सत्यमेव जयते

भारत सरकार

विद्युत मंत्रालय

केंद्रीय विद्युत प्राधिकरण

राष्ट्रीय विद्युत समिति प्रभाग

No. CEA-GO-15-14/1/2021-NPC Division/ 439-459 दिनांक: 30.09.2022

विषय: एन. पी. सी. की 12वी बैठक के Notice/Agenda के सम्बन्ध मे |

महोदय,

उपरोक्त विषय से सम्बन्धित दस्तावेज आपकी जानकारी एवम आवश्यक कार्यवाही हेतु संलग्न है |

संलग्नक : यथोपरि

भवदीय,

30/9/2022

(ऋषिका शरण)

मुख्य अभियंता एवं सदस्य सचिव, रा. वि. स.

सेवा मे :

1. अध्यक्ष, उत्तर पुर्वी क्षेत्रीय विद्युत समिति
2. अध्यक्ष, उत्तर क्षेत्रीय विद्युत समिति
3. अध्यक्ष, पश्चिम क्षेत्रीय विद्युत समिति
4. अध्यक्ष, दक्षिण क्षेत्रीय विद्युत समिति
5. अध्यक्ष (टी सी सी), पुर्वी क्षेत्रीय विद्युत समिति
6. अध्यक्ष(टी सी सी), उत्तर पुर्वी क्षेत्रीय विद्युत समिति
7. अध्यक्ष(टी सी सी), उत्तर क्षेत्रीय विद्युत समिति
8. अध्यक्ष(टी सी सी), पश्चिम क्षेत्रीय विद्युत समिति
9. अध्यक्ष(टी सी सी), दक्षिण क्षेत्रीय विद्युत समिति
10. अध्यक्ष(टी सी सी), पुर्वी क्षेत्रीय विद्युत समिति
11. सदस्य सचिव, उ क्षे वि स, नई दिल्ली -110 016
12. सदस्य सचिव , प क्षे वि स, मुम्बैई -400 093
13. सदस्य सचिव, द क्षे वि स, बेंगलुरु-560 009
14. सदस्य सचिव, पु क्षे वि स, कोलकता - 700 033
15. सदस्य सचिव, उ पु क्षे वि स, शिल्लोंग - 793 006

विशेष आमंत्रित

1. मुख्य कार्यपालक अधिकारी , उ म प्र, रा भा प्रे के, नई दिल्ली -110 016.
2. सीओओ, सीटीयू, सौदामिनी, प्लॉट नंबर 2, सेक्टर-29, गुड़गांव-122001.
3. सीएमडी, पावरग्रिड, सौदामिनी, प्लॉट नंबर 2, सेक्टर-29, गुरुग्राम-122001.

प्रति सूचनार्थ:

1. अध्यक्ष, के. वि. प्रा., रा.वि.स.,
2. सदस्य, (ग्रिड प्रचालन एवं वितरण), के.वि.प्रा.

*****

सत्यमेव जयते

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

No. CEA-GO-15-14/1/2021-NPC Division/439-459 Date: 30.09.2022

To

(As per distribution list)

विषय: NPC की 12वीं बैठक के लिए Notice/Agenda के सम्बन्ध में।

Subject: Notice/Agenda for the 12th Meeting of National Power Committee (NPC)-Reg.

महोदया/महोदय,

एनपीसी की 12वीं बैठक 14.10.2022 (शुक्रवार) को पूर्वाह्न 11:00 बजे वीडियो कांफ्रेंस के माध्यम से होने वाली है। बैठक का एजेंडा सीईए की वेबसाइट पर अपलोड किया गया है। मीटिंग के एक दिन पहले मीटिंग का वेब लिंक शेयर किया जाएगा.

कृपया बैठक में शामिल होने की सुविधा प्रदान करें।

अध्यक्ष, सीईए ने 11वीं बैठक और एनपीसी की विशेष बैठक के निर्णयों पर की गई कार्रवाई रिपोर्ट (एटीआर) प्राप्त करने की इच्छा व्यक्त की है। यह अनुरोध किया जाता है कि 08.10.2022 तक एटीआर अधिमानतः उपलब्ध कराया जाए।

The 12th meeting of NPC is scheduled to be held on **14.10.2022 (Friday) at 11:00 AM** through video conference. The Agenda of the meeting is uploaded on CEA website. The meeting web link will be shared one day before the meeting.

Kindly make it convenient to attend the meeting.

Chairperson, CEA has desired to get the Action Taken Report (ATR) on decisions of the 11th meeting and special meeting of NPC. It is requested that the ATR may be provided preferably by 08.10.2022.

भवदीय/Yours faithfully

30/9/2022

(ऋषिका शरण/Rishika Sharan)

मुख्य अभियन्ता एवं सदस्य सचिव,रा.वि.स /

Chief Engineer & Member Secretary, NPC

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Distribution List (Members of NPC):

