KV D/C Nuhiyawal Khairkan line with HTLS conductor (Tentative S/C Route Length-25 KM)	25	141983340
	Total	169.63	1024433328

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AO/Pre-audit

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Augmentation of 132 kV Kalthal-Khanpur Line having 6.2 Sq ^m ACSR conductor with HTLS conductor equivalent to 0.2 sq ^m ACSR conductor (Tentative B/C Route Length-18.52 KM)								
S. N.	DESCRIPTION	UNIT	Qty.	Spare	Total Qty.	Unit price (including GST)	Total	Rate taken from
1	Fabrication and supply of following tower parts with stubs, bolts & nuts etc. bolts, U Bolts ladders, De-hale etc. of following designs							As per latest rate list d. 27.04.2023 and updating the same (EEMA upto July 2023 (CP-23))
	132kV DIC DB type towers (KRR design)	No.	18	0	18	52442.18	943959.18	
2	Supply of earthing of towers (Gantry L) pole type	sets	18	0	18	566.92	101824.66	
	ii) Counterpoise type	sets	0	0	0		0	
3	Supply of following Tower Accessories	No.	18	0	18	403.66	7264.08	EPC-D-79 dt 09.08.2022 (CP-17)
	i) Dangle plate	No.	18	0	18	403.54	7254.06	
	ii) Numbor plate	sets	18	0	18	403.54	7254.06	
	iii) Phase plate (set of 3)	sets	18	0	18	403.54	7254.06	
	iv) Ground plate (set of 3)	sets	18	0	18	403.54	7254.06	
	v) Anti striking device	sets	18	0	18	12351.16	223041.24	
4	HTLS Conductor having current carrying capacity of about 600 Amp	Km	60.05	2.5	52.55	1401840.00	73669692	Budgetary offer from M/s Apec, M/s Sharda & M/s Jai (CP-17)
5	132 kv A/P type disc insulator or 132kV Silicon Rubber Polymer Insulator strings							
	i) 90 kN	No.	108	0	108	2300	248400	Rate List dated 27.04.2023 (CP-21)
6	Hardware Fittings of HTLS Conductor having current carrying capacity of about 600 Amp							
	(a) Single T Suspension String	set	123	7	130	9558	1242540	
	Single Suspension	set	12	1	13	3186	41418	
	(b) Single Tension string	Set	252	13	265	31860	8442600	PO REC-207 (CP-18)
	(c) Double Tension string	Set	30	2	32	61596	1971572	
7	HTLS conductor accessories							
	i) Mid Span Compression Joint for conductor	No.	34	2	36	27612	994032	PO REC-207 (CP-18)
	ii) Repair sleeves for conductor	No.	10	1	11	3611	39719	
	iii) Vibration damper for conductor	No.	810	41	851	2549	2169029	
8	Accessories for existing Earth wire size 7/2.50 mm							
	i) Earth wire Tension clamp	No.	36	0	36	508	18273	PO EPC-D-15 (CP-18)
	ii) Vibration Damper	No.	72	0	72	508	36546	
	iii) Flexible copper bond	No.	18	0	18	620	11160	
	Total of Supply						98673843	
	Erection @12% of Supply						9867386	
	DISMANTLEMENT WORK to be included in Erection Part of BOQ							
9	Dismantlement of existing of 0.15sq ^m ACSR conductor complete with HW fittings, insulators for above portion of line and their transportation proper stacking at Dedicated Store of HVPNL	Ckm.			16.5	8615.70	142159	Rate @5 % of Supply rate after updating with CAGMAI July, 2023 (CP-22)
	Dismantlement						142159	
	Civil Items							
10	Detailed Survey	Km	17	0	17	18967.32	322444	
11	Furnishing bore log data	No.	17	0	17	6322.44	107481	
12	Construction of tower foundations as per HVPNL Drgs & Specifications for 0 to 8Mtr. wets including excavation, concreting, supply and placement of steel reinforcement and backfilling complete in all respect.			0	0		0	
13	i) 132kV DIC DB type towers (KRR design) classified as			0	0		0	
14	ii) Wet	No.	18	0	18	187332.08	3371977	
19	Preventive Measure			0	0		0	
22	Brick masonry in 1:4 (cement sand) mortar (HSR Ref.No. 7.21.1)	Cum	1	0	1	4367.74	4356	As per Rates

23	Earth filling including compaction, leveling & dressing etc. (HSR Ref.No. RM079 + 3.1.2 + 4.32)	Cum	1	0	1	88.5	88	Obtained from Civil Design	
24	M-20 (1:1.5:3) concrete for top seal cover, for pavement etc.	Cum	1	0	1	5101.32	5101		
25	Lean concrete (1:3:5) complete in all respect excluding centering and shuttering. (HSR Ref.No. 8.1.4)	Cum	1	0	1	3434.08	3435		
26	Lean concrete (1:4:3) complete in all respect excluding centering and shuttering. (HSR Ref.No. 8.1.5)	Cum	1	0	1	2882	2882		
28	RCC (1:1.5:3) including all material, labour, excavation, cutting and placing of steel, centering & shuttering, concreting etc. complete in all respect.	Cum	1	0	1	11591.14	11591		
Total Civil Charges								36294.14	
Total (Erection+Dismantlement +Civil charges)								13836904	
Total Rate list items								9630515	9688359
Total Supply + Erection+ Dismantlement+Civil								112512827	
Transportation of material from site store to site work, insurance, storage charges/ watch and ward, survey & stacking etc @ 8% of supply rate list items								491526	484418
Labour Cess @ 1% of Supply, erection & Dismantlement								1125126	
Administrative Charges @ 1% Labour Cess								11251	
Contractor premium @ 10% of Supply (rate list items)								963055	968836
Total (Total estimated cost)								115123760	115102410
Contingencies & incidental charges @ 5% total estimated cost								5756188	5755723
Gross Total Estimate								120679973	120852533

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 AEWS

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 ADP/audit

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 Xan/Contract



Line wise Estimated Cost for Package-C		Annexure-IV	
Sr. No.	Name of Line	Ckt. Km	Amount (in Rs.)
1	Augmentation of Conductor of 220 kV D/C Daultabad-IMT Manesar line with allied equipment along with L.L.O of one circuit of said line at 220 kV Substation Sector-85, Gurugram from 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (Capacity 1200 A) in FY 2024-25. (Tentative D/C Route Length-17.86 KM)	35.12	318106979
2	Creation of one Ckt. of 220 kV D/C Daultabad-IMT Manesar Line at 220 kV Substation Sector-89, Gurugram (alternate to circuit which is LILO at Sector-85, Gurugram) with 0.4 sq" HTLS Conductor (capacity 1200A) by using 220 kV D/C/M/C/Menopoles towers as per requirement in FY 2024-25. (Tentative D/C Route Length-2.39 KM)	4.78	141717850
3	Augmentation of existing 3 no 220kv S/C link between 400kV substation sector-72 Gurgaon (PGCIL) & 220kV substation sector-72 Gurgaon (HVPNL) from single Moose ACSR to Single HTLS conductor having current carrying capacity equivalent to twin Moose conductor (Tentative D/C Route Length-0.12 KM)	0.24	5790410
4	Augmentation of 220 kV D/C Sector-48-Pall line with 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp) in FY 2023-24. (Tentative D/C Route Length-7.52KM)	15.84	142788141
5	Augmentation of 220 kV Baniyapur-Pall line with 0.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp) in FY 2023-24 (Tentative D/C Route Length-9.075 KM)	18	160083692
6	Replacement of existing 0.4sq" Conductor of 220kv D/C PGCIL (Jharapur)-Kathal line with HTLS conductor of equivalent size of Zebra conductor with current bearing capacity of 1200A along with the replacement of existing insulators. (Tentative D/C Route Length-15.901 KM)	31.802	280987455
7	Creation of LILO of one circuit of 220 kV Nuna Majra - daultabad D/C Line with HTLS conductor equivalent to Zebra conductor having ampacity of twin moose ACSR conductor (1282 amp) at 400 kV substation Bahadurgarh (PGCIL) approx. 2.0 kM (LILO point just outside 220 kV substation Nunamajra) along with augmentation of existing conductor of same circuit which is being LILOed for the section from 220 kV substation Nuna Majra to the LILO point (2L2830") (Tentative Route Length of line for LILO portion-2.906KM) (Tentative Route Length of line for Nuna Majra-Daboda D/C line -0.596KM) (Tentative Route Lengths of line for Nuna Majra-Daultabad D/C line -0.302KM)	6.0	95767526
Total		111.782	1147332153

Prepared by

At/Contacts

Prepared By

AD/Pre-audit

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Jony/Contacts

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Datta

Augmentation of 220 kV Sawaypur-Pull line with 1.4 sq" ACSR conductor to 0.4 sq" HTLS conductor (1200 Amp) (Tentative D/C Route Length-9.079KM)								
S. N.	DESCRIPTION	UNIT	Qty.	Spare	Total Qty.	Unit price (including GST)	Total	Rate taken from
1	HTLS Conductor of equivalent size of ACSR Panther conductor with ampacity (1200 Amp)	Km	55	1	56	2184120.00	121190720	Budgetary from M/s Aps, M/s Steris & M/s JSK (CP-10)
2	AF type Disc insulator or Silicon Rubber Polymer insulator strings							
	(i) 70 kN	No.	135	0	135	3620.00	337500	
	(ii) 90 kN	No.	218	0	218	3600.00	777600	Rate List dated 27.04.2023 (CP-15)
3	Hardware Fittings of HTLS Conductor of size equivalent to ACSR Panther conductor							
	(a) Single T Suspension String	Set	132	3	135	18499.56	2227490	
	(b) Single suspension pilot string	Set	3	1	4	16498.54	66000	EPC-D-283 (CP-14)
	(c) Single Tension string	Set	132	0	132	40191.33	756012	
	(d) Double Tension string	Set	12	2	14	60703.60	709853	REC-227 (CP-11)
	HTLS conductor accessories							
	(i) Mid Span Compression Joint	No.	36	2	38	15336.81	582791	
	(ii) Repair sleeves	No.	10	1	11	4330.78	46638	EPC-D-283 (CP-14)
	(iii) Vibration damper for conductor	No.	872	13	885	4335.74	2896087	
	(iv) Glow Plates for 220kV Towers	No.	2	0	2	362.26	725	EPC-D-45 (CP-13)
	Total of Supply							
	Erection @10% of Supply						136796318	
	DISMANTLEMENT WORK to be included in Erection Part of BQQ						13879632	
4	Dismantlement of existing of ACSR Zebra conductor complete with HW fittings, insulators for above portion of line and their transportation and proper stacking at any Dedicated Store of HV/MV.	Cms.		✓	18	16431.1	295760	Rate @ 5% of Supply rate after updating with CACMA Sep. 2023 (CP-17)
	Dismantlement							
	Total (Erection+Dismantlement charges)						295760	
	Total Rate list items						13975282	
	Total Supply + Erection+ Dismantlement						11155100	
	Transportation of material from site store to site work, insurance, storage charges/ watch and ward, survey & stacking etc @ 8% of supply rate list items						150770611	
	Labour Cost @ 1% of Supply, erection & Dismantlement						60755	
	Administrative Charges @ 1% Labour Cost						1507706	
	Contractor premium @ 10% of Supply (rate list items)						15077	
	Total (Total estimated cost)						1115510	
	Contingencies & incidental charges @ 5% total estimated cost						15248055	
	Gross Total Estimate						7623433	
							190083682	

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31631/2023

File No. CEA-PS-11-22(13)/1/2019-PSPA-4 Division/495

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सत्यमेव जयते

Government of India

विद्युत विभाग

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं आकलन-1 विभाग

Power System Planning & Appraisal-I Division

सेवा में / To,

Chief Engineer (PD&C),
Haryana Vidyut Prasaran Nigam Limited,
Shakti Bhawan,
Sector-6, Panchkula- 134109

विषय / Subject: HVPNL's proposal for replacement of various existing conductors (i.e. wolf/ panther/ zebra/ moose) with equivalent HTLS conductor to reduce the overloading of existing transmission lines

संदर्भ/ Reference:

- (i) HVPNL letter no. Ch-1/HSS-39/III dated 25.08.2023
- (ii) HVPNL letter no. Ch-32/HSS-39/Vol-III dated 13.09.2023
- (iii) HVPNL letter no. Ch-43/HSS-39/Vol-III dated 27.09.2023
- (iv) HVPNL email dated 29.09.2023
- (v) CEA email dated 13.10.2023
- (vi) HVPNL email dated 16.10.2023

महोदय/ Sir,

HVPNL has submitted that due to the exponential growth in electricity demand, the existing lines are unable to cater the power demand in various areas of Haryana. Therefore, HVPNL vide its letters under reference (i) and (ii) has proposed replacement of existing conductors with equivalent HTLS conductors in the areas where erection of new transmission lines is not possible due to non-availability of RoW.

HVPNL's proposal was deliberated in a meeting held on 15.09.2023 amongst CEA, CTUIL, Grid-India and HVPNL wherein CEA requested HVPNL to submit the proper justification for requirement of reconductoring of various lines along with requisite data such as peak loading observed till date, expected loading in future etc. along with load flow studies. The same has been submitted by HVPNL vide letter w/r (iii) and emails w/r (iv) and (vi).

Comments were sought from CTUIL and Grid-India on the above proposal. Based on the comments of CTUIL and Grid-India, our observations are as follows:

- (i) Based on the peak loading data, future load projections and the load flow studies submitted by HVPNL, proposals for reconductoring of following existing lines have been found to be generally in order.

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Sl. No.	HYPNL's proposal
1.	Reconductoring of Palwal - Mandkola 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-11.186 km)
2.	Reconductoring of Palwal - Hathin 66 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-14.2 km)
3.	Reconductoring of Badshahpur-Sector 35-Harsaru 66 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp along with raising of height at some locations. (Route length-9.96 km)
4.	Reconductoring of Khokrakot-Sector 3 Rohtak 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-7 km)
5.	Reconductoring of Harsaru - Farukhnagar 66 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-12.162 km)
6.	Reconductoring of portion* of HSIIDC- Barwala 66 kV S/c line (created after LILO of one circuit of Madanpur- Barwala 66 kV D/c line at HSIIDC) from Barwala S/s upto the LILO point with HTLS conductor having current carrying capacity of 600 Amp (Route length-4.8 km)
7.	Reconductoring of Daultabad-Sector10 Gurugram 68 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-10.5 km)
8.	Reconductoring of Chormar- Dabwali 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-24 km)
9.	Reconductoring of Shahpur-Begu - Sirsa 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-9.5 km)
10.	Reconductoring of Jwan Nagar - Rania 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-14 km)
11.	Reconductoring of A4-Ford 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-0.72 km)
12.	Reconductoring of Palla- Faridabad Sector 31 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-3 km)
13.	Reconductoring of Rohtak - Khokrakot Rohtak 132 kV D/c line ckt-1 with HTLS conductor having current carrying capacity of 600 Amp. (Route length-2.7 km)
14.	Reconductoring of Rohtak - Khokrakot Rohtak 132 kV D/c line ckt-2 with HTLS conductor having current carrying capacity of 600 Amp. (Route length-2.7 km)
15.	Reconductoring of portion* of Nissing-Jalman 132 kV S/c line (which is to be LILOed at Dacher) with HTLS conductor having current carrying capacity of 600 Amp from Nissing S/s up to LILO Point (Route length-6.5 km)
16.	Reconductoring of Isherwal - Behal 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-19.5 km)
17.	Reconductoring of Chhajpur-Chandoli 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length -8 km)
18.	Reconductoring of Bastara- Madhuban 132 kV S/c with HTLS conductor having current carrying capacity of 600 Amp (Route length-5.821 km)
19.	Reconductoring of Kamal- Madhuban 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp (Route length-12.065 km)
20.	Reconductoring of Nuramajri -MIE Bahadurgarh 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp (Route length-11.3 km)
21.	Reconductoring of portion* of Bapora-Tosham 132 kV S/c line from Tower Location (TL) No. 69-92 with HTLS conductor having current carrying capacity of 600 Amp. (Route length-5.6 km)
22.	Reconductoring of LILO portion* of LILO of Narwana-Jind 132 kV S/c line at Uhana with HTLS conductor having current carrying capacity of 600 Amp.

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Sl. No.	HVPNL's proposal
	(Route length-1.094 km)
23.	Reconductoring of Nuhiyawall- Khairkan 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp (Route length-25 km)
24.	Reconductoring of Daultabad-IMT Manesar 220 kV D/c line along with LILO of one circuit at 220 kV Substation Sector-85, Gurugram with HTLS conductor having current carrying capacity of 1200 Amp. (Route length-17.56 km)
25.	Reconductoring of LILO portion* of LILO of 2 nd circuit of Daultabad-IMT Manesar 220 kV D/c line at 220 kV Substation Sector-99, Gurugram with HTLS conductor having current carrying capacity of 1200 Amp. (Route length-2.39 km)
26.	Reconductoring of Sector 72 Gurgaon (PGCIL) – Sector 72 Gurgaon (HVPNL) 220 kV 3xS/c line with HTLS conductor having current carrying capacity equivalent to Twin Moose conductor (Route length – 0.12 km)
27.	Reconductoring of Sector 46-Pali 220 kV D/c line with HTLS conductor having current carrying capacity of 1200 Amp. (Route length-8.01 km)
28.	Reconductoring of PGCIL (Khanpur)-Kaithal 220 kV D/c line with HTLS conductor having current carrying capacity of 1200 Amp along with the replacement of existing insulators (Route length – 15.9 km)

*Rest of the line already implemented/ under implementation with high capacity conductor

- (ii) Regarding the remaining proposals submitted by HVPNL, as per the load flow studies, it has been observed that reconductoring of the lines with HTLS conductor may not be required. Therefore, HVPNL is requested to review the proposals or submit proper justification for requirement of the reconductoring of the lines. Details of the proposals along with observations of CEA are enclosed as Annexure A.
- (iii) Along with reconductoring of the proposed lines, HVPNL may also ensure matching of bay upgradation works associated with lines whose reconductoring has been proposed.
- (iv) It has been observed that various Intra State lines and ICTs of HVPNL are 'N-1' non-compliant. HVPNL may plan necessary transmission system strengthening works for the same.