1. Shri Jishnu Dev Varma, Hon'ble Dy. Chief Minister & I/c Power, Govt. of Tripura, New Civil Secretariat, Room No. 6301, 3rd Floor, Agartala – 799010, [Email: deputycmtripura@gmail.com]
2. Shri Shurbir Singh, IAS, Chairperson, NRPC & Chairman & Managing Director, Delhi Transco Limited (DTL), Shakti Sadan, Kotla Marg, New Delhi-110002, [Email: cmd@dtl.gov.in]
3. Shri M. Chaitanya Prasad, IAS,Chairman (WRPC) &Secretary (Power), DNH & DD Secretariat C/o, 2nd Floor, Kachigam, Daman-396 215 [Email : chaitanya.prasad88@ias.nic.in & secretarypower2020@gmail.com]
4. Shri D Prabhakar Rao, IAS, Chairperson (SRPC) & CMD, Transmission Corporation of Telangana Ltd. 6th floor, Vidyut Soudha, Khairatabad, Hyderabad-500082 [e-mail: cmd@tstransco.in]
5. Shri Avinash Kumar, IAS, Chairperson (ERPC) and Chairman-cum-Managing Director, Jharkhand Urja Vikas Nigam Ltd(JUVNL), Engineering Building, HEC Dhurwa, Ranchi-834004, Jharkhand [Email:cmdjuvnl@gmail.com]
6. Shri C.A. Parmar, Chairman –TCC (WRPC) & Chief Engineer- DNHPDCL, Room No. 312, 3rd floor, Vidhyut Bhavan, 66 kV Road, Near Secretariat, Amali, Silvassa: 396 230 [Email: caparmar1956@gmail.com]
7. Shri K K Verma, Chairperson, TCC (ERPC) & Managing Director, Jharkhand Urja Sancharan Nigam Ltd.(JUSNL) Engineering Building, HEC Dhurwa, Ranchi-834004, Jharkhand [Email: mdjusnl@gmail.com, md@jusnl.in]
8. Shri T Jagath Reddy, Chairperson, TCC (SRPC) & Director (Transmission), TSTRANSCO, Vidyut Soudha, Khairatabad, Hyderabad-500082 e-mail: dir.trans@tstransco.in
9. Shri Mukesh Kumar Sharma, Chairperson, TCC(NRPC) & Director (Operations), Delhi Transco Limited (DTL), Shakti Sadan, Kotla Marg, New Delhi-110002, [Email: dir.opr@dtl.gov.in]
10. Shri Debasish Sarkar, Chairperson, TCC (NERPC), Managing Director, TSECL, Corporate Office, Agartala- 799003 email: managing.director@tsecl.in
11. Shri Naresh Bhandari, Member Secretary, NRPC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi-110016.[Email: ms-nrpc@nic.in]
12. Shri Satyanarayan S., Member Secretary, WRPC, Plot No. F-3, MIDC Area, Marol, Opp. SEEPZ, Central Road, Andheri (East), Mumbai-400093. [Email: ms-wrpc@nic.in]
13. Shri Asit Singh, Member Secretary, SRPC, No.29, Race Course Cross Road, Bengaluru-560009. [Email: mssrpc-ka@nic.in]
14. Shri N. S. Mondal, Member Secretary, ERPC, 14, Golf Club Road, ERPC Building, Tollygunje,Kolkata-700 033.[Email: mserpc-power@nic.in]
15. Shri B. Lyngkhoi,, Member Secretary, NERPC, NERPC Complex, Dong Parmaw, Lapalang, Shillong-793006. [Email: ms-nerpc@gov.in]

Special Invitees:

1. CMD, POSOCO, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016.
2. CEO, CTU, Saudamini, Plot No.2, Sector-29, Gurugram-122001.
3. CMD, POWERGRID, Saudamini, Plot No.2, Sector-29, Gurugram-122001.
4. CMD,NTPC, NTPC Bhawan, SCOPE Complex, Institutional Area, Lodhi Road, New Delhi – 110003

Copy for kind information to:

1. Chairperson, CEA, New Delhi
2. Member (G&OD), CEA, New Delhi

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केंद्रीय विद्युत प्राधिकरण

Central Electricity Authority

राष्ट्रीय विद्युत समिति

National Power Committee

Agenda Notes – 12th Meeting of

National Power Committee

To be held on 14.10.2022

(through VC/Online)

केंद्रीय विद्युत प्राधिकरण/Central Electricity Authority

राष्ट्रीय विद्युत समिति/National Power Committee

Agenda Notes – 12th Meeting of National Power Committee (NPC) to be held on 14.10.2022 though VC

1. Introduction

The 12th Meeting of the National Power Committee (NPC) is scheduled to be held on 14.10.2022 (Friday) at 11:00 AM through video conference. The meeting link will be shared one day before the meeting.

2. Confirmation of Minutes of 11th Meeting of NPC

2.1 The Minutes of 11th Meeting of NPC held on 28.02.2022 through video conference was circulated vide letter No. 4/MTGS/NPC/CEA/2021/199-218 dated 19.04.2022. The Minutes of Special meeting of NPC held on 24.06.2022 through video conference was circulated vide letter No. CEA-GO-15-14/1/2021-NPC Division dated 19.07.2022.

2.2 No comments received on Minutes of both the meetings from the members.

The Committee may confirm the minutes of the 11th meeting and Special meeting of NPC.

3. Action Taken Report of previous meeting of NPC

Chairperson, CEA has desired to get the Action Taken Report (ATR) on decisions of the 11th meeting and special meeting of NPC. It is requested that the ATR may be provided preferably by 08.10.2022.

ATR received from RPCs as on date attached at **Annexure-1A.**

4. National Level Optimization of Surplus Generation Capacity

4.1 Chief Engineer, GM Division, CEA vide letter dated 13.09.2022 **(Annexure-I)** circulated the draft proposal of National Level Optimization of Surplus Generation Capacity to the states, UTs, DISCOMs, SLDCs, state sector and central sector Generator companies.

4.2 The proposal can be implemented in phases:

Phase 1 : For CGSs – within 3 months

Phase 2 : For ISGS (excluding CGSs) – within 6 months

Phase 3 : For Surplus power with the States/ Distribution companies (whether State owned or Private) by other States/ Distribution companies– within 6 months

4.3 **<u>Phase 1</u>: Standard Operating Procedure (SOP) for flexibility to use the URS power of CGSs by all the States/ Discoms irrespective of the original beneficiary/ beneficiary of the region**

1. The original beneficiaries of CGSs shall submit through web-based energy scheduling portal the surrendered quantum/URS (MW), duration (block-wise) and tariff (determined by the Appropriate Commission). However, the tariff will be subject to any changes made by the Appropriate Commission.

In case the URS offered is for longer duration, the original beneficiaries may also provide a standing consent to the CGSs specifying the quantum and time period.

2. The willing new beneficiaries shall submit its requisition for availing URS power through web-based energy scheduling portal. The quantum and time period shall be specified with the acceptance to pay the tariff as determined by the Appropriate Commission.

3. CGSs shall be permitted to revise the schedule for URS power from its original beneficiary to any other beneficiary. The new beneficiary shall be liable to pay both Variable Charge (VC) and Fixed Cost (FC) for full requisition and original beneficiaries shall have no right to recall as entire FC liability is shifted to the new buyer.

4. The payment shall be secured through suitable Payment Security Mechanism (PSM) e.g. Letter of Credit (LC) or advance payment or any other mutually agreed payment security mechanism.

5. The consent and details of surrender of URS power by the original beneficiaries and its requisition by the new beneficiaries, shall be submitted by CGSs to the National Power Committee (NPC) through portal.