Yours faithfully,

for *21/11/2023*
 (Signature/Manjari Chaturvedi)
 (Post/Director)

Copy to:

- COO (CTUJL), Saudamini, Plot no. 2, Sector -29, Gurgaon-122 001
- Director (System Operation), Grid Controller of India Limited (Grid-India), B-9, Qutab Institutional Area, Karwaria Sarai, New Delhi – 110010.



सत्यमेव जयते

उत्तर क्षेत्रीय विद्युत समिति
NORTHERN REGIONAL POWER COMMITTEE



Minutes of
The 48th meeting of Technical Coordination
Committee &
The 70th meeting of
Northern Regional Power Committee

Date: 17th & 18th November 2023

Time: 10:30 AM

Venue: Le Méridien Amritsar

Ajnala Rd, Bal Schander, Raja Sansi, Bal,
Amritsar, Punjab



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

सं. उ.क्षे.वि.स./वाणिज्यिक/ 209/आर पी सी (70)/ 2023

दिनांक: 08 दिसम्बर, 2023

सेवा में/To,

एनआरपीसी एवं टीसीसी के सभी सदस्य एवं विशेष आमंत्रित (संलग्न सूचीनुसार)

Members of NRPC & TCC & Special Invitees (As per List)

विषय: उत्तर क्षेत्रीय विद्युत समिति की 70 वीं और तकनीकी समन्वय समिति (टीसीसी) की

48 वीं बैठक का कार्यपत्र।

Subject: 70th Northern Regional Power Committee (NRPC) & 48th Technical Co-ordination Committee (TCC)-MoM

महोदय/महोदया,

तकनीकी समन्वयन समिति (टीसीसी) की 48 वीं बैठक दिनांक 17.11.2023 (सुबह 10:30 बजे) एवं उत्तर क्षेत्रीय विद्युत समिति की 70 वीं बैठक दिनांक 18.11.2023 (सुबह 10:30 बजे) को अमृतसर, पंजाब में आयोजित की गयी थी। बैठक का कार्यपत्र संलग्न है। यह उ.क्षे.वि.स. की वेबसाइट (<http://164.100.60.165/>) पर भी उपलब्ध है।

48th meeting of Technical Co-ordination Committee (TCC) was held on 17.11.2023 (10:30 AM) and 70th meeting of Northern Regional Power Committee (NRPC) was held on 18.11.2023 (10:30 AM) at Amritsar, Punjab. MoM of the same is attached herewith. The same is also available on NRPC Sectt. Website (<http://164.100.60.165/>).

भवदीय

Yours faithfully,

(वी.के. सिंह)

(V.K. Singh)

सदस्य सचिव

Member Secretary

प्रतिलिपि: मोहम्मद शायिन, एसडी, एचवीपीएनएल एवं अध्यक्ष, एनआरपीसी (md@hvpa.org.in)

I/32257/2023

48th TCC & 70th NRPC Meeting (17-18 Nov 2023)-MoM

- i. Forum appreciated the initiative of RVPN for use of drone technology in tower surveillance.
- ii. RVPN was requested to do analysis on tower design and causes of its failure.

A.31 Replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor to reduce the overloading of existing transmission line thereby improving the reliability of power system in Haryana (agenda by HVPN)

TCC Deliberation

A.31.1 EE (P) apprised that The HVPNL proposal for 31 No. existing overloaded transmission lines for augmentation with HTLS conductor through PSDF funding was discussed in 68th NRPC meeting held on 18.08.2023 for grant of PSDF wherein following was decided:

Forum accorded in-principal approval to proposal of HVPN for replacement of various size of ACSR conductor (i.e. wolf/panther/zebra/moose) with equivalent HTLS conductor. HVPN was requested to approach CEA for technical evaluation and accordingly, DPR for PSDF may be put up for approval of NRPC in upcoming meetings.

A.31.2 Subsequently, the detailed proposal was submitted by HVPN to Central Electricity Authority (CEA) vide letter dated 25.08.2023.

A.31.3 After detailed deliberations and meeting held on dated 15.09.2023, wherein CTU and Grid India were also present, CEA concurred the proposal for augmentation with HTLS conductor of 28 No transmission lines.

A.31.4 Accordingly, Detailed Project Report (Annexure-XVI) is placed for approval of Forum.

A.31.5 MS, NRPC appreciated HVPN and encouraged states to come with such proposals from PSDF fund.

A.31.6 In concurrence to CEA, forum approved the DPR for proposal of 28 nos, of lines to be implemented by PSDF fund and recommended to NRPC forum for approval.

NRPC Deliberation

Forum concurred the decision of the TCC forum.

Decision of NRPC Forum:

48th TCC & 70th NRPC Meeting (17-18 Nov 2023)-MoM

Forum approved DPR for reconductoring proposal of 28 nos. of lines to be implemented by PSDF fund.

A.32 Philosophy of Drawal Points of ICTs at Transmission Substation of PGCIL (agenda by UPSLDC)

TCC Deliberation

- A.32.1 EE (P) apprised that in 23rd TeST sub-committee meeting held on 21.09.2023 issue of Drawal Points of ICTs at Transmission Substations of PGCIL was deliberated.
- A.32.2 In the meeting, it was submitted that SEM installed at 220kV feeders should be taken for purpose of energy drawal and accounting of states. In case, there is some issue in SEM of 220kV feeders, meters installed at LV side of ICTs may be taken for the purpose of Energy. In the meeting, it was decided that a separate meeting may be held to discuss the issue of philosophy of Drawal points.
- A.32.3 Accordingly, a separate meeting was held on 13.10.2023 at NRPC Secretariat wherein UP raised concern in calculation of energy loss and stated that drawal is being calculated from the POWERGRID substation's HV side, but the drawal point of state is on the LV side of ICT which should be taken for the purpose of energy drawal and accounting of states. MoM of the meeting is attached as **Annexure-XVII**.
- A.32.4 Further, it was deliberated that according to CEA metering regulation, 2005 location of meter to be installed is on the HV side of the ICT and if, two or more states are fed, it should be placed on feeder. However, if LV side of ICT is taken for energy drawal and accounting then ICT losses will be borne by CTU, which will be distributed all over India which may not be a correct practice.
- A.32.5 Furthermore, CERC (Sharing of ISTS and Losses) Regulations, 2020 states that Transformer Component for a State shall comprise of Yearly Transmission Charges for inter-connecting transformers (ICTs) planned for drawal of power by the concerned State. Hence, only socializing of losses may be unjust.
- A.32.6 CE, UPSLDC stated that as the asset is of POWERGRID, then state should not bear loss of it by connecting meter on HV side.
- A.32.7 MS, NRPC quoted that as per CERC and CEA regulation, metering is to be done from HV side. CTU will not bear the ICT loss. UP STU may approach to UPERC or CERC for the resolution.
- A.32.8 CE (RA division). CEA commented that meter should not be at interface side, it should be on LV side. But as per practice and provisions of regulations the metering is to be done from HV side. He suggested to take the matter to CEA for any

File No.CEA-PS-11-22(13)/1/2019-PSPA-I Division

558



भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

केन्द्रीय विद्युत प्राधिकरण

Central Electricity Authority

विद्युत प्रणाली योजना एवं मूल्यांकन-I प्रभाग

Power System Planning & Appraisal-I Division

सेवा में / To,

Chief Engineer (PD&C),
Haryana Vidyut Prasaran Nigam Limited
Shakti Bhawan, Sector-6
Panchkula (Haryana) - 134109

विषय /Subject: HVPNL's proposal for replacement of various existing conductors (i.e. wolf/ panther/ zebra/ moose) with equivalent HTLS conductor to reduce the overloading of existing transmission lines

संदर्भ/Reference: HVPNL letter no. Ch-78/HSS-391/Vol-III dated 11.12.2023

महोदय/ Sir,

In view of the exponential growth in the power demand in Haryana, HVPNL vide letters dated 25.08.2023 and 13.09.2023 had proposed reconductoring of 32 nos. of existing transmission lines with equivalent HTLS conductors in the areas where erection of new transmission lines is not possible due to non-availability of RoW. Subsequently, CEA vide letter dated 15.11.2023 concurred the HVPNL's proposal for reconductoring of 28 nos. of transmission lines and recommended HVPNL to review the following reconductoring proposals of remaining 4 nos. of transmission lines:

S.No.	HVPNL's proposal
1.	Reconductoring of Badshahpur – Sohna 66 kV D/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-14.594 km)
2.	Reconductoring of Kaithal-Khanpur 132 kV S/c line with HTLS conductor having current carrying capacity of 600 Amp. (Route length-16.52 km)
3.	Reconductoring of Samaypur-Palli 220 kV D/c line with HTLS conductor having current carrying capacity of 1200 Amp (Route length – 9 km).
4.	Creation of LILO of one circuit of 220 kV Nuna Majra - Daultabad D/c line with HTLS conductor having ampacity of twin moose ACSR conductor (1262 amp) at 400 kV substation Bahadurgarh (PGCIL) (approx. 2.0 kms) along with augmentation of existing conductor of same circuit which is being LILOed for the section from 220 kV substation Nuna Majra to the LILO point with HTLS conductor (Route length-3.01 km)

HVPSNL vide letter under reference dated 11.12.2023 has submitted the justification for requirement of reconductoring of above transmission lines. Further, comments were also sought from CTUIL and Grid-India on the above proposal.

Based on the justification furnished by HVPSNL and comments of CTUIL and Grid-India, our observations are as follows:

- (i) HVPSNL's proposal for reconductoring of transmission lines at S. No. 1, 2 and 3 in the above table seems to be generally in order.
- (ii) Regarding the proposal for reconductoring of transmission line at S.No. 4, it is to mention that as present, 2 ckt already exist between Bahadurgarh and Nuna Majra and 3rd ckt would be created with LIL0 of one circuit of 220 kV Nuna Majra - Daultabad D/c line whose reconductoring has been proposed by HVPSNL. As per the present loading and power flow studies, there does not seem to be need for reconductoring only one ckt of Bahadurgarh - Nuna Majra 220 kV line. Reconductoring of the same may be carried out at a later stage based on the increase in loading in real time.
- (iii) Along with reconductoring of the proposed lines, HVPSNL may also ensure matching of bay upgradation works associated with lines whose reconductoring has been proposed.
- (iv) It has been observed that various intra-state lines and ICTs of HVPSNL are not N-1 compliant. Accordingly, HVPSNL may plan necessary transmission system strengthening works for the same.

भवदीय / Yours faithfully,

Signed by Nitin Deswal

Date: 20-02-2024 10:56:57

Reason: Approved
नितिन देसवाल / Nitin Deswal

(उप निदेशक / Deputy Director)

Copy to:

1. COO (CTUIL), Saudamini, Plot no. 2, Sector -29, Gurgaon-122 001
2. Director (System Operation), Grid Controller of Indis Limited (Grid-India), B-9, Qutab Institutional Area, Katwaria Sami, New Delhi - 110010

S. No.	Task Name	Total Scope		Start Date	Likely Completion Date	Partial Shutdown				Complete Shutdown							
		Unit	Qty.			Apr'24		May'24		Jun'24							
						W-1	W-2	W-3	W-4	W-1	W-2	W-3	W-4				
1	Work during Partial Shutdown Period (1st April 24 to 15th May 24)																
A.	Balance work of BAFFLE WALL CONSTRUCTION AT HPP – TRT OUTLET																
1	Construction of approach road up to El.611.00m	Rm	70.0	4/1/2024	4/20/2024	40	30										
2	Upstream and downstream ramp construction	Cum	2450	4/1/2024	5/15/2024	300	350	400	400	500	500						
3	Drilling and Grouting at center portion of baffle wall	Rm	280	4/1/2024	5/15/2024	45	45	45	45	45	55						
4	Partial Micro piling work in front of 3A & 3B.	Nos	58	4/1/2024	5/15/2024		18		22		18						
5	Slope Protection work (Left Bank)	Sqm	2640	4/1/2024	5/15/2024	440	440	440	440	440	440						
6	Slope Protection work (Right Bank)	Sqm	1110	4/1/2024	5/15/2024	185	185	185	185	185	185						
B.	Approach road construction PSP – TRT OUTLET																
1	Construction of access road upto Baffle wall at EL 603.0m.	Rm	90	4/15/2024	5/6/2024			30	30	30							
C. a	TRT OUTFALL – Breaking of Flood Protection Wall upto EL 609.00m																
b.	Extension of raft (Upto EL 598.50m)	Cum	450	4/15/2024	5/7/2024			200		250							
C.	Curtain Grouting from EL 598.00 m																
				4/24/2024	5/14/2024				200	200	200						
2	Work during Complete Shutdown Period (16th May'24 to 30th June'24)																
	WORKS OF TRT OUTFALL																
1	The entire dismantling of FPW from EL 609.00m to EL 596.50m.	Cum	19000	5/16/2024	6/30/2024							1500	1500	4000	4000	4000	4000
2	Extension of approach from baffle wall to flood protection wall at EL 598m.	RM	20	5/16/2024	5/30/2024							10	10				
3	Balance micro piling (200 Nos Approx.)	Nos	70	5/25/2024	6/15/2024								22	24	24		
4	Extension of raft (Upto EL 598.50m)	Cum	650	5/16/2024	6/24/2024							200		250	200	200	
5	Extension of U/s & D/s Guide wall up to river. (about 30m each from EL 598m to EL616m)	Cum	800	5/16/2024	6/30/2024										250	250	300
6	Construction of access road at left bank, reaching up to the River bank	RM	60	5/16/2024	6/30/2024							10	10	10	10	10	10
7	BAFFLE WALL, Construction of access road from El 603.0m to EL598.0m & RAMP CONSTRUCTION PSP – TRT OUTLET	Cum	2970	5/16/2024	6/30/2024							470	500	500	500	500	500
8	Concrete in U/S and D/s Guide wall extension	Cum	800	6/8/2024	6/30/2024										250	250	300
9	Curtain Grouting from EL 598.00 m	RM	1400	5/16/2024	6/30/2024							200	200	250	250	250	250
10	Slope Protection work (Left Bank)	Sqm	2640	5/16/2024	6/30/2024							440	440	440	440	440	440
11	Slope Protection work (Right Bank)	Sqm	1110	5/16/2024	6/30/2024							185	185	185	185	185	185

RIVER JOINING WORKS OF TEHRI PSP (4x250 MW)

(Considering partial shutdown from 01.04.2024 to 15.05.2024 and
Complete shutdown from 16.05.2024 to 30.06.2024)

Why Partial & Complete shutdown is required?

- Two nos baffle walls are required to be constructed to avoid the entry of debris etc in the water conductor system of PSP from TRT side during Pumping Mode of operation. The location of the proposed baffle wall is as below:

U/s of HPP TRT from EL.600.00m to El.607.00m.

U/s of PSP TRT from EL.597.00m to El.603.00m.

During operation of HPP & KHEP, the water level is generally above El.603.00m. Hence, the above two nos Baffle wall cannot be constructed without partial & complete shutdown of HPP & KHEP.

- The adjacent rock condition of river valley near U/s of PSP TRT area is filled with loose materials & required to be protected before operation of PSP. Further, the proposed approach road for the treatment (left & right bank) is upto EL.597.00m. Hence, to take up the work of slope protection with construction of approach road for baffle wall & as well as for slope protection works, the proposed partial & complete shutdown of HPP & KHEP is required.

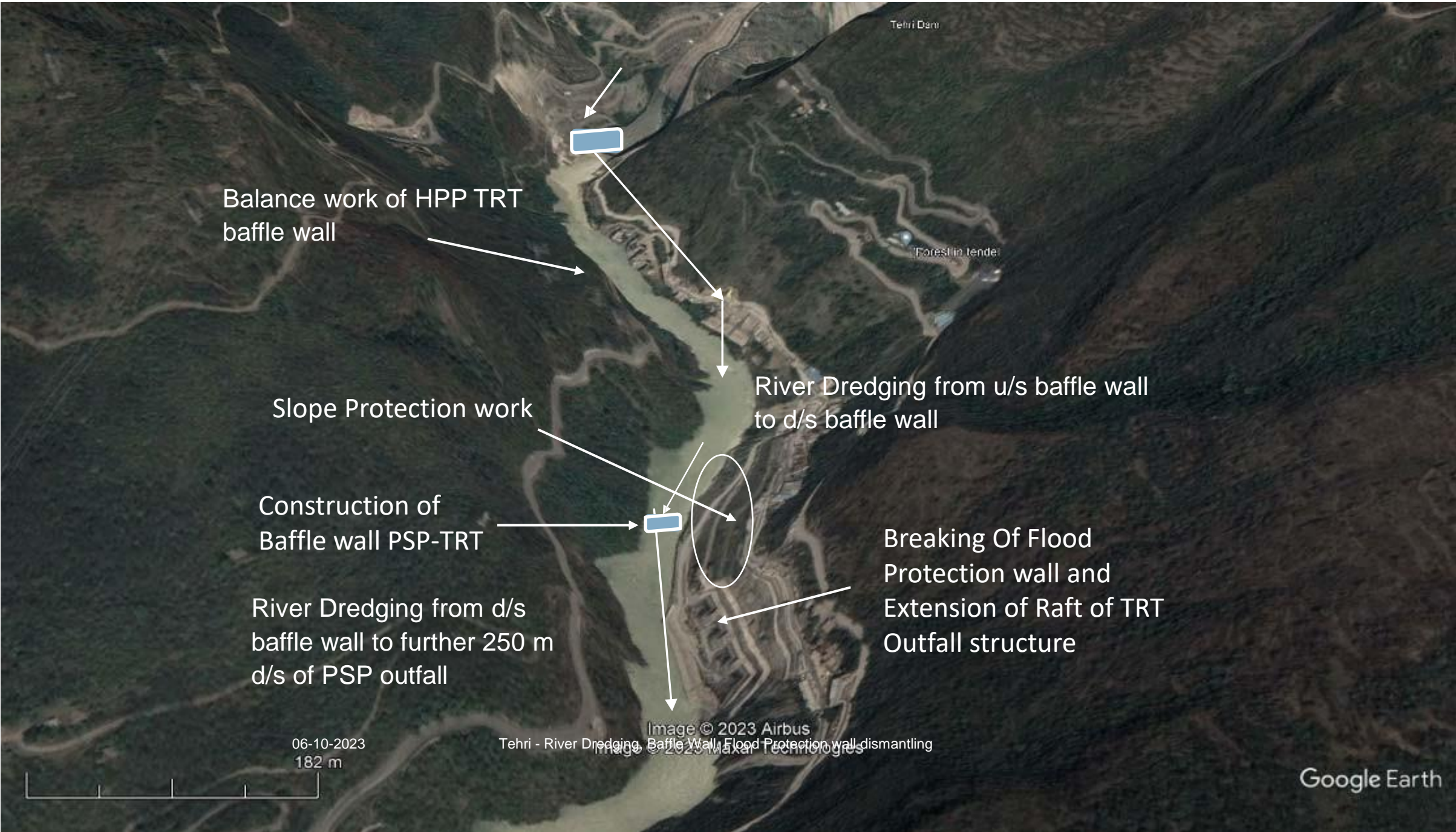
- The existing Flood protection wall at PSP TRT outfall area (from El.616.00m to El.597.00m) is required to be removed before operation of PSP and subsequently raft at EL. 598.00m and U/s & D/s guide walls upto El.616.00m are required to be constructed.