6. NPC shall provisionally allocate URS power on portal to willing new beneficiaries based on following criteria:

i. First preference shall be given to co-beneficiaries of the CGSs.
ii. In case multiple beneficiaries seek to avail URS power from a CGS, the URS power allocation will be on first come first serve basis.
iii. In case, multiple beneficiaries request simultaneously (in the same time block) and the sum of their requisitioned power exceeds the available URS power, then the URS shall be apportioned & scheduled pro-rata in the ratio of the respective requisitions (in MW) made by the buyers.

7. NPC shall communicate through portal the provisional allocation of URS power to the CGSs, respective RLDCs and NLDC and the beneficiary to whom the power is temporarily allocated.

8. NLDC shall finalize on the portal the allocation of URS power after checking availability of margins in the transmission network, and communicate to CGSs, respective RLDCs and NPC.

9. The concerned RLDC shall schedule the URS power as per the requisition within the time blocks stipulated in IEGC.

10. Payment settlement will be as per the REAs (Regional Energy Accounts) prepared by the concerned Regional Power Committee (RPC). This will be binding on all the buyers of power from CGSs.

11. The procedure of temporary allocation of power from CGSs can be further simplified as under:

i. Temporary allocation of 1 to 15 and 16 to end of month shall be done by CEA with the following time lines:

Time Line	**Beneficiaries actions**	**Advantage**
D-15 to D-13 day	Beneficiaries with surplus power would upload the surrender information in portal	The buyer/ purchaser would be assured of its power. The seller will be relieved of FC.
D-12 to D-10	Requisitioning Beneficiaries will show their interest	
Request received upto 24 hrs of D-10 would be frozen		
D-9 to D-8	PSM by beneficiaries and confirmation by the generating stations	
D-7 to D-5	CEA would compute the temporary allocation.	
D-4	CEA would issue the temporary allocation which would be implemented in WBES of RLDC.	

Note: **For 1st October to 15th October, window for surrender will open during 16th September to 18th September. Requisitioning window will open from 19th September to 21st September and on 27th September, CEA will bring out the temporary allocation**.

ii. Generally to facilitate revival of units under Shut Down (maximum around 36 hrs for cold start) or to avoid units going for RSD, on every D-2, RLDC would take the surrender and purchase request received upto 24 hrs of D-3 for the CGS it is scheduling and compute share allocation which will be used for creating Entitlement, scheduling and part load compensation for complete D day (00-24 hrs). The requisition can be beyond the MoP allocation. The same would be published by RLDC on its website by 18 hrs on D-2 day. This would address short term requirement on assured power/surrender on D-2.

iii. If any unit goes on RSD, respective RLDC would create on bar entitlement based on requisitions which will be used for creating On bar Entitlement, scheduling and for computing part load compensation. Requisitions can be beyond MoP allocation. This would be computed by RLDC for each day on rolling basis. Off bar Entitlement will be created based on surrender request. This will ensure power to needy states and not only FC liability for units going under RSD, small states will get their share from On Bar units. Part Load compensation will be paid only on whose name Entitlement is created.

4.4 **Phase 2: Standard Operating Procedure (SOP) for flexibility to use the URS power of ISGS (other than CGSs) by all the States / Discoms irrespective of the original beneficiaries of the region.**

Similar procedure may be adopted for such plants as well.

In case of these power stations, as there is no allocation made by the Central Government, the proposal concerning allocation, as stated in para 3.3, may not be applicable. Rest of proposal may be adopted. If both the buyers and the seller agree and give consent, the surplus power from such stations can also be used by other buyers. In such cases the new buyer will pay the full fixed cost and the variable charges.

4.5 **Phase 3 : Standard operating Procedure (SOP) for flexibility to use the Surplus power with the States/ Distribution companies** (whether State owned or Private) **by the other States/ Discoms**

i) At present some of the distribution companies are giving the surplus power to some other states through the banking process and take back the power when they need it as per the mutual agreement.
ii) It is also observed that due to the diverse nature of demand in different states at different time, there is a possibility of optimum utilization of resources.
iii) Many times it is seen that the States which are surplus during some period of time are keeping their own generating stations under reserve shutdown, while there are other States which are facing crisis. However, in the absence of any mechanism, the resources even though available in the country, are not being utilized to meet the overall demand in the country and there is load shedding. In the mutual interest, the mechanism needs to be established which helps the needy states. The State generating companies can also improve their Plant Load Factor and the effective overall per unit cost of generation of such generating companies can also be reduced.
iv) An exercise was carried out by the RPCs to know the states which are having surplus power and its duration. The states which can utilize such power were also identified. There are complementarity of demand. This can also vary depending upon the actual case even for a smaller duration depending upon the weather condition.
v) However, this cannot be one time exercise, the best use can be if there is an online mechanism where in states can temporarily transact.
vi) There may be an argument that the states can go and sell power in the power exchanges. But the experience shows that the states prefer to keep their units under

reserve shutdown. Further, the states / state owned generating companies do not take risk to bring their units mainly due to uncertainty of the Market Clearing Price.

vii) Thus, if the tariff is assured by some other states, the generating stations will come on bar and generate power. This will also reduce the burden of fixed cost to the Discoms and the retail tariff will also reduce benefitting the consumers. The buying State/ discoms shall also bear the transmission charges as applicable.

viii) In view of the above following is proposed :

a. Banking arrangements may continue as at present
b. Even for shorter duration, states may trade at the tariff determined by the Appropriate Commission. State generating companies will also become viable as their PLF will increase. This will reduce the per unit cost of power to even the existing buyers/ distribution companies.

4.6 The summary proposed timelines for implementation to prepare to avert future power crisis at the earliest, are as under:

a. The present web based energy scheduling online portal to be upgraded by NTPC at the national level in 2 months
b. POSOCO to link it with the scheduling module.
c. The Phase –I for CGSs to be completed by 30th November 2022.
d. States to give their comments in 20 days. Their suggestions to be incorporated by 15th October 2022.
e. The Phase – II and Phase – III to be completed by February 2023.
f. This will ensure capacity availability for all the States/ Discoms especially during the April, May, September and October months when the crisis is observed.

4.7 A meeting was also held on 22.09.2022 through VC chaired by Chairperson, CEA to deliberate the proposal with the stakeholders.

Members may deliberate.

5. Telemetry of real time active power (MW) data to SLDCs

5.1 A meeting was convened on 19.11.2020 by MS, NPC on the issue which was chaired by Chairperson CEA. In the meeting it was decided that a Joint Committee (JC) comprising members from all RPCs, CEA, and CTU / POWERGRID & POSOCO shall be formed to deliberate and finalize the Technical Specifications of IEMs, AMR and MDP system.

5.2 Accordingly, NPC Secretariat had constituted the Joint Committee (JC) on 02.12.2020.

5.3 The Joint Committee had five numbers of meetings (including one special meeting) on 05.02.2021, 14.04.2021, 16.07.2021, 10.11.2021 and 06.04.2022. The Joint Committee has finalized the Technical Specifications (TS) of the Interface Energy Meters (IEMs) with Automatic Meter Reading (AMR) and Meter Data Processing (MDP) for Interstate transmission system (ISTS) after due deliberation in the above meetings.

5.4 NPC Secretariat vide letter no. CEA-GO-15-24/6/2020-NPC Division/297-309 dated 06.07.2022 circulated the final Technical Specifications (TS) to the members of the Joint Committee and the same was also uploaded on the CEA website.

This is for information of the Committee.

6. Review of Status of Islanding schemes

6.1 The Special meeting of NPC was held on 24.06.2022 through video conference in which following decisions were taken on Status of Islanding Schemes-

(a) RPCs were requested to expedite the implementation of new islanding schemes and review of old Islanding schemes as per SOP.

(b) RPCs are also requested to review the already in service islanding schemes as per SOP (six monthly).

(c) RPCs were requested to update the MIS report on monthly basis for further forwarding it to MoP. The detailed MIS report (as per information available in NPC Secretariat) is attached at **Annexure-II.**

6.2 The status of the Islanding Schemes (as on 13.09.2022) is given below:-

Overview of the status of Islanding Scheme in all Regions									
Regions	**Number of Islanding Schemes**			**No. of Implemented/ Inservice IS (Green Color)**	**No. of existing IS (Cat-A) which are Under Implementation/ under review (Yellow Color)**	**No. of Newly proposed IS (Cat-B) which are under design/Under Implementaion stage (Yellow Color)**	**No. of Newly proposed IS (Cat-B) which are Implemented/ Inservice (Red color)**	**No. of IS having SCADA visibility**	**Remarks**
	Cat-A	**Cat-B**	**Total**						
SR	4	3	7	7	0	0	3	7	-
ER	7	2	9	4	4	2	0	5*	*1-under implementation IS KBUNL IS is discontinued.
NR	4	7	11	2	2	7	0	4*	*2-under implementationIS /IS in design stage
WR	7	5	12	6	1	5	0	6	All In service IS are made available at SLDC/WRLDC except Uran Islanding Scheme
NER	2	1	3	1	1	1	0	3*	*2-under implementationIS /IS in design stage
Total	**24**	**18**	**42**	**20**	**8**	**15**	**3**	**25***	5-under implementationIS /IS in design stage

RPCs are requested to update the status of Islanding Schemes.

7. National Energy Account (NEA)

7.1 MoP vide letter No.A-60016/24/2012-Adm-I dated 30.11.2016 observed that considering the changing scenarios, the functions of NPC may also be broadened including the functions of maintain the National Energy Account (NEA) involving the inter-national and inter-regional transmission transactions.

7.2 NLDC vide letter dated 09th November 2018 furnished the Agenda Note **(Annexure-III)** on National Energy Account & National Deviation Pool Account. NLDC was of the view that there is a need for implementing a National Deviation Pool Account based on the National Energy Account, for streamlining the accounting and settlement at national level. Further, suitable changes/modifications were required to be effected in the Indian Electricity Grid Code (IEGC) and Deviation Settlement Mechanism (DSM) Regulations apart from recognizing the functions of NPC in the regulatory framework.

7.3 The issue of National Energy Account was deliberated in various meetings of NPC and in the 11th meeting of NPC held on 28.02.2022, NPC and RPCs agreed that in future, if NEA would be mandated by CERC, the directions may be followed accordingly. It was also decided that, the mock accounting of the proposed National Energy Accounting (NEA) may be carried out by NLDC for RPCs and NPC in order to have a clear understanding of NEA.

7.4 In this regard, the amendment in the functions of National Power Committee in its Conduct of Business Rule (CBR) will be required. The amended CBR of NPC is attached as **Annexure-IV** and the same may be forwarded to the MoP for issuance of necessary orders.

Members may deliberate.

7. Guidelines for locating PMU for URTDSM Phase II project

7.1 Unified Real Time Dynamic State Measurement (URTDSM) project was agreed for implementation in a Joint Meeting of all the five Regional Standing Committees on Power System Planning held on 5th March, 2012**.** During the meeting, following PMU placement philosophy was decided:

1. All 400 kV stations in State and ISTS grids.
2. All generating stations at 220 kV and above.
3. HVDC terminals and inter-regional and inter-national tie lines.
4. Both ends of all the transmission lines at 400kV and above: State and ISTS sector

7.2 In addition to the PMU deployment, six (6) analytical software such as Line Parameter Estimation, Online Vulnerability Analysis, Linear State Estimation, CT/CVT Calibration, Supervised Zone-3 Distance Protection and Control Schemes for Improving System Security were also proposed to be developed by IIT Bombay.

7.3 A Detailed Project Report (DPR) was prepared in 2012 for implementation of URTDSM on Pan -India basis. **Based on communication availability, URTDSM Project has been taken up in two phases as follows**:

- **Phase-I:** 1186 PMUs at 351 substations**(communication existing)** - Rs. 278.89 crore.
- **Phase-II:** 554 PMUs at 301 substations (**with installation of 11,000 Kms OPGW**) - Rs.377 crore.
- Phasor Data Concentrators with 6 Analytical Software at 32 Control centres considering requirement of both i.e. Phase-I & Phase-II.

7.4 CERC granted in-principle approval for the project in Sept'2013 with 70% funding from PSDF & 30% equity from POWERGRID.

7.5 POWERGRID has taken up the implementation of URTDSM Project in Jan'2014 and 1409 PMUs were installed under the Project. The increase in quantity of PMUs is due to addition of new bays etc.at the substations.