Requirement of partial & complete shutdown of Tehri HPP & KHEP

➤ *Partial Shutdown (THPP & KHEP): 1st April-24 to 14th May-24.*

➤ *Complete Shutdown(THPP & KHEP): 15th May-24 to 30th Jun-24.*

S. No.	Task Name	Total Scope		Start Date	Likely Completion Date	Partial Shutdown								Complete Shutdown			
		Unit	Qty.			Apr'24				May'24				Jun'24			
						W-1	W-2	W-3	W-4	W-1	W-2	W-3	W-4	W-1	W-2	W-3	W-4
1	Work during Partial Shutdown Period (1st April 24 to 15th May 24)																
A.	Balance work of BAFFLE WALL CONSTRUCTION AT HPP – TRT OUTLET																
1	Construction of approach road up to EL.611.00m	Rm	70.0	01-04-2024	20-04-2024	40	30										
2	Upstream and downstream ramp construction	Cum	2450	01-04-2024	15-05-2024	300	350	400	400	500	500						
3	Drilling and Grouting at center portion of baffle wall	Rm	280	01-04-2024	15-05-2024	45	45	45	45	45	55						
4	Partial Micro piling work in front of 3A & 3B.	Nos	58	01-04-2024	15-05-2024			18	22		18						
5	Slope Protection work (Left Bank)	Sqm	2640	01-04-2024	15-05-2024	440	440	440	440	440	440						
6	Slope Protection work (Right Bank)	Sqm	1110	01-04-2024	15-05-2024	185	185	185	185	185	185						
B.	Approach road construction PSP – TRT OUTLET																
1	Construction of access road upto Baffle wall at EL 603.0m.	Rm	90	15-04-2024	06-05-2024			30	30	30							
C. a	TRT OUTFALL – Breaking of Flood Protection Wall upto EL 609.00m																
b.	Extension of raft (Upto EL 598.50m)	Cum	450	15-04-2024	07-05-2024			200		250							
c.	Curtain Grouting from EL 598.00 m			24-04-2024	14-05-2024				200	200	200						
2	Work during Complete Shutdown Period (16th May'24 to 30th June'24)																
	WORKS OF TRT OUTFALL																
1	The entire dismantling of FPW from EL 609.00m to EL 598.50m.	Cum	19000	16-05-2024	30-06-2024							1500	1500	4000	4000	4000	4000
2	Extension of approach from baffle wall to flood protection wall at EL 598m.	RM	20	16-05-2024	30-05-2024							10	10				
3	Balance micro piling (200 Nos Approx.)	Nos	70	25-05-2024	15-06-2024								22	24	24		
4	Extension of raft (Upto EL 598.50m)	Cum	650	16-05-2024	24-06-2024							200		250	200	200	
5	Extension of U/s & D/s Guide wall up to river. (about 30m each from EL 598m to EL616m)	Cum	800	16-05-2024	30-06-2024										250	250	300
6	Construction of access road at left bank, reaching up to the River bank	RM	60	16-05-2024	30-06-2024							10	10	10	10	10	10
7	BAFFLE WALL,Construction of access road from EI 603.0m to EL598.0m & RAMP CONSTRUCTION PSP – TRT OUTLET	Cum	2970	16-05-2024	30-06-2024							470	500	500	500	500	500
8	Concrete in U/S and D/s Guide wall extension	Cum	800	08-06-2024	30-06-2024										250	250	300
9	Curtain Grouting from EL 598.00 m	RM	1400	16-05-2024	30-06-2024							200	200	250	250	250	250
10	Slope Protection work (Left Bank)	Sqm	2640	16-05-2024	30-06-2024							440	440	440	440	440	440
11	Slope Protection work (Right Bank)	Sqm	1110	16-05-2024	30-06-2024							185	185	185	185	185	185



Balance work of HPP TRT baffle wall

Slope Protection work

Construction of Baffle wall PSP-TRT

River Dredging from d/s baffle wall to further 250 m d/s of PSP outfall

River Dredging from u/s baffle wall to d/s baffle wall

Breaking Of Flood Protection wall and Extension of Raft of TRT Outfall structure

Tehri Dam

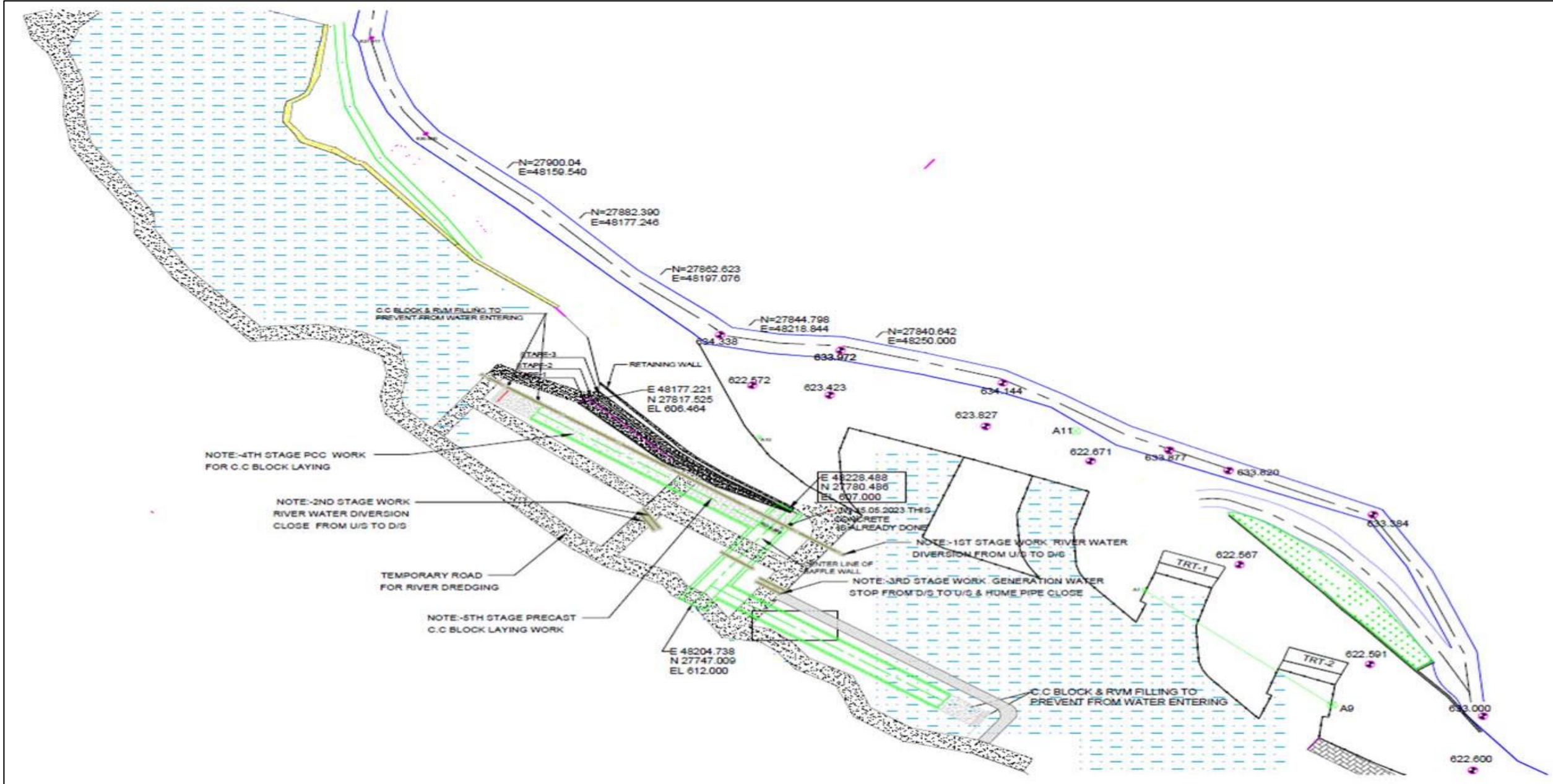
Forest in tende

06-10-2023
182 m

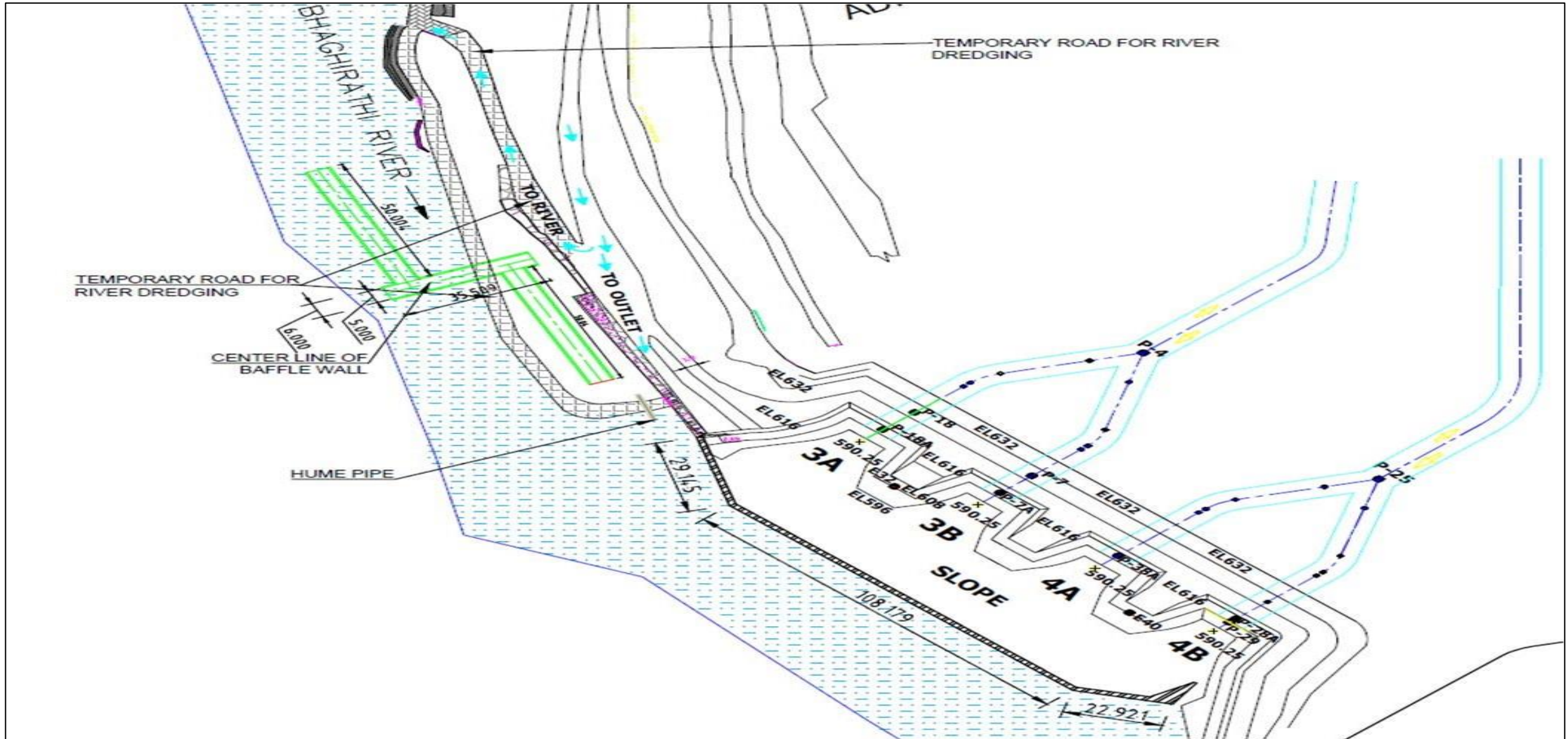
Image © 2023 Airbus
Tehri - River Dredging, Baffle Wall, Flood Protection wall dismantling
Image © 2023 Maxar Technologies

Google Earth

BAFFLE WALL CONSTRUCTION AT HPP – TRT OUTLET



Approach road construction PSP – TRT OUTLET



DISMANTLING OF Flood Protection Wall:





सेंट्रल ट्रांसमिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)

(A Government of India Enterprise)

Ref: C/CTUIL/IEGC/2023/1

Dated: 27/06/2023

To,
The Secretary,
Central Electricity Regulatory Commission,
3rd Floor, Chandralok Building,
36, Janpath, New Delhi-110001.

Kind Attn.: Mr. H S Pruthi

Sub: Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 notified dtd. 29.05.2023

Dear Sir,

This is in reference to the **Clause no 49. 12: "Energy Metering and Accounting"** of recently notified Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023 notified dtd. 29.05.2023. In this regard, we would like to highlight some clauses of IEGC & CEA Metering regulation as follows:

➤ Central Electricity Regulatory Commission (Indian Electricity Grid Code) Regulations, 2023

• Clause no 49.12.(b)

The installation, operation, calibration and maintenance of Interface Energy Meters (IEMs) with automatic remote meter reading (AMR) facility shall be in accordance with the CEA Metering Regulations 2006.

• Clause no 2. 2.(b)

The concerned RLDC will be responsible for processing the interface meter data and computing the net injections at pooling station represented by each QCA or REGS or Lead Generator, as the case may be, ...

• Clause no 49.12.(e)

Entities in whose premises the IEMs are installed shall be responsible for ... (ii) taking weekly meter readings for the seven day period ending on the preceding Sunday 2400 hrs and transmitting them to the RLDC by Tuesday noon, in case such readings have not been transmitted through automatic remote meter reading (AMR) facility .."

➤ Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations, 2019

- Clause no 4. (1).(a) - "(1) (a) all new Interface Meters and Energy Accounting and Audit Meters shall be of static type and shall have automatic remote meter reading facility."



सेंट्रल ट्रांसमिशन यटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

• Clause no 14. (1). (a)

"It shall be the responsibility of the Generating Company or the licensee, in whose premises the meter has been installed, to download the meter data, record the metered data and furnish such data to various agencies as per the procedure laid down by the Appropriate Commission".

In view of the above, following are our observations/suggestions:

➤ **Nodal agency for implementation of Automatic Meter Reading (AMR):**

Nodal agency for AMR (Automated Meter Reading) system implementation has not been addressed either in the CEA metering regulations or the notified IEGC 2023.

As per the regulations, the responsibility of recording, downloading, and sending meter data to RLDC is with the concerned agencies, in whose premises the meters are installed. And the responsibility of processing the meter data is with RLDC.

Automatic Meter reading (AMR) system is to perform the above tasks of acquiring meter data automatically from all ISTS IEMs and processing of such meter data to compute time block wise actual net injection and drawal of regional entities.

In view of above, RLDC(GRID-INDIA) may be assigned as nodal agency for finalization of metering scheme and for implementation of AMR system comprising of meter data acquisition and its processing to compute time block wise actual net injection and drawal of regional entities and cross border entities within their control area.

Accordingly following clauses may be considered for suitable inclusion in Grid Code or as appropriate.

- **RLDC shall be the nodal agency for implementation of Automatic Meter Reading (AMR) system.**
- **RLDC/SLDC shall finalize the metering scheme in line with Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006 and its amendments thereafter and provide the same to concerned agencies (with an information to CTU) for installation.**

Thanking you,

Yours faithfully

Nutan Mishra

Sr. GM (UNMS & Metering)



सेंद्रल ट्रान्समिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)
(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.

(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

Ref: C/CTUIL/Metering/NPC/2023/1

Dated: 24/07/2023

To,
The Member Secretary,
National Power Committee Division
Central Electricity Authority,
1st Floor, Wing-5, West Block-II,
R K Puram, New Delhi-66

Kind Attn.: Smt. Rishika Sharan.

Sub: Metering Regulatory Provisions in CEA & IEGC and Technical Specification by JC- NPC; Time block of ISTS Interface Energy meters reg.

Dear Madam,

This is in reference to the Time Block of ISTS Interface Energy Meters. In this regard we would like to bring to your kind notice that there is a mismatch between Metering Regulations and Technical Specification for ISTS Metering System prepared by Joint Committee (constituted in Nov'2020) under NPC.

➤ **CEA metering regulation 2019 amendment- Year 2019**

As per CEA metering regulation 2019 amendment, the time block for recording of meter data by the ISTS meters is defined as 15 minutes as quoted below:

Quote

"Provided that the time block for recording of meter data by the meter shall be 15 minutes or as specified by the Central Commission."

Unquote

➤ **Technical Specification by JC, NPC- July'2022**

The Technical Specification finalized by JC, calls for 5 min time block configuration for all new ISTS IEMs quoted as below:

Quote

"All the new IEMs shall be factory manufactured as 5 min Time Block and the AMR system shall collect 5 min Load Survey data from all interface points and share the same with MDP system. In case the MDP application chooses the settlement period to be 15 min, then the collected data of 5 min interval shall be converted to 15 min interval in MDP application software before sharing the data with RPC for energy accounting for all interface points."

"All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system. AMR system shall share [npc] file of 5 min Time Block data to POSOCO



सेंद्रल ट्रान्समिशन यूटिलिटी ऑफ इंडिया लिमिटेड

(पावर ग्रिड कॉर्पोरेशन ऑफ इंडिया लिमिटेड के स्वामित्व में)

(भारत सरकार का उद्यम)

CENTRAL TRANSMISSION UTILITY OF INDIA LTD.
(A wholly owned subsidiary of Power Grid Corporation of India Limited)
(A Government of India Enterprise)

through reliable communication. MDP at its end shall do the necessary computation to convert 5 min Time Block data to 15 min Time block data until complete replacement of 15 min existing IEMs with new 5 min IEM"

Unquote

➤ Metering Regulations Provisions in IEGC 2023- Issued by CERC- May'2023

Further as per recently issued IEGC 2023, monthly data asked from Solar plant generation, Wind plant generation in 15 min time block only. The mentioned formats are also in 15 min time block.

➤ SRPC sub-committee deliberation, June 2023

The Time Block for ISTS meters in light of issued IEGC was deliberated in 55th Meeting of Commercial Sub-Committee of SRPC and the same is as below:

"...and the forum clarified that as per TS of AMR SEMs should be capable of 5min recording but currently since scheduling and accounting is 15min, the same shall be set as default configuration is AMR SEMs."

Keeping in view aforesaid regulations and RPC deliberations, wherein the CEA Metering Regulations & CERC IEGC 2023 mentions regarding 15 Min Time block, and Technical Specification by JC mentions about 5 minute Time block and subsequent deliberation of SRPC CCM, you are requested to review and advise us expeditiously regarding the time block to be considered for procurement of new ISTS meters, AMR & MDP to be implemented region wise in PAN India basis.

Matter may be treated most urgent.

Thanking you,

Yours faithfully

Nutan Mishra

Sr. GM (UNMS & Metering)

Enclosure: Relevant clause of CEA Metering Regulation, IEGC 2023 & Technical Specification

CC:

1. Member (PS), CEA
2. Chief (Engg), CERC
3. MS, NRPC, ERPC, SRPC, NERPC & WRPC.
4. ED, NLDC



Grid Controller of India Limited
(A Govt. of India Enterprise)
(Formerly Power System Operation Corporation Limited)
National Load Despatch Centre

Date:28.07.2023

Grid-India Inputs regarding the time block to be considered for procurement of new ISTS IEM, AMR & MDP to be implemented region wise in PAN India basis.

Ref: Email from NPC division of CEA dtd 25.07.2023

With reference to above, Input from Grid-India is as below:

1. **CERC** in Petition No. 07/SM/2018, in the matter of “Pilot Project on 05-Minute Scheduling, Metering, Accounting and Settlement for Thermal/Hydro, and on Hydro as Fast Response Ancillary Services (FRAS)”, has given order on 16.07.2018(**Attached as Annexure-1**). Relevant part of the order is as follows:

Quote

..... All future procurements of Interface Energy Meters should ideally have recording at 5- min interval and frequency resolution of 0.01 Hz. They should be capable of recording Voltage and Reactive Energy at every 5-min and should have feature of auto-time synchronization through GPS.....

Unquote

2. **CEA** vide notification dated 23.12.2019 has notified Central Electricity Authority (Installation and Operation of Meters) (Amendment) Regulations, 2019(**Attached as Annexure-2**). Relevant part of the Regulations is as follows

“under the Schedule Part II (Standards for interface meters), 1 b (viii),

.... Provided that the time block for recording of meter data by the meter shall be 15 minutes or **as specified by the Central Commission.**”

Unquote

3. **NPC (CEA) Joint Committee** after due deliberation has finalised the "Technical Specification (TS) of Interface Energy Meters, Automatic Meter Reading system and Meter Data Processing system" and notified the same on 06.12.2022(**Attached as Annexure-3**). Relevant part of the provisions covered in the Technical Specifications is as follows:

Quote

“All the procured IEMs shall be configured as 5 min time block. These meters shall record and send 5 min block data to regional AMR system. AMR system shall share [. npc] file of 5 min Time Block data to POSOCO through reliable communication. MDP at its end shall do the necessary computation to convert 5 min Time Block data to 15 min Time block data until complete replacement of 15 min existing IEMs with new 5 min IEMs.”

Unquote

4. Group constituted by **Ministry of Power** for “Development of Electricity Market in India” proposed comprehensive solutions to address key issues, inter-alia, implementation of 5-minutes based metering, scheduling, dispatch, and settlement in May 2023. (**Attached as Annexure-4**).

In view of above, 5 minute time block could be considered for procurement of new ISTS IEM, AMR & MDP.

FW: Letter to NPC- IEM Meters & Time Block Reg.

Sangita Sarkar {संगीता सरकार} <jana.sangita@powergrid.in>

Wed 02-08-2023 16:10

To:Rahul Kumar Shakya {} <rshakya@powergrid.in>

📎 5 attachments (6 MB)

Grid-India Inputs regd time block of IEM AMR and MDP.pdf; Annexure-1 CERC-order-07SM2018 dtd 16.07.2018.pdf; Annexure-2-CEA (Installation and Operation of Meters) (Amendment) Regulations, 2019.pdf; Annexure-3 NPC- Joint Committee_TS_CEA_6July-2022.pdf; Annexure-4 MOP-PressRelease.pdf;

Important.. Please file .

Regards

From: NPC CEA <cenpccea@gmail.com>

Sent: Monday, July 31, 2023 12:59 PM

To: Ashok Pal {अशोक पाल} <ashok@powergrid.in>; Nutan Mishra {नूतन मिश्रा}

<nutan@powergrid.in>; Sangita Sarkar {संगीता सरकार} <jana.sangita@powergrid.in>

Cc: sharan Rishika <rishika_sh@yahoo.com>; satyendra dotan <skdotan21@gmail.com>

Subject: Fwd: Letter to NPC- IEM Meters & Time Block Reg.

Sir,

With reference to the trailing email, the inputs received from GRID-India is forwarded herewith.

----- Forwarded message -----

From: **Neeraj Kumar (नीरज कुमार)** <neeraj.kumar@grid-india.in>

Date: Fri, 28 Jul 2023 at 18:00

Subject: RE: Letter to NPC- IEM Meters & Time Block Reg.

To: NPC CEA <cenpccea@gmail.com>, Vandana Singhal <cedpr-cea@gov.in>, sharan Rishika <rishika_sh@yahoo.com>, satyendra dotan <skdotan21@gmail.com>

Cc: CMD - Grid-India(सीएमडी - ग्रिड-इंडिया) <cmd@grid-india.in>, S. S. Barpanda (एस. एस. बरपंडा) <ssbarpanda@grid-india.in>, R K Porwal (आर के पोरवाल) <rk.porwal@grid-india.in>, S. C.

Saxena (एस. सी. सक्सेना) <scsaxena@grid-india.in>, N Roy (एन रॉय) <nroy@grid-india.in>, R

Sutradhar (आर सूत्रधार) <rajibsutradhar@grid-india.in>, S P Kumar (एस पी कुमार) <spkumar@grid-india.in>, V Balaji (वी बालाजी) <vbalaji@grid-india.in>, Amaresh Mallick (अमरेश मल्लिक)

<amareshmallick@grid-india.in>

Sir,

With reference to the trailing email from National Power Committee Division, Grid-India Inputs on the captioned subject are attached herewith.

With Regards,

Neeraj Kumar

From: NPC CEA <cenpccea@gmail.com>

Sent: 25 July 2023 15:09

To: CMD - Grid-India(सीएमडी - ग्रिड-इंडिया) <cmd@grid-india.in>; Vandana Singhal <cedpr-cea@gov.in>; Neeraj Kumar (नीरज कुमार) <neeraj.kumar@grid-india.in>
Cc: sharan Rishika <rishika_sh@yahoo.com>; satyendra dotan <skdotan21@gmail.com>
Subject: Fwd: Letter to NPC- IEM Meters & Time Block Reg.

****Warning****

This email has not originated from Grid-India. Do not click on attachment or links unless sender is reliable. Malware/ Viruses can be easily transmitted via email.

Sir,

The trailing email received from CTU regarding time block of ISTS IEM is forwarded herewith wherein it has been requested to review the time block of ISTM IEM (as per the Technical Specifications of IEM, AMR and MDP) in line with the IEGC 2023 and CEA metering regulations. **In this regard, it is requested to provide the comments by 28.07.2023.**

----- Forwarded message -----

From: **Nutan Mishra {नूतन मिश्रा}** <nutan@powergrid.in>
Date: Mon, 24 Jul 2023 at 18:55
Subject: Letter to NPC- IEM Meters & Time Block Reg.
To: Rishika Sharan <rishika@nic.in>, rishika sh <rishika_sh@yahoo.com>, cenpccea <cenpccea@gmail.com>, Chief Engineer NPC <cenpc-cea@gov.in>
Cc: Ashok Kumar Rajput <akrajput@nic.in>, rajput ashok <rajput.ashok@gmail.com>, "Shilpa Agarwal" <shilpa@cercind.gov.in>, "Awdhesh Kumar Yadav" <awdhesh@nic.in>, memeberpscea@nic.in <memeberpscea@nic.in>, mserpc-power@nic.in <mserpc-power@nic.in>, Satyanarayan S <ms-wrpc@nic.in>, mssrpc-ka@nic.in <mssrpc-ka@nic.in>, ms-nerpc@nic.in <ms-nerpc@nic.in>, ms-nrpc@nic.in <ms-nrpc@nic.in>, S C Saxena <scsaxena@posoco.in>, Vikram Singh Bhal {विक्रम सिंह भाल} <vsbhal@powergrid.in>, Sangita Sarkar {संगीता सरकार} <jana.sangita@powergrid.in>, Ashok Pal {अशोक पाल} <ashok@powergrid.in>, P C Garg {पी.सी. गर्ग} <pcgarg@powergrid.in>

Dear Madam,

Pls find enclosed the letter regarding Time Block of ISTS IEM for kind review & advise for further implementation.

Warm regards,

Nutan Mishra
Sr GM, CTUIL- POWERGRID
9873918449 (M)

दावात्याग : यह ईमेल पावरग्रिड के दावात्याग नियम व शर्तों द्वारा शासित है जिसे

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Regards,

O/o Chief Engineer (National Power Committee Division)

Central Electricity Authority

Phone No: 011-26732014 / 9868021299

New Delhi - 110066.

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--

Regards,

O/o Chief Engineer (National Power Committee Division)

Central Electricity Authority

Phone No: 011-26732014 / 9868021299

New Delhi - 110066.

From: "Vandana Singhal" <cedpr-cea@gov.in>
To: cenpccea@gmail.com, secy@cercin.gov.in, "Awdhesh Kumar Yadav"
<chiefengg@cercind.gov.in>, cmd@grid-india.in
Sent: Tuesday, August 8, 2023 12:49:03 PM
Subject: Letter to NPC- IEM Meters & Time Block Reg.

This in reference to the Time Block of ISTS Interface Energy Meters in which CTU has raised a problem of mismatch between CEA (Installation and Operation of Meters) regulations, 2019 and Technical Specification for ISTS Metering System prepared by Joint commission (Nov' 2020) under NPC. In light of this, **a meeting has been scheduled on 18 August 2023 at 11:00 AM in Room No: 628, 6th floor, Sewa Bhawan, Sector 1, R K Puram, New Delhi 110066.**

You are requested to nominate a person well versed with subject to attend the meeting. Further, documents related to above pertaining matter is attached for your reference.

Regards,
Vandana Singhal,
Chief Engineer(Distribution Policy and Regulatory Division),
Central Electricity Authority
Ph: 011-26732661
Fax: 011-26102793

Transmission scheme for evacuation of power from Ratle HEP (850MW)

Sl. No.	Description of Transmission Element	Scope of work (Type of Substation/Conductor capacity/km/no. of bays etc.)
1	400 kV Kishenpur-Samba D/c line (Quad) (only one circuit is to be terminated at Kishenpur while second circuit would be connected to bypassed circuit of 400kV Kishtwar – Kishenpur line (Quad))	Length -35 km (Quad)
2	Bypassing of one ckt of 400kV Kishtwar – Kishenpur 400kV D/c line (Quad) at Kishenpur and connecting it with one of the circuit of Kishenpur-Samba 400kV D/c line(Quad), thus forming 400kV Kishtwar - Samba (Quad) direct line (one ckt)	
3	1x80 MVAR Switchable line reactor at Samba end of 400kV Kishtwar-Samba 400kV line-165km (Quad) [formed after bypassing of 400kV Kishtwar – Kishenpur line (Quad) at Kishenpur and connecting it with one of the circuit of Kishenpur-Samba 400kV D/c line(Quad)]	<ul style="list-style-type: none"> • 420 kV, 80 MVAR switchable line reactors at Samba S/s end– 1 nos. • Switching equipment for 420kV, 80 MVAR switchable line reactors at Samba S/s end – 1 no
4	Bypassing both ckts of 400kV Kishenpur – Samba D/c line (Twin) & 400 kV Samba – Jalandhar D/c line (Twin) at Samba and connecting them together to form 400kV Kishenpur– Jalandhar D/c direct line (Twin)	
5	Bays upgradation works (2000A to 3150A) at Samba end (bays vacated after bypassing of Kishenpur – Samba D/c line (Twin) & 400 kV Samba – Jalandhar D/c line (Twin))	400kV Bay upgradation works- 4 nos. bays
6	1x63 MVAR Switchable line reactor on each ckt at Jalandhar end of Kishenpur– Jalandhar D/c direct line -170km(Twin) (formed after bypassing both ckts of 400kV Kishenpur – Samba D/c line (Twin) & 400 kV Samba – Jalandhar D/c line (Twin) at Samba and connecting them together to form Kishenpur– Jalandhar D/c direct line (Twin))	<ul style="list-style-type: none"> • 420 kV, 63 MVAR switchable line reactors at Jalandhar S/s end– 2 nos. • Switching equipment for 420kV, 63 MVAR switchable line reactors at Jalandhar S/s end – 2 no
7	400kV Samba- Jalandhar D/c line(Quad) (only one circuit is to be terminated at Jalandhar while second circuit would be connected to bypassed circuit of Jalandhar –Nakodar 400kV D/c line)	Line Length -135 km

8	1x80 MVA Switchable line reactor at Samba end of Samba –Nakodar direct line (Quad) formed after bypassing of 400kV Jalandhar – Nakodar line-177km (Quad) at Jalandhar and connecting it with one of the circuit of Samba-Jalandhar 400kV D/c line(Quad Moose), thus forming Samba –Nakodar line (Quad)	<ul style="list-style-type: none"> • 420 kV, 80 MVA switchable line reactors at Samba S/s end– 1 no. • Switching equipment for 420kV, 80 MVA switchable line reactors at Samba S/s end – 1 no.
9	Bypassing 400kV Jalandhar – Nakodar line (Quad) at Jalandhar and connecting it with one of the circuit of Samba-Jalandhar 400kV D/c line(Quad Moose), thus forming 400kV Samba –Nakodar line	
10	LILO of 400 kV Kishenpur- Dulhasti line (Twin) at Kishtwar S/s along with associated bays at Kishtwar S/s	<p>LILO Length- 10km</p> <ul style="list-style-type: none"> • 400kV Kishenpur - Kishtwar (LILO section) is on Twin HTLS (with minimum 2100 MVA capacity) configuration • 400kV Dulhasti -Kishtwar (LILO section) is on Twin Zebra configuration • 400kV line bays at Kishtwar – 2 nos. (line bays at Kishtwar S/s end shall be rated accordingly)
11	Reconductoring of 400 kV Kishenpur-Kishtwar section** with Twin HTLS (minimum 2100 MVA capacity) (formed after LILLO of Kishenpur-Dulhasti line at Kishtwar S/s) along with bay upgradation works (2000A to 3150A) at Kishenpur end for above line.	<p>Length – 132km</p> <p>400kV Bay upgradation work- 1 no. bay at Kishenpur end</p>



AGARWAL MANOJ NIDHI & ASSOCIATES
CHARTERED ACCOUNTANTS

Address: D-221, 4th Floor

Laxmi Nagar

New Delhi-110092

Mob: - +91-8979841661

Email-agarwalmanojnidhi@gmail.com

INDEPENDENT AUDITOR'S REPORT

We have examined the consolidated receipt and payment account as at 31.03.2022 of **Northern Regional Power Committee**. These account are the responsibility of management our responsibility is to express an opinion on these account based on our audit.

We conduct our audit in accordance with Auditing Standard generally accepted in India. Those standards require that we plan and perform the audit and obtain reasonable assurance about whether the accounts are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amount and disclosers in the financial statement. An audit includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

We certify that the Receipt & payment Account are in agreement with the books of accounts maintained at the head office at Delhi.

a). We report the following observation/comment/discrepancies if any:

1. Cash System of Accounting is followed by the management.
2. Cash Balance is (NIL) has been certified by the management.
3. The management have prepared the manual accounts i.e. Receipt & Payment Account only so it is suggested that, the Management of the NRPC should implement any Accounting Software i.e. Tally, Busy etc for maintenance & preparation of proper book of accounts i.e. complete financial statements under double entry system instead of cash system.

b). Subject to above

1. We have obtained all the information and explanation, which to the best of our knowledge and belief were necessary for the purpose of our audit.
2. In our opinion, proper books of accounts have been maintained by the management so far as appears from our examination of the books.
3. In our opinion to the best of our information and according to the explanation gives to us the statement gives true and fair view:-

a. In the case of Receipt & Payment account for the year ended on 31st March 2022

For M/s Agarwal Manoj Nidhi & Associates

Chartered Accountants

Firm Reg. No.-019011C

(Nitin Chandgothiya)

Partner

M.No.-436886

UDIN:23436886 B6W10E2107

Place: Delhi

Date: 14.12.2023



AGARWAL MANOJ NIDHI & ASSOCIATES
CHARTERED ACCOUNTANTS

Address: D-221, 4th Floor

Laxmi Nagar

New Delhi-110092

Mob: - +91-8979841661

Email-agarwalmanojnidhi@gmail.com

INDEPENDENT AUDITOR'S REPORT

We have examined the consolidated receipt and payment account as at 31.03.2023 of Northern **Regional Power Committee**. These account are the responsibility of management our responsibility is to express an opinion on these account based on our audit.