7.6 The feedback on URTDSM Phase-I performance is received from POSOCO.

7.7 During the discussion on finalization of PMU quantity for URTDSM phase–II, requirement of additional locations for PMU installation was raised by NRLDC (in 45th TCC, 48th NRPC meeting) and SRLDC (in TCC & 37th SRPC meeting)

7.8 In the 10th meeting of NPC, it was decided that a Sub-Committee would be formed under the chairmanship of Member Secretary, WRPC with representatives from POSOCO, CTU, POWERGRID, and all RPCs/NPC to discuss on the uniform philosophy of PMU locations, new analytics and requirement of up gradation of Control Centre under URTDSM project and submit its recommendations to the NPC.

7.9 So far, three meetings of the sub-committee were held. The 3rd meeting of sub-committee was held on 14.09.2022 to discuss the report. The report is under finalisation.

MS, WRPC may update the status to the Committee.

8. Automatic Under Frequency Load Shedding (AUFLS) Scheme and Mapping of Feeders

A. Review of AUFLS Settings

8.1 As per the decision in the 2nd meeting of NPC held on 16th July 2013, the following AUFLS scheme at four (4) stages of frequency viz. 49.2 Hz, 49.0 Hz, 48.8 Hz & 48.6 Hz had been implemented in all the regions:

AUFLS	Frequency (Hz)	Load relief in MW					
		NR	WR	SR *	ER	NER	Total
Stage-I	**49.2**	2160	2060	2350	820	100	7490
Stage-II	**49.0**	2170	2070	2360	830	100	7530
Stage-III	**48.8**	2190	2080	2390	830	100	7590
Stage-IV	**48.6**	2200	2100	2400	840	100	7640
Total (MW)		**8720**	**8310**	**9500**	**3320**	**400**	**30250**

****SR grid not integrated with NEW grid at that point of time***.

8.2 In the 10th meeting of NPC it was decided that the AUFLS scheme (with 4 stages) viz. 49.4, 49.2, 49.0 & 48.8 Hz with existing quantum of load shedding shall be

implemented in all the Regions. The quantum of load shedding would be reviewed based on the recommendation of the Sub- Committee to study the AUFLS scheme.

8.3 It was informed in the 11th meeting of NPC that SR, WR and ER constituents have already raised the settings of UFR of AUFLS scheme by 0.2 Hz and requested NR and NER to raise the settings of UFR of AUFLS scheme by 0.2 Hz on priority basis and inform NPC.

8.4 So far, three meetings of the sub-committee were held. The 3rd meeting of the sub-committee was held on 06.09.2022 to discuss the report. The report is under finalisation.

MS, WRPC may update the status to the Committee.

B. Mapping of Feeders under AUFLS schemes:

8.5 In the 10th Meeting of NPC held on 09.04.2021, it was reiterated that each RPC would submit the details/progress of feeder mapping on SCADA to NPC Secretariat regularly on a quarterly basis.

8.6 The status of mapping of feeder under AUFLS scheme is as below:

S.No.	RPC	Status (As informed in the 11th meeting of NPC held on 28.02.2022)
1	SRPC	Mapping of around 93% of feeders on SCADA.
2	ERPC	95% mapping of feeders achieved.
3	WRPC	WRPC will update the status shortly.
4	NRPC	UFR: UP-14 %, Punjab-35%,Haryana-80%, Delhi-42%,HP-14%, Rajasthan, UK, J&K & Chandigarh-0%.
5	NERPC	NERPC informed that they will update the status shortly.

8.7 In 11th meeting of NPC, SRPC informed that generally the 66 kV and 33 kV lines are connected at 132 kV level or 220 kV level, therefore, the communication system available at 132 kV level and 220 kV level can be utilized for these lines. For 11 kV and 33 kV level, the DISCOMs data may be integrated with their control centers. From the control centre it could be picked up to SLDC. It was also informed that initially the mapping in SR was also lesser but after taking the matter with states, the communication facility has been improved and the status of mapping of feeder also improved.

8.8 In the 11th Meeting of NPC it was decided that RPCs may take up matter with the states in the OCC meeting on priority basis for Mapping of feeders (on which UFR and df/dt relays of AUFLS scheme are installed) to SCADA and may follow the method suggested (at para 7.7) by SRPC. The availability of mapped feeders may also be ensured.

RPCs are requested to update the status of mapping of feeders.

9. Ensuring Proper Functioning of Under Frequency Relays (UFR) & df/dt Relays.

9.1 RPC Secretariats were mandated to carry out periodic inspection in line with the provisions of IEGC. The frequency of site inspection was proposed to be up to six

months and the inspection reports were to be furnished by RPCs to NPC Secretariat. RPCs were requested to update the status of periodic inspection of UFR and df/dt relays quarterly, however, no inputs have been received.

9.2 Further, as per the Standard Operating Procedure (SOP) of the Islanding Schemes, the Inspection/ audit of all essential components like UFR and df/dt relays shall be carried out regularly (by third party) by RPCs.

9.3 RPCs may ensure healthiness of UFR and df/dt relays and associated communication system through periodic inspection and testing of UFRs.

RPCs may update.

10. Power System Stabilizers (PSS) tuning

10.1 The Enquiry Committee constituted by Govt. of India to enquire into the grid disturbances of July, 2012, had inter-alia recommended proper tuning of electronic devices and PSS of generators.

10.2 In the 9th meeting of NPC, it was decided that a Sub-group may be constituted comprising of representatives of Protection Sub-Committee of respective RPCs, NPC, NLDC, CTU, NTPC and NHPC, to finalize a common procedure for Power System Stabilizers (PSS) Tuning. Accordingly, NPC Secretariat vide letter dated 08.02.2021 has formed the Sub-Committee under the chairmanship of MS, WRPC to finalize a common procedure for Power System Stabilizers (PSS) Tuning.

10.3 In the Special meeting of NPC held on 24.06.2022, MS, WRPC informed that the final draft report has been prepared and circulated to the members for comments and after the comments received, final report may be available in due course of time after incorporating the comments suitably.

MS, WRPC may update the status to the Committee.

11. Issuance of Regional Energy Account (REA)

11.1 NTPC vide letter dated 16th November 2021 requested that provisional REA may be issued by RPCs as early as possible, preferably on 1st of the following month.