We conduct our audit in accordance with Auditing Standard generally accepted in India. Those standards require that we plan and perform the audit and obtain reasonable assurance about whether the accounts are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amount and disclosers in the financial statement. An audit includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

We certify that the Receipt & payment Account are in agreement with the books of accounts maintained at the head office at Delhi.

a). We report the following observation/comment/discrepancies/Suggestions if any:

1. Cash System of Accounting is followed by the management.
2. Cash Balance is (NIL) has been certified by the management.
3. The management have prepared the manual accounts i.e. Receipt & Payment Account only so it is suggested that, the Management of the NRPC should implement any Accounting Software i.e. Tally, Busy etc for maintenance & preparation of proper book of accounts i.e. complete financial statements under double entry system instead of cash system.

b). Subject to above

1. We have obtained all the information and explanation, which to the best of our knowledge and belief were necessary for the purpose of our audit.
2. In our opinion, proper books of accounts have been maintained by the management so far as appears from our examination of the books.
3. In our opinion to the best of our information and according to the explanation gives to us the statement gives true and fair view:-

a. In the case of Receipt & Payment account for the year ended on 31st March 2023

For M/s Agarwal Manoj Nidhi & Associates

Chartered Accountants

Firm Reg. No.-019011C

(Nitin Chandgothiya)

Partner

M.No.-436886

Place: Delhi

Date: 14.12.2023

UDIN: 23436886 B6WkOD91B2

Annual Budget/ Expenditure for FY 2023-24 for NRPC

Annexure-XXXXII

Account Head	Q1 Expenditure	Q2 Expenditure	Q3 Expenditure	Q4 Expenditure NRPC Fund upto Feb'24	Total FY 2023-24 Expenditure upto Feb'24
Salary	5,516,609	4,784,328	4,428,361	2,665,134	17,394,432
Rewards	-2,817	2,817	73,817	0	73,817
Medical Treatment	114,694	205,613	310,705	263,501	894,513
Allowances	3,924,333	2,975,939	3,072,402	1,707,994	11,680,668
LTC	146,004	47,671	118,227	0	311,902
Taining	0	0	0	17,700	17,700
DTE	161,013	265,631	217,000	353,057	996,701
OE	402,130	1,161,534	7,869,559	5,345,481	14,761,004
RRT	0	0	0	416,812	416,812
Digital Equipment	24,445	140,457	81,915	51,711	298,528
Minor Works	0	0	0	0	0
Repair And Maintenance	33,350	206,816	496,981	6,396,373	7,133,520
Other Revenue Exp.	15,633	101,599	162,999	133,562	413,793
Machinery and Equipment	0	0	5,167,930	0	5,167,930
INFORMATION, COMPUTER TELECOMMUNICATIONS	0	622,512	2,396,823	0	3,019,335
Furniture and fixtures	0	0	0	0	0
Total	10,335,394	10,514,917	24,396,719	17,351,325	62,580,655

* Total Expenditure for the FY 2023-24 is Rs. 6,25,80,655/- and NRPC received from NRLDC (for electricity and water charges share) Rs. 96,56,563. Hence total expenditure for the FY 2023-24 is Rs. 5,29,24,092/-



भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

No. NRPC /AS/NRPC Fund/2023-24/109

Date: 28.02.2024

To,
Managing Director,
J&K State Power Development Corporation,
PDD Building, Exhibition Grounds,
Opposite High Court,
Jahangir Chowk, Srinagar (J&K)
PIN: 190009
pankaj.magotra29@jk.gov.in

Subject: Pending dues of JKSPDC against NRPC contribution amount for FY 2014-15, 2015-16 and FY 2018-19-regarding

It is intimated that the Northern Regional Power Committee (NRPC) was constituted vide government resolution dated 25.05.2005 and subsequent amendments dated 29.11.2005 and 09.05.2008. Further, Northern Regional Power Committee (NRPC) has been re-constituted vide government resolution dated 03.12.2021.

Further, as per Ministry of Power, Govt. of India letter dated 23.02.2006; the activities of RPCs are to be fully financed by the constituent members (copy enclosed). For this purpose, NRPC constituent members are to pay annual contribution as decided in NRPC meeting from time to time.

Accordingly, J&K State Power Development Corp. Ltd. was member of NRPC from FY 2014-15 to FY 2021-22. Payment of contribution amount has been received from JKSPDCL in past but payment is pending for some years.

In this regard, kind reference is invited to deliberation on agenda no. 16 of 71st NRPC Meeting held on 29.01.2024 (copy enclosed) wherein issue of outstanding payment from JKSPDCL was discussed. Details of outstanding contribution of Rs 32,00,000 are mentioned below:

S. No.	Name of Constituent	Period (FY)	Outstanding amount (Rs.)	Penalty (Rs)	Total outstanding amount (Rs.)
1	J&K State Power	2014-15	11,00,000	-	11,00,000

File No.CEA-GO-17-16(68)/7/2024-NRPC

2	Development Corp.	2015-16	11,00,000	-	11,00,000
3	Ltd.	2018-19	10,00,000	-	10,00,000
Grand Total					32,00,000

It is mentioned that the contribution amount is still pending from JKSPDCL. In this regard, various letters/ reminders, and D.O. letters have also been sent by MS, NRPC in the past (copy enclosed).

In view of the above, payment of aforementioned contribution amount is required on an early basis for smooth functioning of NRPC Secretariat. The payment can be made through Demand Draft drawn in favour of "NRPC Fund" or through RTGS in the Bank account named "NRPC Fund" (A/c No. 3083000105096078 RTGS / NEFT Code: PUNB0308300).

This issues with approval of Member Secretary, NRPC.

(प्रियंका पटेल)

(Priyanka Patel)

नोडल ऑफिसर-एन आर पी सी फण्ड

Nodal Officer NRPC Fund

S. No.	Name of Constituent	Period (FY)	Contribution amount Paid	Payment Date	Penalty Pending (Rs)
1	HPSEB	2023-24	10,00,000	03.11.2023	10000
2	NTPC	2023-24	10,00,000	07.11.2023	10000
3	UJVNL	2023-24	10,00,000	17.11.2023	10000
4	UT of Ladakh	2023-24	10,00,000	05.12.2023	20000
5	JVVNL	2023-24	10,00,000	06.12.2023	20000
6	*Lanco Anpara Private Limited	2023-24	10,00,000	08.12.2023	-
7	Renew Power	2023-24	10,00,000	14.12.2023	20000
Grand Total					90,000

**Due to restructuring of company, demand letter not received by them. Demand letter was again sent by NRPC Secretariat at new address of the company with payment date by 15.12.2023.*

A.15.3 Recently, CAG audited at NRPC and observed the pending interest amount of constituents towards NRPC contribution fund. The same is attached as **Annexure-XVIII**.

A.15.4 Lanco Anpara Private Limited vide email dated 14.11.2023 informed NRPC Secretariat that due to management change, there was delay in receipt of demand letter. It requested for revised demand letter and accordingly revised demand letter with due date of 15.12.2023 was sent from NRPC Secretariat.

A.15.5 Further, it is also to mention that UT of J&K and MVVNL have not paid the contribution amount till date. Details of pending amount along with applicable penalty is mentioned below:

S. No.	Name of Constituent	Period (FY)	Contribution amount	Penalty (Rs)	Total Outstanding amount
1	Madhyanchal Vidyut Vitaran Nigam Ltd.	2023-24	10,00,000	30000	10,30,000
2	UT of J&K	2023-24	10,00,000	30000	10,30,000

Decision required from Forum:

Forum may deliberate the above issue and facilitate contribution towards NRPC fund from the concerned utilities.

A.16 Outstanding Contribution from constituent member J&K (agenda by NRPC Secretariat)

A.16.1 NRPC Secretariat has been receiving contribution from most of the constituents in a timely manner except few members. Since FY 2021-22, there has also been provision of penalty of 1% simple interest per month on late payment as decided in NRPC meeting.

A.16.2 It is informed that till JKPDC and JKPD have pending membership payments of 32 lakhs and 22.5 lakhs respectively, details of which are mentioned below:

S. No.	Name of Constituent	Period (FY)	Outstanding amount (Rs.)	Penalty (Rs)	Total outstanding amount (Rs.)
1	J&K State Power	2014-15	11,00,000	-	11,00,000
2	Development	2015-16	11,00,000	-	11,00,000
3	Corp. Ltd.	2018-19	10,00,000	-	10,00,000
4	J&K State Power	2019-20	10,00,000	-	10,00,000
5	Development Department	2021-22	10,00,000	2,50,000	12,50,000
Grand Total					54,50,000

A.16.3 In this regard, pending payment status was discussed in various meetings and several reminders and D.O. letters have also been communicated by NRPC Secretariat (copy enclosed as **Annexure-XIX**), however above payment is pending till date.

A.16.4 CAG in its audit of NRPC fund, has also raised concern over late and delayed payments to NRPC fund for the past Financial Years. It has mentioned that this is resulting in loss of recurring interest.

Decision required from Forum:

Forum may suggest appropriate measures for timely payments to NRPC fund and direct J&K to clear all outstanding dues towards NRPC membership.



विजय कुमार सिंह
सदस्य सचिव

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय समिति
Northern Regional Power Committee

अर्घ शासकीय पत्र सं. NRPC/SER/310/2022-23/6744
D.O. No.

दिनांक 19 सितम्बर, 2023
Date :.....

Dear Shri Prasad Ji,

As you are aware that Northern Regional Power Committee (NRPC) was constituted vide Government of India's Resolution dated 25.05.2005 and subsequent Amendments dated 29.11.2005 and 9.05.2008. Further, as per Government of India, Ministry of Power's letter dated 23.02.2006; the activities of RPCs are to be fully financed by the constituent members (copy enclosed). For this purpose, NRPC constituent members are to pay annual contribution as decided in NRPC meetings from time to time.

In this regard, I want to invite your attention to my D.O. letter No.NRPC/SER/310/2022-23/6124 dated 21st July 2023 (Copy enclosed), wherein I conveyed the delay in payments of contribution amount by J&K (JKPDD and JKPDC). Once again, details of pending payments are mentioned below:

S. No.	Name of Constituent	Period (FY)	Outstanding amount (Rs.)	Penalty (Rs.)	Total outstanding amount (Rs.)
1	J&K State Power Development Corp. Ltd.	2014-15	11,00,000	-	11,00,000
2		2015-16	11,00,000	-	11,00,000
3		2018-19	10,00,000	-	10,00,000
4	J&K State Power Development Department	2019-20	10,00,000	-	10,00,000
5		2021-22	10,00,000	1,80,000	11,80,000
Grand Total					53,80,000

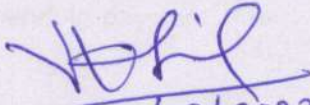
This matter was further raised in 68th NRPC Meeting held on 18.08.2023, in which J&K representative stated that as per their records, all the pending amount has already been paid except for contribution fee for year 2021-22. The J&K was requested to send all the receipts of transactions to NRPC Secretariat so that payments received from J&K can be checked again for reconciliation of the matter. However, no communication has been received in this matter till date.

NRPC Secretariat has re-checked in its records and has found no details of payments as mentioned by representative of J&K in 68th NRPC Meeting. Therefore, total amount of Rs.32,00,000/- and Rs.21,80,000/- is still pending with JKPDD and JKPDCCL respectively. If payment has already been done, J&K is again requested to send the details of payment.

I would like to mention that NRPC Secretariat has communicated with your offices many times (copy enclosed) and my predecessor Member Secretary, NRPC also written number of D.O. letters to your office in this regard (copy enclosed).

I request you to please intervene in the matter and give directions to both the departments for making payment of aforementioned contribution amount on priority for smooth functioning of NRPC Secretariat. The payment could be made through Demand Draft drawn in favour of "NRPC Fund" or through RTGS in the Bank account named "NRPC Fund" (A/c No.3083000105096078 RTGS / NEFT Code: PUNB0308300).

Yours sincerely,


19/09/2023
(Vijay Kumar Singh)

✓
Shri H. Rajesh Prasad, IAS
Principal Secretary,
Power Development Department, J&K,
Civil Secretariat, Jammu -180001

Copy to:

1. Chief Engineer (OM), Ministry of Power, New Delhi
2. Managing Director, JKPDCCL, SLDC Building, 1st Floor, Gladni Grid Station, Narvel Bala, Jammu-180004



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Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

संख्या: NRPC/SER/ 301 /2022/ 2032-2034

Dated: 23.02.2022

To,

Joint Secretary (OM),
Ministry of Power,
Room No-408,
4th Floor, Shram Shakti Bhawan,
Rafi Marg, New Delhi

विषय: Regarding long outstanding overdues of J&K State Power Development Corporation Ltd (JK PDCL) and Power Development Department (JKPDD)

References: NRPC letters to Secretary (Power) PDD, dated 07.02.2022, 29.12.2021, 26.07.2021, 11.09.2020, 28.01.2020, 31.10.2019 & 16.09.2019. NRPC letters addressed to MD, J&K State Power Development Corporation Ltd., dated 28.01.2020, 31.10.2019, 08.03.2019, 25.10.2018, 16.10.2018, 30.08.2017, 20.10.2015, 28.04.2015, 10.03.2015 & 30.12.2014.

Sir,

In accordance to the MoP communication to CEA vide letter no. A-60016/59/2005 Adm-I dated 23rd February 2006 (copy enclosed) which stipulates that

"The activities of the Regional Power Committees (RPCs) will be fully financed by the constituent Members with effect from 01.04.2006 and Central Electricity Authority will take immediate steps in this regard."

NRPC constituent members are to pay annual contribution as decided in NRPC meetings from time to-time, for reimbursing NRPC expenditure to GoI and meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson.

However, contribution from some members i.e J&K State Power Development Corporation Ltd (JK PDCL) and Power Development Department (JKPDD) is pending from a long time. NRPC is constantly following up with the officials of JKPDD & JKPDC through above referred letters. Details of pending outstanding contribution fees is shown below:

Sl. No.	Name of the constituent	Period (FY)	Outstanding amount (RS)	Late payment penalty amount (Rs)	Total outstanding amount (Rs)
1	JKPCL / JKPDD	2021-22	10,00,000/-	10,000/-	10,10,000/-
		2019-20	10,00,000/-	-	10,00,000/-
Total outstanding amount					20,10,000/-

2.	JKPCL / JKPDC	2018-19	10,00,000/-	-	10,00,000/-
		2015-16	11,00,000/-	-	11,00,000/-
		2014-15	11,00,000/-	-	11,00,000/-
Total outstanding amount					32,00,000/-

Grand total

52,10,000/-

This is for you kind information and kind assistance in the subject matter.

न. भंडारी
(नरेश भंडारी) 23/02/22
सदस्य सचिव

Encl: As above

Copy to:

1. Managing Director, JKPCL, SLDC Building, 1st Floor Gladni Grid Station, Narval Bala, Jammu-180004

2. Chief Engineer, JKPCL, SLDC Building, 1st Floor Gladni Grid Station, Narval Bala, Jammu-180004

Date: February 23, 2006.

To
The Chairperson
Central Electricity Authority,
Sewa Bhawan, R.K.Puram,
New Delhi.

(Attention: Shri Ajit Singh, Under Secretary)

Subject: Establishment of Regional Power Committees under the provisions of the Electricity Act, 2003 - matter regarding.

Sir,
I am directed to refer to your letter No. 1/2/2005-PP (CEA), dated 13.07.2005 on the subject mentioned above and to say that consequent on setting up of Regional Power Committees (RPCs) under the aegis of the Electricity Act, 2003 in place of the erstwhile Regional Electricity Boards, the matter relating to administrative and financial set up of the RPCs has been considered by the Ministry in consultation with the Central Electricity Authority and the Internal Finance Wing of the Ministry.

2. The President is pleased to declare the Member Secretaries of the Regional Power Committees (RPCs) as 'Head of Department' under SR 2(10) of the Fundamental & Supplementary Rules. They shall exercise all the powers of Heads of Department under General Financial Rules, 1963, subject to the observance of instructions and restrictions contained in the Delegation of Financial Power Rules, 1978 and such other Rules and Orders issued by the Central Government from time to time applicable to 'Head of Departments'.

3. Further, with the approval of the Competent Authority in the Ministry of Power, it has been decided that, henceforth, the functioning of the RPCs shall be regulated as per the following arrangement

- (a) Member Secretaries of the Regional Power Committees (RPCs) will be under the administrative and financial control of the Chairman of the respective Regional Power Committee (RPCs) for all matters including sanction of leave, tour etc. of the Member Secretary.

(b) The Annual confidential Report of the Member Secretaries of the Regional Power Committees (RPCs) shall be initiated by the respective Chairman of the Regional Power Committee (RPCs) and shall be reviewed by the Chairperson, Central Electricity Authority.

(c) The activities of the Regional Power Committees (RPCs) will be fully financed by the constituent Members with effect from 01.04.2006 and the Central Electricity Authority will take immediate steps in this regard.

(d) The manpower for the Secretariat of the Regional Power Committees (RPCs) shall continue to be provided by the Central Electricity Authority.

4. This issues with the concurrence of the Internal Finance Wing vide their diary No. 7657/JSFA06, dated 16.02.2006.

Yours faithfully,

Sd/-

(R.C.Arora)

Under Secretary to the Government of India

Tel No. 2371-9637

Copy to:

1. Member Secretary of All Regional Power Committees
2. Controller of Accounts, Ministry of Power.
3. Secretary, CEA (IS(Vig)), CEA
4. Director (R & R) / (S(Trans)), Ministry of Power.
5. Finance/Budget V & S Desk, Ministry of Power.

Sd/-

(R.C.Arora)

Under Secretary to the Government of India

Tel No. 2371-9637



सत्यमेव जयते

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Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

संख्या: NRPC/SER/ 301 /2022/

Dated: 15.03.2022

To,

The Principal Secretary,
Power Development Department,
J&K, Civil Secretariat, Jammu- 180001

विषय: Regarding long outstanding overdues of J&K State Power Development Corporation Ltd (JK PDCL) and Power Development Department (JKPDD)

References: NRPC letters to Secretary (Power) PDD, dated 07.02.2022, 29.12.2021, 26.07.2021, 11.09.2020, 28.01.2020, 31.10.2019 & 16.09.2019. NRPC letters addressed to MD, J&K State Power Development Corporation Ltd., dated 28.01.2020, 31.10.2019, 08.03.2019, 25.10.2018, 16.10.2018, 30.08.2017, 20.10.2015, 28.04.2015, 10.03.2015 & 30.12.2014.

Sir,

In accordance to the MoP communication to CEA vide letter no. A-60016/59/2005 Adm-I dated 23rd February 2006 (copy enclosed) which stipulates that

"The activities of the Regional Power Committees (RPCs) will be fully financed by the constituent Members with effect from 01.04.2006 and Central Electricity Authority will take immediate steps in this regard."

NRPC constituent members are to pay annual contribution as decided in NRPC meetings from time to-time, for reimbursing NRPC expenditure to Gol and meeting the expenditure for meetings at Secretariat and other expenditure as approved by Chairperson.

However, contribution from some members i.e J&K State Power Development Corporation Ltd (JK PDCL) and Power Development Department (JKPDD) is pending from a long time. NRPC is constantly following up with the officials of JKPDD & JKPDC through above referred letters. Details of pending outstanding contribution fees is shown below:

Sl. No.	Name of the constituent	Period (FY)	Outstanding amount (RS)	Late payment penalty amount (Rs)	Total outstanding amount (Rs)
1	JKPCL / JKPDD	2021-22	10,00,000/-	10,000/-	10,10,000/-
		2019-20	10,00,000/-	-	10,00,000/-
Total outstanding amount					20,10,000/-
2.	JKPCL / JKPDC	2018-19	10,00,000/-	-	10,00,000/-
		2015-16	11,00,000/-	-	11,00,000/-
		2014-15	11,00,000/-	-	11,00,000/-
Total outstanding amount					32,00,000/-
Grand total					52,10,000/-

In view of the above, you are requested to kindly intervene in the subject matter and advise the concerned officials of JKPCL to settle the long outstanding contribution amount.

न. शंडारी
(नरेश भंडारी) 15/3/22
सदस्य सचिव

Encl: As above

Copy to:

1. Joint Secretary (OM), MOP, New Delhi
2. Managing Director, JKPCL, SLDC Building, 1st Floor Gladni Grid Station, Narval Bala, Jammu-180004
3. Chief Engineer, JKPCL, SLDC Building, 1st Floor Gladni Grid Station, Narval Bala, Jammu-180004

Date: February 23, 2006

To
The Chairperson
Central Electricity Authority,
Sewa Bhawan, R.K.Puram,
New Delhi.

(Attention: Shri Ajit Singh, Under Secretary)

Subject: Establishment of Regional Power Committees under the provisions of the Electricity Act, 2003 - matter regarding.

Sir,

I am directed to refer to your letter No. 1/2/2005-PP (CEA), dated 13.07.2005 on the subject mentioned above and to say that consequent on setting up of Regional Power Committees (RPCs) under the aegis of the Electricity Act, 2003 in place of the erstwhile Regional Electricity Boards, the matter relating to administrative and financial set up of the RPCs has been considered by the Ministry in consultation with the Central Electricity Authority and the Internal Finance Wing of the Ministry.

2. The President is pleased to declare the Member Secretaries of the Regional Power Committees (RPCs) as 'Head of Department' under SR 2(10) of the Fundamental & Supplementary Rules. They shall exercise all the powers of Heads of Department under General Financial Rules, 1963, subject to the observance of instructions and restrictions contained in the Delegation of Financial Power Rules, 1978 and such other Rules and Orders issued by the Central Government from time to time applicable to 'Head of Departments'.
3. Further, with the approval of the Competent Authority in the Ministry of Power, it has been decided that, henceforth, the functioning of the RPCs shall be regulated as per the following arrangement
 - (a) Member Secretaries of the Regional Power Committees (RPCs) will be under the administrative and financial control of the Chairman of the respective Regional Power Committee (RPCs) for all matters including sanction of leave, tour etc. of the Member Secretary.

- 2-
- (b) The Annual confidential Report of the Member Secretaries of the Regional Power Committees (RPCs) shall be initiated by the respective Chairman of the Regional Power Committee (RPCs) and shall be reviewed by the Chairperson, Central Electricity Authority.
- (c) The activities of the Regional Power Committees (RPCs) will be fully financed by the constituent Members with effect from 01.04.2006 and the Central Electricity Authority will take immediate steps in this regard.
- (d) The manpower for the Secretariat of the Regional Power Committees (RPCs) shall continue to be provided by the Central Electricity Authority.

4. This issues with the concurrence of the Internal Finance Wing vide their diary No. 7657/JSFA06, dated 16.02.2006.

Yours faithfully,

Sd/-

(R.C.Arora)

Under Secretary to the Government of India

Tel No. 2371-9637

Copy to:

1. Member Secretary of All Regional Power Committees
2. Controller of Accounts, Ministry of Power.
3. Secretary, CEA/US(Vig),CEA
4. Director (R & R)/ US(Trans),Ministry of Power.
5. Finance/Budget/ V & S Desk, Ministry of Power.

Sd/-

(R.C.Arora)

Under Secretary to the Government of India

Tel No. 2371-9637

**REMINDER-6**

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

No. NRPC /AS/NRPC Fund/2021-22/1419-20

Date:07.02.2022

To,

Secretary (Power),
Power Development Department,
Civil Secretariat Srinagar
0194-2506053/2506198

Subject: Pending Contribution towards NRPC fund for the years 2019-20 and 2021-22.

- References: (i) Reminder-5 Letter no. NRPC/AS/NRPC Fund/2021-22/11926 dated 29.12.2021
(ii) Reminder-4 Letter no. NRPC/AS/NRPC Fund/2021-22/6940 dated 26.07.2021
(iii) Reminder-3 Letter no. NRPC/AS/NRPC Fund/2020-21/9010-9012 dated 11.09.2020
(iv) Reminder-2 Letter no. NRPC/AS/NRPC Fund/2019-20/837 dated 28.01.2020
(v) Reminder-1 Letter no. NRPC/AS/NRPC Fund/2019-20/13367 dated 31.10.2019
(vi) Letter no. NRPC/AS/NRPC Fund/2019-20/10396 dated 16.09.2019

Sir,

This is in continuation to NRPC's earlier communications as referred above. Copies of the same are also enclosed for ready reference. Despite our regular follow ups, NRPC Fund contribution of Rs. 10 Lakh for the previous year (FY 2019-20) and Rs.10.2 Lakh for current F.Y. 2021-22 is still awaited from PDD.

It was intimated by the reminder letter No. 5, that in case of late payment beyond 31/12/2021, for the FY 2021-22, simple interest @ 1% per month shall also be levied, as per decision taken in 49th NRPC meeting. Accordingly, the penalty amount for late payment beyond 31/12/2021 works out Rs.20,000/- Therefore, due NRPC contribution for FY 2021-22 becomes Rs 10.20 lakh.

Power Development Department is requested to make payments of Rs. 10 Lakh for the previous year (FY 2019-20) and Rs.10.20 Lakh for current F.Y. 2021-22 before 28.02.2022 positively to avoid further levy of penalty charges (for FY 2021-22) as per the decision taken in 49th NRPC meeting.

In view of the above, it is again requested to expedite the process for clearance of aforesaid contribution amount. The contribution can be made through Demand Draft, drawn in favour of "NRPC Fund" and may be forwarded to us. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 308300 0105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300

Encl: As above

Dilpreet 11/2/2022

(दिलप्रीत कौर)

(Dilpreet Kaur)

नोडल ऑफिसर-एन आर पी सी फण्ड

Nodal Officer-NRPC Fund

Copy to:

Chairman, NRPC



सत्यमेव जयते

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Government of India

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Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

REMINDER-5

No. NRPC /AS/NRPC Fund/2021-22/11925

Date:29.12.2021

To,

Sh. Rohit Kansal (IAS)
Secretary Power,
Power Development Department,
Civil Secretariat Srinagar
0194-2506053/2506198

Subject: Pending Contribution towards NRPC fund for the years 2019-20 and 2021-22
– reg.

- References: (i) Reminder-4 Letter no. NRPC/AS/NRPC Fund/2021-22/6940 dated 26.07.2021
(ii) Reminder-3 Letter no. NRPC/AS/NRPC Fund/2020-21/9010-9012 dated 11.09.2020
(iii) Reminder-2 Letter no. NRPC/AS/NRPC Fund/2019-20/837 dated 28.01.2020
(iv) Reminder-1 Letter no. NRPC/AS/NRPC Fund/2019-20/13367 dated 31.10.2019
(v) Letter no. NRPC/AS/NRPC Fund/2019-20/10396dated 16.09.2019

Sir,

This is in continuation to NRPC's earlier communications as referred above. Copies of the same are also enclosed for ready reference. Despite our regular follow ups, the contribution amount of Rs. 10 Lakh for the previous year (FY 2019-20) and Rs.10 Lakh for F.Y. 2021-22 from your organisation is still awaited.

In case of late payment beyond 31/12/2021, for the FY 2021-22, simple interest @ 1% per month shell also be levied, as per decision taken in 49th NRPC meeting. Accordingly, Power Development Department is requested to make payments before 31.12.2021 positively.

In view of the above, it is again requested to expedite the process for clearance of aforesaid contribution amount. The contribution can be made through Demand Draft, drawn in favour of "NRPC Fund" and may be forwarded to us. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 308300 0105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300

Encl: As above

Dilpreet 29/12/2021
(दिलप्रीत कौर)

(Dilpreet Kaur)

नोडल ऑफिसर-एन आर पी सी फण्ड

Nodal Officer-NRPC Fund



सत्यमेव जयते

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Ministry of Power

उत्तर क्षेत्रीय विद्युत समिति

Northern Regional Power Committee

REMINDER-4

No. NRPC /AS/NRPC Fund/2021-22 / 6940

Date: 26.07.2021

To,

Sh. Rohit Kansal (IAS)
Secretary Power,
Power Development Department,
Civil Secretariat Srinagar
0194-2506053/2506198

Subject: Pending Contribution towards NRPC fund for the years 2019-20 – reg.

- References:
- (i) Reminder-3 Letter no. NRPC/AS/NRPC Fund/2020-21/9010-9012 dated 11.09.2020
 - (ii) Reminder-2 Letter no. NRPC/AS/NRPC Fund/2019-20/837 dated 28.01.2020
 - (ii) Reminder-1 Letter no. NRPC/AS/NRPC Fund/2019-20/13367 dated 31.10.2019
 - (iii) Letter no. NRPC/AS/NRPC Fund/2019-20/10396 dated 16.09.2019

Sir,

This is in continuation to NRPC's earlier communications as referred above. Copies of the same are also enclosed for ready reference. Despite our regular follow up, the contribution amount of Rs. 10 lakh for the year 2019-20 from your organisation is still awaited.

In view of the above, it is again requested to expedite the process for clearance of aforesaid contribution amount. The contribution can be made through Demand Draft, drawn in favour of "NRPC Fund" and may be forwarded to us. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 308300 0105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300.

Encl: As above

(वन्दिता शर्मा)

VANDITA SHARMA
Nodal Officer
N.R.P.C., Fund

(Vandita Sharma)

नोडल ऑफिसर-एन आर पी सी फण्ड

Nodal Officer-NRPC Fund



भारत सरकार
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Ministry of Power
उत्तर क्षेत्रीय विद्युत समिति
Northern Regional Power Committee

REMINDER

No NRPC/AS/NRPC Fund/2020-21 / 9010-9012

Dated: 11 09.2020

To:

Sh. Rohit Kansal (IAS)
Principal Secretary (Power),
New Secretariat Srinagar, Govt. of UT of J&K
0194-2506053/2506198 <md@jkspdcil.com>

Subject: Pending Contribution towards NRPC fund pertaining to PDD, J&K and J&K PDCL – reg.

- References. (i) Reminder letters of even no. dated 17.01.2017, 14.06.2018, 16.10.2018, 08.03.2019, 16.09.2019, 31.10.2019 and 28.01.2020 i.r.o. PDD J&K (copies enclosed as Annex-I)
- (ii) Reminder letters of even no. dated 01.01.2015, 10.03.2015, 29.04.2015, 20.10.2015, 30.08.2017, 16.10.2018, 25.10.2018, 08.03.2019, 16.09.2019, 30.10.2019 and 28.01.2020 i.r.o. J&K PDCL (copies enclosed as Annex-II)


Sir

This is in continuation to NRPC's earlier communications as referred above. Copies of the same are also enclosed for ready reference. Despite our regular follow up, the contribution amount of Rs. 27 lakh for the years 2016-17, 2018-19 and 2019-20 pertaining to PDD and Rs. 42 lakh for the years 2014-15, 2015-16, 2018-19 and 2019-20 pertaining to PDCL are still awaited. Further, NRPC in its 48th meeting decided a contribution amount of Rs. 6 lakh for each constituent for the year 2020-21. Accordingly, a total pending contribution including current FY for PDD and PDCL are Rs. 33 lakh and Rs. 48 lakh respectively.

Furthermore, in the recently held special meeting on 28.07.2020 to deliberate on issues related to UTs of J&K and Ladakh, the matter regarding aforesaid pending contribution was also discussed wherein J&K representative assured that all the pending contributions would be disbursed shortly.

In view of the above, it is again requested to expedite the process for clearance of aforesaid contribution amount. The contribution can be made through Demand Draft drawn in favour of "NRPC Fund" and may be forwarded to us. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 308300 0105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300

Encl. As above


(Naresh Bhandari)
सदस्य सचिव
Member Secretary

11/09/2020

Copy to: Chief Engineer (Trading), JKPCL, PDD Complex, Remina, Srinagar



नरेश भण्डारी
सदस्य सचिव

भारत सरकार
विद्युत मंत्रालय
उत्तर क्षेत्रीय विद्युत समिति
18-ए, शहीद जीत सिंह मार्ग,
कटवारिया सराय, नई दिल्ली -110016
दूरभाष . 26511211, 26513265

REMINDER

D.O NO. NRPC/AS/NRPCFUND/2019-20 (837)

Dated: 28/01/2020

Sh. M. Raju,


Please refer to my D.O. letter of even number dated 31st October, 2019 regarding payment of membership fee to the Northern Regional Power Committee (NRPC) by the constituent members of NRPC for the financial years 2019-20, 2018-19 and 2016-17 for meeting the annual expenditure of NRPC establishment.

2. In this regard I would like to mention that previously the amount of annual membership fee to be paid to the NRPC by each constituent member of the NRPC had been fixed as Rs.10 lakh. During the 45th NRPC meeting held recently on 08.06.2019, the amount of the annual membership fees the financial year 2019-20 also was decided to be fixed as Rs.10 Lakh for each constituent. NRPC Secretariat has already requested you vide its letters of even number dated 31.10.2019 for payment of the said contribution amounting to Rs.27 Lakh for the above cited financial years on urgent basis. The matter for payment of the above contribution has also discussed during the last few RPC meetings when Members of the Committee agreed to expedite the said payment. However, in spite of that the contribution from your organization in respect of the above cited financial years is still awaited.

3. Therefore, I shall be grateful if you could kindly intervene and arrange to expedite the amount of the aforesaid contribution amount of Rs.27 Lakh for smooth running of the NRPC Secretariat. The payment could be made either through Demand Draft, drawn in favour of "NRPC Fund" or through RTGS in the Bank account named "NRPC Fund" (A/c No. 3083000105096078 RTGS / NEFT Code: PUNB0308300).

Regards,

Yours Sincerely,


(Naresh Bhandari) 28.1.2020

Encl: As Above

To,
Sh. M. Raju,
Secretary Power,
Power Development Department,
Civil Secretariat,
SRINAGAR (J&K)



नरेश भण्डारी
सदस्य सचिव

भारत सरकार
विद्युत मंत्रालय
उत्तर क्षेत्रीय विद्युत समिति
18-ए, शहीद जीत सिंह मार्ग,
कटवारिया सराय, नई दिल्ली -110016
दूरभाष . 26511211, 26513265

D.O NO. NRPC/AS/NRPCFUND/2019-20/13367

Dated: 31/10/2019

Sh. Hirdesh Kumar,

The matter relates to pending payment of membership fee of the Northern Regional Power Committee (NRPC) for three years i.e. 2019-20, 2018-19 and 2016-17 for meeting the annual expenditure of NRPC establishment. PDD has not paid NRPC membership fee of Rs 17 lakh for the year 2018-19 and 2016-17. During 45th NRPC meeting held on 08.06.2019, the contribution amount was decided as Rs.10 Lakh for 2019-20. Accordingly, PDD is to make payment of Rs 27 lakh – Rs 10 lakh each for 2018-19, 2019-20 and Rs 7 lakh for 2016-17. In this regard, I would like to convey that NRPC Secretariat has communicated with your office. the copies of communication are enclosed.

I seek your kind intervention, for clearance of aforesaid contribution amount. on an early basis. The payment could be made through Demand Draft, drawn in favour of "NRPC Fund". The contribution can also be made through RTGS in the Bank account named "NRPC Fund" (A/c No. 3083000105096078 RTGS / NEFT Code: PUNB0308300).