11.2 In the 11th meeting of NPC, the issue was discussed in details and following decisions were taken:

(a) NPC requested NLDC/RLDCs to streamline the process of collection and processing of data from constituents in a time bound manner so that the data for preparation of REA may be sent to RPCs on the first calendar day of month.

(b) NLDC/RLDCs would look into the matter and all efforts would be done to send data for preparation of REA to RPCs by NLDC/RLDCs on the first calendar day of the month.

(c) NTPC may approach Hon'ble CERC for amendment in the CERC Regulations and get permission to raise the monthly provisional bills on 1st of every month based on provisional data.

11.3 NPC Secretariat via email dated 09th May 2022 informed NTPC about the decisions of 11th NPC.

NLDC/RPCs are requested for early issuance of REA and update the status.

12. Implementation of Automatic Generation Control (AGC) in India (at Inter-State level)

12.1 CERC in its order dated 13.10.2015 in Petition No. 11/SM/2015 had reiterated the need for mandating Primary Reserves as well as enabling Secondary Reserves, through Automatic Generation Control (AGC) as follows:

"(a) All generating stations that are regional entities must plan to operationalize AGC along with reliable telemetry and communication by 1st April, 2017. This would entail a one-time expense for the generators to install requisite software and firmware, which could be compensated for. Communication infrastructure must be planned by the CTU and developed in parallel, in a cost-effective manner.

(b) On the other hand, National/Regional/State Load Dispatch Centers (NLDC/RLDCs/SLDCs) would need technical upgrades as well as operational procedures to be able to send automated signals to these generators. NLDC /RLDCs and SLDCs should plan to be ready with requisite software and procedures by the same date.

(c) The Central Commission advises the State Commissions to issue orders for intrastate generators in line with this timeline as AGC is essential for reliable operation of India's large inter-connected grid."

12.2 In the 09th meeting on NPC, it was agreed that all RPCs and NLDC shall provide the updated information on status of implementation of AGC, regularly to NPC Secretariat on a quarterly basis.

12.3 In the 10th meeting of NPC, GM, NLDC informed that as per CERC's directions the AGC Pilot project was first Commissioned in Dadri during January 2018. Then the AGC was extended to one Plant (CGS), as a pilot project in all the 5 regions of the country. As per CERCs directions the AGC to be implemented in all ISGS stations. They had conducted various meetings with the generators and CTU to implement the scheme. As of now **35 GW of ISGS stations were selected for AGC**. The AGC implementation is in progress in various stages of implementation in Inter/Intra state Generating stations. He also informed that signal for AGC for ISGS will be sent from NLDC and for Intra state Generators the AGC signals will be sent from SLDCs.

12.4 In the 11th meeting of NPC, it was observed that progress of implementation of AGC is slow especially in intra-state AGC implementation and requested RPCs to monitor the status of intra-state AGC implementation regularly and to suggest states to approach SERC for the financial implication of AGC implementation.

RPCs/ NLDC are requested to update the status of implementation of AGC.

13. Utilization of PSDF fund for the next 5 years and Monitoring of Schemes

Sanctioned Grant from PSDF

13.1 MoP has sanctioned grant of around **₹ 12234.16** Crore (171 Schemes as on 31.08.2022) to States/ Central Power utilities/RPCs from Power System Development Fund (PSDF).

13.2 The region wise summary of schemes funded through PSDF is given below:

Sr. No.	Region	No. of Projects	Grant sanctioned in Rs. Cr.	Grant Availed in Rs. Cr.	% of Grant availed
		Sanctioned			
1	NR	41	2448.106	1192.23	49%
2	WR	26	1080.24	336.05	31%
3	SR	40	2638.77	1702.36	65%
4	ER	29	1848.33	1316.13	71%
5	NER	32	834.44	490.62	59%
6	Central/ National	3	3384.27	3162	93%
Total		**171**	**12234.16**	**8199.39**	**67%**

13.3 It was observed that the utilization of grant by state utilities in different regions (particularly WR and NR) was not satisfactory vis-a-vis central sector utilities.

13.4 In the 17th meeting of Monitoring Committee of PSDF held in Jan, 2022, the performance of utilities for execution of the projects was also evaluated and put up to MoP. The utilities were categorized as very good, good, average and poor performance.

13.5 In the 18th meeting of Monitoring Committee, in order to utilize the outlay of the amount of ₹.11,000/- crore for PSDF, the following types of projects were agreed to be funded from PSDF:

Sr. No.	Identified Project name	Estimated cost of the project	Sector/ utilities	Fund required for next five years	Remarks
EFC Meeting Recommendations					
1	Setting up of SLDC cum REMC at Ladakh	106	Ladakh	106	100% may be funded
2	Setting up of New REMCs at 3 more locations	39		39	100% may be funded

Sr. No.	Identified Project name	Estimated cost of the project	Sector/ utilities	Fund required for next five years	Remarks
RPC Meeting recommendations					
3	Pilot Project for Dynamic Line rating in each region. 10 Cr – 15 crores per region	80	All India Basis	75	90% may be funded
4	Development /converting Islanding scheme with adaptive load management	100	All India Basis	90	90% may be funded
5	Security Operation Centre at SLDCs for real-time cyber monitoring	525	All India Basis	525	100% may be funded (Already recommended in the EFC meeting)
6	Communication for AMR and Real-time Telemetry & 100% visibility of Grid.	600	All India Basis	300	50% may be funded
7	Capacity Building for central/state utilities	20	All India Basis	100	100% may be funded

Agenda:

a. **The State Utilities /concerned organization of the above projects are requested to expedite the DPR preparation work and submit it to nodal agency of PSDF i.e. NLDC.**
b. **The RPCs to sensitize State/Central Utilities to prepare and send the concrete proposals for utilization of Rs 11000 Crs through PSDF as approved by Ministry of Finance for the next five years.**
c. **RPCs are also requested to sensitize the State utilities to complete the ongoing projects funded through PSDF expeditiously.**

14. Membership of RPC forum (ERPC- Agenda)

14.1 Government of India has a vision of achieving Renewable Energy installation target of 150 GW and 450 GW by 2022 and 2030 respectively. The major challenge before the government is the RE integration to the Indian Electricity Grid and smooth running of the Grid in the Real Time operation. For resolving the issues of RE generators, smooth integration and proper real time dispatch of RE generation, ERPC proposed a suitable provision for inclusion of RE generators with threshold of 200 MW and above as a membership of RPC forum.

14.2 In the 11th meeting of NPC, it was observed that the issue needs deliberation at the RPC level first and afterward may be discussed at NPC level.

14.3 SRPC vide letter dated 05.07.2022(**Annexure-IV)** informed that the issue was discussed in the 42nd meeting of SRPC. SRPC recommended that membership of two RE generators with threshold of 1000 MW (and above) installed capacity in the region on rotational basis. The participation of such generators would be limited to technical and operational issues.

Members may deliberate.

15. Any other agenda

Any other agenda with the permission of Chairperson, NPC.

Annexure-1A

Action Taken Report (ATR) from SRPC

11th NPC Agenda Item/ Spl. NPC		SRPC Update
Item No.	**Item**	
3	Issuance of Regional Energy Account (REA)	SRPC Secretariat issues REA (Provisional) on 1st or 2nd of the month.
4	Telemetry of real time active power (MW) data to SLDCs	✓ NPC Division, CEA vide email dated 6th July 2022 had intimated that the Joint Committee after due deliberation has finalized the "Technical Specification (TS) of Interface Energy Meters, Automatic Meter Reading system and Meter Data Processing system" and circulated the Final copy of the Technical Specifications. ✓ In the 52nd meeting of Commercial Sub-Committee of SRPC held on 14.07.2022, it was recommended that a detailed plan of implementation of AMR-MDP system in SR may be furnished by PGCIL to SRPC before the next Meeting of Commercial Sub-Committee. PGCIL agreed the same. ✓ The item has been put up for deliberation the 41st TCC/ 43 rd SRPC to be held on 20.09.2022 & 23.09.2022
6	Item No 2 of Special NPC Meeting (24.06.2022) Review of the Islanding schemes	✓ Seven Islands have been implemented in SR. ✓ MIS report is being regularly sent to NPC. Latest MIS is attached as **Annexure A.**
7(B)	Mapping of Feeders under AUFLS schemes	✓ SCADA mapping status is being **updated/reviewed** in monthly OCC Meetings and the following is the status update (as on 31.08.2022) in the 194th Meeting of OCC held on 12.09.2022 ✓ As on 31.08.2022 mapping was 93% in SR. ✓ SCADA mapping status details are given in **Annexure B.**
8	Ensuring Proper Functioning of Under Frequency Relays (UFR) & df/dt Relays	✓ 12 Substations each for UFR & df/dt inspection have been identified for inspection. ✓ The inspection/test would be completed by 31st December 2022. ✓ Substations identified for the /inspection functionality test during 2022-23are given at **Annexure C**.
9	Implementation of Automatic Generation Control (AGC) in India (at Inter-State level)	✓ The status of AGC in ISGS and Intra-state generators as discussed in 194th OCC (12.09.2022 is enclosed at **Annexure D**)
11	Monitoring of Schemes Sanctioned Grant from PSDF	✓ Being followed up in OCC.
12	National Energy Account (NEA)	✓ Mock accounting of the proposed National Energy Accounting (NEA) is carried out by NLDC based on the weekly DSM statements issued by RPCs. ✓ SRPC is in receipt of the weekly NEA from NLDC for the weeks 09.05.2022-15.05.2022, 16.05.2022 to 22.05.2022, 23.05.2022 to 29.05.2022, 30.05.2022 to 05.06.2022, 06.06.2022 to 12.06.2022, 13.06.2022 to 19.06.2022 & 20.06.2022 to 26.06.2022 **(Annexure-E).** ✓ It is observed that there is no value addition in NEA account statements.

		✓ Requirement of NEA by NLDC is not coming out evidently. ✓ Present system of Regional Accounting may be continued. ✓ It is also brought to notice that DSM, RRAS & AGC accounts by RPCs are revised based on the schedule/actual revisions by RLDC and the same would lead to different NEA as and when RPCs revise the accounts.
14	CEA (Cyber Security in Power Sector) Guidelines, 2021	✓ Was followed up in the Communication Meetings and is being followed up in TCC/SRPC Meeting.
16	Membership of Private Transmission licensee beyond a certain Threshold in RPCs	✓ KTL was nominated as member of SRPC for the year 2022-23 by GM Division as per the guidelines finalized by MoP. ✓ KTL has stated that they are not interested to be members of SRPC
18	Membership of RPC forum of RE	✓ The issue was discussed in the 42nd SRPC Meeting (04.06.2022) where following was recommended "**Membership of two (02) RE generators with a threshold of 1000 MW (and above) installed capacity in the region on rotational basis. The participation of such generators would be limited to technical and operational issues**". The same was communicated to NPC vide letter dated 05.07.2022

Special NPC(24.06.2022) Agenda Item		**SRPC Update**
Item No.	**Item No.**	
2	WRPC agenda for integration of (Interface Energy Meter) IEMs into SCADA/EMS system for telemetry of meter data to MP SLDC.	The item has been put up for deliberation the 41st TCC/ 43 rd SRPC to be held on 20.09.2022 & 23.09.2022
3	Status of RGMO and FGMO in the Interstate/Intrastate Generating stations	Unit wise performance is being monitored for RGMO incidents. 12th meeting was held on 30.08.2022.