With Regards,

Encl: As above

Yours Sincerely,

(Naresh Bhandari)

To,
Sh. Hirdesh Kumar, IAS
Secretary Power,
Power Development Department,
Civil Secretariat,
SRINAGAR (J&K)



सत्यमेव जयते

भारत सरकार

उत्तर क्षेत्रीय विद्युत समिति

18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,

नई दिल्ली- 110016

Government of India

Northern Regional Power Committee

18-A, S. Jeet Singh Marg, Katwaria Sarai,

New Delhi-110016

No. NRPC /AS/NRPC Fund/2019-20/10396

Date: 16.09.2019

To,

Principal Secretary to Govt.,
Power Development Department,
Civil Secretariat,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2019-20 by the Constituents-
regarding.

Sir,

This has reference to the minutes of 45th meeting of NRPC held on 08.06.2019 at Gangtok, Sikkim wherein members agreed to contribute a sum of Rs. 10.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for F.Y. 2019-20. Extracts of minutes of 45th meeting of NRPC is enclosed for ready reference.

It is, therefore, requested that the contribution of Rs. 10.0 lakh for the year 2019-20 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code are PUNB0308300.

Encl: As above

Yours faithfully,

Nodal Officer, NRPC



नरेश भण्डारी
सदस्य सचिव

भारत सरकार
विद्युत मंत्रालय
उत्तर क्षेत्रीय विद्युत समिति
18-ए, शहीद जीत सिंह मार्ग,
कटवारिया सराय, नई दिल्ली -110016
दूरभाष . 26511211, 26513265

D.O NO. NRPC/AS/NRPCFUND/2019-20/13364

Dated: 31 /10/2019

Sh. Hirdesh Kumar,

The matter relates to pending payment of membership fee of the Northern Regional Power Committee (NRPC) for four years i.e. 2019-20, 2018-19, 2015-16 and 2014-15 for meeting the annual expenditure of NRPC establishment. PDCL has not paid NRPC membership fee of Rs 32 lakh for the year 2018-19, 2015-16 and 2014-15. During 45th NRPC meeting held on 08.06.2019, the contribution amount was decided as Rs.10 Lakh for 2019-20. Accordingly, PDCL is to make payment of Rs 42 lakh – Rs 10 lakh each for 2018-19, 2019-20 and Rs 11 lakh each for 2015-16, 2014-15. In this regard, I would like to convey that NRPC Secretariat has communicated with your office, the copies of communication are enclosed.

I seek your kind intervention, for clearance of aforesaid contribution amount, on an early basis. The payment could be made through Demand Draft, drawn in favour of "NRPC Fund". The contribution can also be made through RTGS in the Bank account named "NRPC Fund" (A/c No. 3083000105096078 RTGS / NEFT Code: PUNB0308300).

With Regards,

Yours Sincerely,

(Naresh Bhandari)

31/10

Encl: As above

To,
Sh. Hirdesh Kumar, IAS
Secretary Power,
J & K State Power Development Corp. Ltd.,
Shaw Inn, the Boulevard,
SRINAGAR-190009 (J&K)



नरेश भण्डारी
सदस्य सचिव

भारत सरकार
विद्युत मंत्रालय
उत्तर क्षेत्रीय विद्युत समिति
18-ए, शहीद जीत सिंह मार्ग,
कटवारिया सराय, नई दिल्ली -110016
दूरभाष . 26511211, 26513265

REMINDER

D.O NO. NRPC/AS/NRPCFUND/2019-20 | 836

Dated: 28/01/2020

Sh. M. Raju,


Please refer to my D.O. letter of even number dated 31st October, 2019 regarding payment of membership fee to the Northern Regional Power Committee (NRPC) by the constituent members of NRPC for the financial years 2019-20, 2018-19, 2015-16 and 2014-15 for meeting the annual expenditure of NRPC establishment.

2. In this regard I would like to mention that previously the amount of annual membership fee to be paid to the NRPC by each constituent member of the NRPC had been fixed as Rs.10 lakh. During the 45th NRPC meeting held recently on 08.06.2019, the amount of the annual membership fees the financial year 2019-20 also was decided to be fixed as Rs.10 Lakh for each constituent. NRPC Secretariat has already requested you vide its letters of even number dated 31.10.2019 for payment of the said contribution amounting to Rs.42 Lakh for the above cited financial years on urgent basis. The matter for payment of the above contribution has also discussed during the last few RPC meetings when Members of the Committee agreed to expedite the said payment. However, in spite of that the contribution from your organization in respect of the above cited financial years is still awaited.

3. Therefore, I shall be grateful if you could kindly intervene and arrange to expedite the amount of the aforesaid contribution amount of Rs.42 Lakh for smooth running of the NRPC Secretariat. The payment could be made either through Demand Draft, drawn in favour of "NRPC Fund" or through RTGS in the Bank account named "NRPC Fund" (A/c No. 3083000105096078 RTGS / NEFT Code: PUNB0308300).

Regards,

Yours Sincerely,


(Naresh Bhandari) 28.1.2020

Encl: As Above

To,
Sh. M. Raju,
Secretary Power,
J & K State Power Development Corp. Ltd.,
Shaw Inn, the Boulevard,
SRINAGAR-190009 (J&K)



सत्यमेव जयते

भारत सरकार

उत्तर क्षेत्रीय विद्युत समिति

18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,

नई दिल्ली- 110016

Government of India

Northern Regional Power Committee

18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

Phone: 26868681

Fax: 26865206

E- mail: seo-nrpc@nic.in

Website: www.nrpc.gov.in

No. NRPC /AS/NRPC Fund/2018-19/435

Date: 08.03.2019

To,

Managing Director,
J & K State Power Development Corp. Ltd.,
Shaw Inn, the Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2018-19 by the Constituents-regarding.

Sir,

Please refer to our letter of even number dated 16.10.2018 regarding contribution of Rs. 10.0 Lakh for contribution towards annual expenditure of NRPC Secretariat for financial year 2018-19.

It may be mentioned that during 42nd NRPC meeting of NRPC held on 28.06.2018 at Parwanoo, Solan(HP) wherein members agreed to contribute a sum of Rs. 10.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for F.Y. 2018-19. The contribution from your organisation is still awaited.

It is, therefore, requested that the contribution of Rs. 10.0 lakh for the year 2018-19 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code are PUNB0308300.

Encl: As above

Yours faithfully,

Assistant Secretary



सत्यमेव जयते
भारत सरकार

उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

Phone: 26868681
Fax: 26865206
E- mail: seo-nrpc@nic.in
Website: www.nrpc.gov.in

No. NRPC /AS/NRPC Fund/2018-19/ 12192

Date: 16.10.2018

To,

Managing Director,
J & K State Power Development Corp. Ltd.,
Shaw Inn, the Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2018-19 by the Constituents-
regarding.

Sir,

This has reference to the minutes of 42nd meeting of NRPC held on 28.06.2018 at Parwanoo, Solan(HP) wherein members agreed to contribute a sum of Rs. 10.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for F.Y. 2018-19. Extracts of minutes of 42nd meeting of NRPC is enclosed for ready reference.

It is, therefore, requested that the contribution of Rs. 10.0 lakh for the year 2018-19 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code are PUNB0308300.

Encl: As above

Yours faithfully,

Assistant Secretary

Phone: 26868681
Fax: 26865206
E-mail: nrpccomml@yahoo.com
Website: www.nrpc.gov.in

भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

No. NRPC /AS/NRPC Fund/2015-16/1777-80

Date: 30.08.2017

To,

Managing Director,
J & K State Power Development Corp. Ltd.,
Shaw Inn, The Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2015-16 by the Constituents-regarding.


Sir,

Please refer to our letter of even number dated 27.08.2015, 09.12.2015 & 08.02.2016 regarding contribution of Rs. 11.0 Lakh for contribution towards annual expenditure of NRPC Secretariat for financial year 2015-16

It may be mentioned that during the 35th NRPC meeting held on 09.07.2015 at Shimla, members agreed to contribute Rs. 11.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for financial year 2015-16. The contribution from your organisation is still awaited.

It is, therefore, requested that the contribution of Rs. 11.0 lakh for the year 2015-16 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300.

Yours faithfully,


Assistant Secretary



सत्यमेव जयते

भारत सरकार

उत्तर क्षेत्रीय विद्युत समिति

18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,

नई दिल्ली- 110016

Government of India

Northern Regional Power Committee

18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

Phone: 26868681
Fax: 26865206
E-mail: seo-nrpc@nic.in
Website: www.nrpc.gov.in

No. NRPC/AS/NRPC Fund/2018-19/ 12316

Date: 25.10.2018

To,

Managing Director,
J & K State Power Development Corp. Ltd.
Hotel Shaw Inn, The Boulevard,
SRINAGAR-190009 (J&K)

Subject: Reimbursement of NRPC establishment expenditure for FY 2014-15 by J & K State Power Development Corporation Limited.

Sir,

In the 30th NRPC meeting held on 28.02.2014 at Agra, members agreed to contribute Rs. 11.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for financial year 2014-15. Despite repeated requests and regular follow up in various NRPC meetings, the contribution from J & K State Power Development Corp. Ltd. is pending till date.

NRPC establishment expenditure is met against the NRPC allocated budget and the same is reimbursed to consolidated fund of India after collection from the NRPC constituents. There is serious objection from Audit on non recovery of dues from some of the NRPC constituents.

It is, therefore, requested that J & K State Power Development Corp. Ltd. may be directed to make the contribution of Rs. 11.0 lakh for the year 2014-15 in the form of Demand Draft in favour of "NRPC Fund" or deposit in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us [The RTGS / NEFT Code is PUNB0308300] urgently.

Yours faithfully,


Assistant Secretary

Phone: 26868681
Fax: 26865206
E-mail: nrpccomml@yahoo.com
Website: www.nrpc.gov.in

भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

No. NRPC/AS/NRPC Fund/2015-16/ 1093-99

Date: 20.10.2015

To,

Managing Director,
J & K State Power Development Corp. Ltd.
Hotel Shaw Inn, The Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2014-15 by the Constituents-
regarding.

Sir,

Please refer to our letter of even number dated 09.06.2014, 30.12.2014, 10.03.2015 & 28.04.2015 regarding contribution of Rs. 11.0 Lakh for contribution towards annual expenditure of NRPC Secretariat for financial year 2014-15

It may be mentioned that during the 30th NRPC meeting held on 28.02.2014 at Agra, members agreed to contribute Rs. 11.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for financial year 2014-15. The contribution from your organisation is awaited.

It is, therefore, requested that the contribution of Rs. 11.0 lakh for the year 2014-15 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300.

Yours faithfully,


Assistant Secretary

Phone: 26868681
Fax: 26865206
E-mail: nrpccomm1@yahoo.com
Website: www.nrpc.gov.in

भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

No. NRPC/AS/NRPC Fund/2015-16/720-31

Date: 28.04.2015
29

To,

Managing Director,
J & K State Power Development Corp. Ltd.
Hotel Shaw Inn, The Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2014-15 by the Constituents-
regarding.

Sir,

Please refer to our letter of even number dated 09.06.2014, 30.12.2014 & 10.03.2015 regarding contribution of Rs. 11.0 Lakh for contribution towards annual expenditure of NRPC Secretariat for financial year 2014-15

It may be mentioned that during the 30th NRPC meeting held on 28.02.2014 at Agra, members agreed to contribute Rs. 11.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for financial year 2014-15. The contribution from your organisation is awaited.

It is, therefore, requested that the contribution of Rs. 11.0 lakh for the year 2014-15 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300.

Yours faithfully,


Assistant Secretary

Phone: 26868681
Fax: 26865206
E- mail: nrpccomml@yahoo .com
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भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

No. NRPC /AS/NRPC Fund/2014-15/477-90

Date: 10.03.2015

To,

Managing Director,
J & K State Power Development Corp. Ltd.
Hotel Shaw Inn, The Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2014-15 by the Constituents-
regarding.

Sir,

Please refer to our letter of even number dated 09.06.2014 & 30.12.2014 regarding contribution of Rs. 11.0 Lakh for contribution towards annual expenditure of NRPC Secretariat for financial year 2014-15

It may be mentioned that during the 30th NRPC meeting held on 28.02.2014 at Agra, members agreed to contribute Rs. 11.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for financial year 2014-15. The contribution from your organisation is awaited.

It is, therefore, requested that the contribution of Rs. 11.0 lakh for the year 2014-15 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300.

Yours faithfully,


10.03.15
Assistant Secretary

Phone: 26868681
Fax: 26865206
E-mail: nrpccomml@yahoo.com
Website: www.nrpc.gov.in

भारत सरकार
उत्तर क्षेत्रीय विद्युत समिति
18-ए, श.जीत सिंह मार्ग, कटवारिया सराय,
नई दिल्ली- 110016
Government of India
Northern Regional Power Committee
18-A, S. Jeet Singh Marg, Katwaria Sarai,
New Delhi-110016

No. NRPC /AS/NRPC Fund/2014-15/01-15

Date: 30.12.2014
01.01.2015

To,

Managing Director,
J & K State Power Development Corp. Ltd.
Hotel Shaw Inn, The Boulevard,
SRINAGAR-190009 (J&K)

Subject: Contribution towards NRPC Fund for the year 2014-15 by the Constituents-
regarding.

Sir,

Please refer to our letter of even number dated 09.06.2014 regarding contribution of Rs. 11.0 Lakh for contribution towards annual expenditure of NRPC Secretariat for financial year 2014-15

It may be mentioned that during the 30th NRPC meeting held on 28.02.2014 at Agra, members agreed to contribute Rs. 11.0 Lakh per member as contribution towards annual expenditure of NRPC secretariat for financial year 2014-15. The contribution from your organisation is awaited.

It is, therefore, requested that the contribution of Rs. 11.0 lakh for the year 2014-15 in the form of Demand Draft in favour of "NRPC Fund" may be forwarded to us urgently. The contribution can also be deposited in any CBS branch of Punjab National Bank or through RTGS in the account named "NRPC Fund" (A/c No. 3083000105096078) under intimation to us. The RTGS / NEFT Code is PUNB0308300.

Yours faithfully,


Assistant Secretary

NRPC Fund Contribution F.Y. 2022-23				To be made till 31.03.2023		
Sr. No.	Name of the Constitutents Member	Date of receipt in NRPC Fund	Contribution Amount	Penalty @ 1%	Amount Received	Balance
1	HPPTCL Shimla	04-04-2023	1000000	10000	1000000	10000
2	UT Chandigarh	10-04-2023	1000000	10000	1000000	10000
3	DTL	10-04-2023	1000000	10000	1000000	10000
4	HPGCL	13-04-2023	1000000	10000	1000000	10000
5	Adani Power Rajasthan	15-04-2023	1000000	10000	1000000	10000
6	Aravali Power Co.P.Ltd.	20-04-2023	1000000	10000	1000000	10000
7	NPCIL	26-04-2023	1000000	10000	1010000	0
8	NHPC Ltd.	26-04-2023	1000000	10000	1010000	0
9	UPPTCL	27-04-2023	1000000	10000	1000000	10000
10	Mahindra Susten Pvt. Ltd.	20-05-2023	1000000	20000	1020000	0
11	JKPDC	13-05-2023	1000000	20000	1010000	10000
12	HPSEB	30-05-2023	1000000	20000	1010000	10000
13	Ajmer Vidyut Vitran Nigam Ltd.	20-06-2023	1000000	30000	1000000	30000
14	Dakshinanchal	08-08-2023	1000000	50000	1050000	0
				230000		120000

NRPC Fund Contribution F.Y. 2021-22

To be made till 14.11.2021

Sr. No.	Name of the Constitutents Member	Date of receipt in NRPC Fund	Contribution Amount	Penalty @ 1%	Amount Received	Balance
1	UPRVUNL	17-11-2021	1000000	10000	1000000	10000
2	JSW Hydro	17-11-2021	1000000	10000	1000000	10000
3	CTU	23-11-2021	1000000	10000	1010000	0
4	THDC	25-11-2021	1000000	10000	1000000	10000
5	HVPNL	29-11-2021	1000000	10000	1000000	10000
6	RVUNL	08-12-2021	1000000	20000	1000000	20000
7	PITCUL	14-12-2021	1000000	20000	1010000	10000
8	PGCIL	28-12-2021	1000000	20000	1000000	20000
9	UPCL	28-12-2021	1000000	20000	1010000	10000
10	IPGCL	29-12-2021	1000000	20000	1000000	20000
11	HPSEB	21-12-2021	1000000	20000	1010000	10000
12	DTL	10-01-2022	1000000	30000	1000000	30000
13	DDL Tata Power	24-01-2022	1000000	30000	1000000	30000
14	Jaipur VVNL	25-01-2022	1000000	30000	1000000	30000
15	Dakshin Haryana Bijli	31-01-2022	1000000	30000	1000000	30000
16	PSPCL	31-01-2022	1000000	30000	1000000	30000
17	Greenko Group	31-01-2022	1000000	30000	1010000	20000
18	HPPTCL	01-02-2022	1000000	40000	1000000	40000
19	J&K State Power Development	02-02-2022	1000000	40000	1000000	40000
20	HPGCL	03-02-2022	1000000	40000	1000000	40000
21	MVVNL	05-02-2022	1000000	40000	1000000	40000

510000

460000

NRPC Members for FY 2024-25			
S. No.	NRPC Member	Category	Remarks
1	Member (GO&D), CEA	Member (Grid Operation & Distribution), Central Electricity Authority (CEA)	-
2	Member (PS), CEA	Nodal Agency appointed by the Government of India for coordinating cross-border power transactions	-
3	CTUIL	Central Transmission Utility	-
4	PGCIL	Central Government owned Transmission Company	-
5	NLDC	National Load Despatch Centre	-
6	NRLDC	Northern Regional Load Despatch Centre	-
7	NTPC	Central Generating Company	-
8	BBMB		-
9	THDC		-
10	SJVN		-
11	NHPC		-
12	NPCCIL		-
13	Delhi SLDC	State Load Despatch Centre	-
14	Haryana SLDC		-
15	Rajasthan SLDC		-
16	Uttar Pradesh SLDC		-
17	Uttarakhand SLDC		-
18	Punjab SLDC		-
19	Himachal Pradesh SLDC	State Transmission Utility	-
20	DTL		-
21	HVPNL		-
22	RRVNL		-
23	UPPTCL		-
24	PTCUL		-
25	PSTCL	State Generating Company	-
26	HPPTCL		-
27	IPGCL		-
28	HPGCL		-
29	RRVUNL		-
30	UPRVUNL		-
31	UJVNL	State Generating Company & State owned Distribution Company	-
32	HPPCL		-
33	PSPCL	State owned Distribution Company (alphabetical rotational basis/nominated by state govt.)	-
34	UHBVN		There are only 2 STATE DISCOMs DHBVN & UHBVN
35	Jodhpur Vidyut Vitran Nigam Ltd.		Jodhpur Vidyut Vitran Nigam Ltd. Comes after Jaipur Vidyut Vitran Nigam Ltd. as per alphabetic rotation. There are 3 state DISCOMs Ajmer, Jaipur & Jodhpur.
36	Paschimanchal Vidyut Vitaran Nigam Ltd.		Paschimanchal Vidyut Vitaran Nigam Ltd. comes after MVVNL as per alphabetical rotation. There are 4 state DISCOMs: Dakshinanchal, Madhyanchal, Paschimanchal, Purvanchal.
37	UPCL	UPCL is sole state DISCOM	-
38	HPSEB		HPSEB is sole state DISCOM
39	Prayagraj Power Generation Co. Ltd.	IPP having more than 1000 MW installed capacity	-
40	Aravali Power Company Pvt. Ltd		-
41	Apraava Energy Private Limited		-
42	Talwandi Sabo Power Ltd.		-
43	Nabha Power Limited		-
44	Lanco Anpara Power Ltd		-
45	Rosa Power Supply Company Ltd		-
46	Lalitpur Power Generation Company Ltd		-
47	MEJA Urja Nigam Ltd.		-
48	Adani Power Rajasthan Limited		-
49	JSW Energy Ltd. (KWHEP)	-	
50	TATA POWER RENEWABLE	IPP having less than 1000 MW installed capacity (alphabetical rotational basis)	TATA POWER RENEWABLE comes after RENEW
51	UT of J&K	From each of the Union Territories in the region, a representative nominated by the administration of the Union Territory concerned out of the entities engaged in generation/ transmission/ distribution of electricity in the Union Territory.	JKPCL has been considered.
52	UT of Ladakh		LPPD has been considered.
53	UT of Chandigarh		Electricity Wing of Engineering Department, Chandigarh Administration
54	NPCL	Private Distribution Company in region (alphabetical rotational basis)	NPCL comes after BYPL. There are 4 private DISCOMs in NR i.e. BRPL, BYPL, NPCL and TPDDL.
55	Fatehgarh Bhadla Transmission Limited	Private transmission licensee (nominated by central govt.)	As nominated by CEA on alphabetical rotational basis.
56	NTPC Vidyut Vyapar Nigam Ltd.	Electricity Trader (nominated by central govt.)	As nominated by CEA.

F.No. 25(7)/E.Coord./2017
Ministry of Finance
Department of Expenditure
E.Coord Section

North Block, New Delhi
Dated: 22nd December, 2018

OFFICE MEMORANDUM

Subject: Switch over from petrol and diesel vehicles to electrical vehicles for hired vehicles in Secretariats/Attached offices of Ministries and Departments of Government of India located in Delhi

Keeping in view the policy thrust of the Government that by 2030, 30% of the total vehicle fleet in the country will be electrical for the reason of its being environmental friendly, cost effective and substitute for fossil fuels, Ministries/Departments are encouraged to switch over to electrical mobility from petrol and diesel cars in respect of vehicles taken on lease/hire for official purpose.

2. Accordingly, all the Ministries/Departments may aim at replacing the petrol and diesel cars hired by Ministries/Departments in their Secretariats and attached offices (located in Delhi) through contractors by electric cars for mobility in Delhi. In cases where existing contracts for hiring of petrol/diesel vehicles have come to an end, Ministries/Departments may consider fresh contract for hiring electric vehicles.

3. To facilitate Ministries/Departments a framework of the draft agreement which the Ministries/Department may adopt for entering into contract for lease/hiring of electric vehicles is annexed. Ministries/Departments are at liberty to amend the conditions of the draft agreement as per the type of lease/hiring (Wet or Dry) entered into with the service provider.



(Annie George Mathew)

Joint Secretary to the Government of India

To:

- 1) All Ministries/Departments of the Government of India
- 2) Office of Comptroller and Auditor General of India

Template of the conditions of Agreement for hiring of electric vehicles

This AGREEMENT for lease/hiring of Electric Cars (hereinafter referred to as AGREEMENT) is executed on _____ at _____ by and between:

(NAME OF SERVICE PROVIDER)

and

(CLIENT)

Now it agreed between the parties as follows

DEFINITIONS:

- 1.
- 2.
- 3.
- 4.

WET LEASE OF ELECTRIC CARS AND CONDITIONS THEREOF

1. Wet Lease means provision of E-cars/E-vehicles with uniformed chauffeur, without fuel costs.
2. The Ministry/Department (CLIENT) may take on wet lease electric vehicles hereafter referred to as e-cars/e-vehicles on a wet lease from (NAME OF SERVICE PROVIDER) after entering into a formal lease agreement with (NAME OF SERVICE PROVIDER). The agreement may contain a clause for decrease or increase the number of such vehicles depending on the requirement of the client.
3. The leased E-cars would be privately registered in the name of the CLIENT with hypothecation to (NAME OF SERVICE PROVIDER) in accordance with the provisions of section 51 of the Motor vehicles Act, 1988 and the ownership of these shall continue to remain with (NAME OF SERVICE PROVIDER) and CLIENT shall have no right on these vehicles in any manner except as a lessee within framework of the Lease Agreement.

4. The compliance of all legal provisions/statutory requirements in respect of leased e-cars shall be the responsibility of the (NAME OF SERVICE PROVIDER) which shall also indemnify the CLIENT against any damages/ claims arising out of the agreement or by virtue of the registration of vehicles in the name of the CLIENT.

OBLIGATION OF (NAME OF SERVICE PROVIDER)

1. (NAME OF SERVICE PROVIDER) shall provide as many number of E-cars for the use of CLIENT, as required by the client, on 24X7 basis along with clean interiors, proper upholstery and as many uniformed, well mannered, courteous and polite chauffeurs who are punctual, equipped with live mobile and well acquainted with the roads of Delhi/NCR area. Standby vehicles shall be provided by (NAME OF SERVICE PROVIDER) during periodical maintenance of the hired vehicles. Additional accessories/utilities may be as per the requirement of the client.
2. (NAME OF SERVICE PROVIDER) shall ensure that drivers of vehicles taken on wet lease are of good character, duly verified by Delhi Police from security angle and have a valid driving license.
3. (NAME OF SERVICE PROVIDER) shall ensure that the issues relating to leave/rest of drivers are taken care of as per statutory rules/regulations.
4. The cost of comprehensive insurance of hired vehicles would be borne by (NAME OF SERVICE PROVIDER) for the entire period of the contract.
5. (NAME OF SERVICE PROVIDER) shall provide a customer service number active for 12 hours per day and 6 days per week for complaints, suggestions etc. and shall also maintain a dedicated telephone/mobile number on which the CLIENT can contract round the clock for any emergent requirements.
6. (NAME OF SERVICE PROVIDER) shall be responsible for comprehensive free Annual maintenance of the e-cars for the entire period of contract, as decided by the client and (NAME OF SERVICE PROVIDER) , and shall replace battery when its capacity gets reduced below 75% of optimum capacity and ensure effective efficiency of battery at all times. .
7. The leased e-cars carry a free of charge periodic servicing (a total of ____ free services during a period of ____ years) from the date of commencement of lease or total ____ km during those ____ years; whichever is earlier. Subsequent services would be on paid basis after every ____ km or ____ year from the last service, whichever is earlier.

8. The car tyres would be replaced once every ____ months by (NAME OF SERVICE PROVIDER) but shall be repaired/replaced immediately by (NAME OF SERVICE PROVIDER) , in case of any damage.
9. (NAME OF SERVICE PROVIDER) would supply and install a minimum of ____ DC chargers in the client location as per requirement of the client who will provide requisite support to (NAME OF SERVICE PROVIDER) .
10. (NAME OF SERVICE PROVIDER) would bear all the costs and steps associated with the registration and deregistration of E-cars with the Regional Transport Authorities.
11. (NAME OF SERVICE PROVIDER) would raise an invoice in the first week of every month for the preceding month.
12. (NAME OF SERVICE PROVIDER) would appoint a nodal officer to manage client queries and urgencies and inform through e-mail his name and contact details to the client.
13. The agreement shall not lead to any relationship between drivers of E-cars and the client and payment of salary and other allowance including meeting their all statutory obligations shall be the sole responsibility of the (NAME OF SERVICE PROVIDER) and no complaint by any of the drivers in this regard will be entertained by the CLIENT.

OBLIGATION OF CLIENT

- (a) It shall be the responsibility of the client to provide dedicated location(s), space (without any charge) and all necessary approval, to (NAME OF SERVICE PROVIDER) for installation/commissioning of charging stations and to also undertake all electrical and preparatory work relating thereto.
- (b) The client shall make payment to (NAME OF SERVICE PROVIDER) as per approved rates depending upon the number of leased vehicles within 30 days of receipt of the invoice from the (NAME OF SERVICE PROVIDER).
- (c) All necessary documents relating to registration and de-registration of the vehicles, acceptance of vehicles by the clients from (NAME OF SERVICE PROVIDER) at its premises during the delivery of the vehicle shall be signed by the CLIENT.

TERM OF THE AGREEMENT

- (a) The agreement between CLIENT and (NAME OF SERVICE PROVIDER) shall normally be valid for a period of _____ year(s) from the date of deployment of the first E-car to the client/ payment of _____ monthly lease rental from the date of deployment of E-cars with a provision to further extend it for a period not exceeding one year as may be decided by the competent authority after review of performance.
- (b) Upon expiry/termination of the agreement, the client shall handover the leased E-cars to authorized officer(s) of the (NAME OF SERVICE PROVIDER) at its premises.

PROCEDURE FOR AMENDMENT, CANCELLATION, ARBITRATION AND EXCLUSIVITY

The Agreement between the client and (NAME OF SERVICE PROVIDER) may be renegotiated/amended after recording the same in writing and inserting or attaching to the main agreement, if at any time during its term of the contract, the work or environment of the CLIENT and/or (NAME OF SERVICE PROVIDER) is so altered that the contents of the memorandum are no longer appropriate. Such an amended agreement will have the effect of updating the agreement

TERMINATION OF AGREEMENT:

a. The Client Events of Default:

If the 'CLIENT' causes the undermentioned events or circumstances and does not cure those default(s) within sixty (60) days from the date of the Default Notice from (NAME OF SERVICE PROVIDER) the same shall be treated as default on the part of the client for the purpose of the agreement.

- i) The CLIENT is in breach of its obligations under the agreement, which has a Material Adverse Effect upon the "(NAME OF SERVICE PROVIDER)" or the project.
- ii) The CLIENT is in breach of any representation or warranty made under the Agreement or it repudiates this Agreement.
- iii) The CLIENT fails to pay the (NAME OF SERVICE PROVIDER) the consideration as applicable.

b. Termination by the “(NAME OF SERVICE PROVIDER)”

Upon occurrence of Default or Event of Default by the ‘CLIENT’, THE ‘(NAME OF SERVICE PROVIDER)’ shall issue a Termination Notice to the “CLIENT” giving a further period of sixty (60) days (the termination period) to make a representation and if, during the Termination Period, the “CLIENT” takes suitable steps to remedy the situation, the ‘(NAME OF SERVICE PROVIDER)’ shall be entitled to withdraw the termination notice. The Agreement will automatically terminate on the expiry of the Termination Period, if not withdrawn by (NAME OF SERVICE PROVIDER) and termination notice will be issued by (NAME OF SERVICE PROVIDER) in writing on the address of the client.

c. “(NAME OF SERVICE PROVIDER)” Event of Default

If the undermentioned events or circumstances are caused by the default of (NAME OF SERVICE PROVIDER) and not are not cured within sixty (60) days from the date of issue of default notice from the Client, those events will be considered as events of default by the (NAME OF SERVICE PROVIDER) .

- i. The “(NAME OF SERVICE PROVIDER)” is in breach of its obligations under the Agreement, which has a material adverse effect upon the “CLIENT” or the project.
- ii. The “(NAME OF SERVICE PROVIDER)” is in breach of any representation or warranty made under this Agreement or it repudiates the Agreement.
- iii. The “(NAME OF SERVICE PROVIDER)” abandons the Project or any of its material obligations as provided under the Agreement.

d. Termination by the “CLIENT”

Upon occurrence of default or event of default by (NAME OF SERVICE PROVIDER) , the client shall issue a termination notice to (NAME OF SERVICE PROVIDER) giving a sixty (60) days (termination period) to make a representation and if during the termination period, the (NAME OF SERVICE PROVIDER) take suitable steps to remedy the situation, the client shall be entitled to terminate notice. The agreement would automatically terminate on expiry of termination period if (NAME OF SERVICE PROVIDER) fails to cure the default during that period and termination notice will be issued by client in writing on the address of (NAME OF SERVICE PROVIDER) mentioned in the agreement.

CONSEQUENCES OF TERMINATION

In case of termination of the agreement, the terms specified in the agreement shall cease to exist and shall not be enforceable and neither the client nor the ESSL shall have any claim against each other except any legitimate dues pending with either party during the currency of the agreement.

SCHEDULE OF RATES FOR WET LEASE OF E-CARS

The monthly lease rental per car shall be negotiated by the client and shall not exceed INR _____ exclusive of GST with a yearly escalation of _____% over the preceding years of lease rental and vehicles running more than _____ Km in a month extra charge of INR ____/km shall be paid by the CLIENT. The overtime for uses of each e-car beyond _____ hours per month shall be paid, over and above the lease rent, by the CLIENT at the following rates:

Overtime charges per hour= Hourly Minimum Wages as defined by Central Labour Commission multiplied by ____ (the current overtime rates in Delhi (NCR) are INR _____).

The expenses on account of parking, toll, power consumption on account of charging of cars, etc. would be borne by the CLIENT. The miscellaneous expenses would be borne by the (NAME OF SERVICE PROVIDER) .

SCHEDULE OF RATES FOR DRY LEASE OF E-CARS (WITHOUT CHAUFFERS)

- 1) The lease rental shall be negotiated and shall not exceed INR _____ per month per car
- 2) For vehicles running more than _____ km a day extra charge of INR ____ per km shall apply
- 3) Toll tax, parking charge, and octroi (MCD) would be paid by the CLIENT directly at the collection points
- 4) The other terms and conditions would be same as in the case of Wet Lease.

DISPUTE RESOLUTION

The agreement shall be governed by and construed in accordance with laws of India and the courts of NCT of Delhi will have exclusive jurisdiction in the matter and the parties shall endeavor to settle any dispute through amicable consultations and negotiations. If no amicable settlement is reached within 30 days from the commencement of such consultations, either party may refer such dispute to arbitration under the arbitration and Conciliation Act, 1996 (or any amendment or reenactment thereof) by a sole arbitrator to be appointed mutually by the (NAME OF SERVICE PROVIDER) and the CLIENT. The venue of arbitration shall be at Delhi. All arbitration proceedings shall be conducted in accordance with the governing law specified above.

LIMITATION OF LIABILITY

Under no circumstances shall, CLIENT have any liability for loss or damage for goodwill or other special, indirect, consequential, exemplary, incidental or punitive damages, whether in contract, tort or any other theories in law or equity, even if CLIENT has been advised of the possibility of such damages.

PUBLICITY AND BRANDING

Neither the 'CLIENT' nor (NAME OF SERVICE PROVIDER) shall undertake any publicity or branding in any form of the Agreement entered into between them without the approval of each other.

INDEPENDENT CONTRACTOR

(NAME OF SERVICE PROVIDER) shall be deemed to be acting as an independent contractor of the 'CLIENT' while performing its obligation towards the Agreement and shall not be an agent, legal representative, partner of or in joint venture with the Customer and neither party shall be binding the other to any obligation, affirmation or commitment with respect to any other person or entity.

ASSIGNMENT

The agreement, including any obligation under the agreement shall not be assigned, delegated or transferred without the prior consent of the other party except that (NAME OF SERVICE PROVIDER) may assign, delegate or transfer this Agreement to any of its Affiliates till that entity remains its Associate.

NOTICES

All notices under the Agreement shall be in writing and deemed to be effective upon receipt when delivered personally or sent by commercial overnight courier with written verification of receipt or sent by certified or registered mail, postage prepaid and return receipt requested.

WAIVER

No term or provision of the Agreement will be waived by either party except with the consent of both parties in writing.

NON-EXCLUSIVITY

The Agreement shall be non-exclusive for both the "Client" and (NAME OF SERVICE PROVIDER) in the sense that (NAME OF SERVICE PROVIDER) shall be free at all times to provide same or similar services as envisaged in the agreement to any third party. Similarly, the "Client" may take same or similar services on lease from any other legal entity.

SUSPENSION OF SERVICES

(NAME OF SERVICE PROVIDER) reserves the right to suspend services and remove the E-cars from e facility of the "client" in case there is delay of payment for a continuous period of 60 (sixty) days from the date of raising of the invoice and delivering to the "client".

FORCE MAJEURE

Both the client and (NAME OF SERVICE PROVIDER) shall make suitable provisions for force majeure.

PENALTY CLAUSE

Violation of service condition would attract the provisions of the penalty clauses provided in the schedule to the agreement.