Annexure B

State			AP	TS	KAR	KER	TN	PUD	SR
Recommended	MW	A	1582	1686	2328	826	2993	91	**9506**
Implemented	MW	B	1602	1826	2384	962	3121	91	**9986**
	%	B/A	101	108	102	116	104	100	105
Mapped Quantum as on 31st August 2022	MW	C	1528	1581	2357	942	2765	82	9255
Mapped Quantum & wrt Implemented	%	C/B	95	**87**	**99**	**98**	**89**	**90**	**93**

Annexure C

AUFR & df/dt functionality testing 2022-23 in SR		
State / Utility	**AUFR S/S**	**df/dt S/S**
Andhra Pradesh/ APTRANSCO	220/132/33 kV Nuzuvid	220/132/33 kV Bhimadolu
	132/33 kV Kambhampadu	132/33 kV Bhimavaram
Karnataka/ KPTCL	220/66 kV Anthrasanahalli	220/66 kV Anthrasanahalli
	220/66 kV Anchipalya	220/66 kV Anchipalya
Kerala/ KSEBL	110kV Vennakkara	220 kV Nallalam
	110kV Kuthuparamba	110 kV Ottappalam
Tamil Nadu/ TANTRANSCO	230/110 kV Palladam	230/110 kV Palladam
	230/110 kV Pudansandai	230/110 kV Pudansandai
Telangana/ TSTRANSCO	132 kV Borapatla	132 kV Alair
	132 kV Janagon	220/132 kV Kosigi
Puducherry/ PED	110/22/11 kV Marapalam	110/22/11 kV Marapalam
	110/220 kV Eripakkam	110/220 kV Eripakkam

Annexure D

Implementation of Automatic Generation Control (AGC) in SR

Update in the 194th Meeting of OCC held on 12.09.2022 is as follows:

a) **Central Sector implementation:**

Entity	Generator	Status
NTPC	Simhadri STPS Stage-II (2 x 500MW)	Implementedon18.11.2018. AGC is disabled in Unit IV due to high vibration issues.
	Ramagundam STPS Stage- II (4x500 MW)	Commissionedon31.03.2021. Put under AGC.
	SimhadriSTPSStage- I (2x500 MW)	Commissioned, put under AGC.

	Ramagundam STPS Stage-I (3x200MW)	AGC implementation works would be taken after the maintenance/renovation works.
	Talcher STPS(4 x 500 MW)	Made operational on 26.07.2022.
NTECL	VallurT PS (3x500MW)	AGC is in place from14.06.2021.
	NTPL(2 x500 MW)	Inoperationfrom14.06.2021.
NLCIL	TPS II (7 x 210 MW)	NLC TS I Expn: Unit 1 Implemented on 19.06.2022 Unit II is under shut down. As and when opportunity comes AGC will be implemented. NNTPP/NLC TS II Expn: All the works are completed. In coordination with NLDC will be made operational.
	TPSI Expn (2 x 210 MW)	
	TPSII Expn (2 x 250 MW)	
	NNTPS (2 x 500 MW)	
NP-Kunta	Solar in AP AGC:5 blocks of 50MW i.e. 5 x50 =250 MW	Works stopped due to some contractual issues**.**

b) AGC at state Level- Pilot Project identification & Implementation:

State	Generator	Status
Andhra Pradesh	Krishnapatnam(2x800MW)	After finalization at Management level in coordination with generator M/s APPDCL and AP Discoms, the proposal will be submitted to the Hon'ble APERC.
	In addition to Krishnapatnam planning AGC at VTPS, Ry TPP, Upper Sileru & Lower Sileru APGENCO: The proposals which are submitted to Management are under consideration.	
Karnataka	Sharavathy Generating Station(1035MW) (Available MW for AGC is 10 % of liveload up to maximum of 100MW (10% of1035 MW)	Implementation of AGC Pilot under USAID GTG Scheme completed. KPTCL&KPCL in coordination would put the units under AGC operation. Commercial implications are being examined.
	Varahi Under Ground Power House(4x115 MW) (Available MW for AGC is 20% of live load up to maximum of 80 MW as per the programme planned)	Go-live pilot completed (January 2021) KPTCL&KPCL in coordination would put the units under AGC operation..
Kerala	Kuttiady Unit No. 5(50MW)	State Regulator has been approached for putting AGC on regular basis. Permission is still awaited.
	Commission has been approached only for permission to put the units under AGC. Incentive part is not included.	
	IdukkiUnitNo.1(130MW)	AGC would be implemented once the Optical Fiber link from SLDC to Idukki PH is established. Expected the

		works completion by December 2022.
Tamil Nadu	North Chennai TPS Stage-II (two units i.e. 2x600 MW)	Tenders will be floated again since only one party hadappeared.
	MTPS – II(1x600MW)	Technical bid opened and after clearing the clarification price bid would be opened and works would be awarded shortly.
Telangana	KTPS-VI(500MW) (132MW downward)	Put in to regular operation with existing SCADA. Performance is being observed. Further course of action will be taken accordingly.

Annexure E

Details of NEA issued by NLDC

(Rs Lakhs)

	Net All India Inter-Regional	DSM Surplus (+)/ Deficit (-)	RRAS Charges paid from DSM Pool a/c	RRAS Charges received in DSM Pool a/c	AGC Net Charges paid from DSM Pool a/c	Net Surplus (+)/ Deficit (-)
09.05.2022 to 15.05.2022	426	5,829.79	18,204.23	3,427.44	-1,181.91	-7,765
16.05.2022 to 22.05.2022	636	12,430.06	27,586.94	3,333.75	-1,138.37	-10,685
23.05.2022 to 29.05.2022	805	8,250.00	5,505.00	2,956.00	-700.00	6,401
30.05.2022 to 05.06.2022	1156	14,250.00	11,284.00	514.00	-1,482.00	4,962
06.06.2022 to 12.06.2022	1740	13,059.00	54,306.00	4,247.00	-1,992.00	-35,008
13.06.2022 to 19.06.2022	2250	13,517.00	38,759.00	3,807.00	-1,141.00	-20,294
20.06.2022 to 26.06.2022	-1019	12,927.00	6,042.00	3,011.00	-249.00	10,146

ANNEXURE-I

आज़ादी का अमृत महोत्सव

सत्यमेव जयते

भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केन्द्रीय विद्युत प्राधिकरण
Central Electricity Authority
ग्रिड प्रबंधन प्रभाग
Grid Management Division
****

संख्या: 1/ए.आई/सी.ओ.आर/ग्रि.प्र./2022/257
No. 1/AI/COR/GM/2022/ 257

दिनांक: 13.09.2022
Dated : 13.09.2022

सेवा में / To,

1. सभी राज्यों के प्रमुख सचिव (ऊर्जा) / Principal Secretary (Energy) of all states
2. केंद्र शासित प्रदेशों के बिजली विभाग के सभी प्रमुख/All Head of Electricity Department of UTs
3. सभी एसएलडीसी / All SLDCs
4. सभी वितरण कंपनियां / All DISCOMs
5. सभी केंद्रीय और राज्य क्षेत्र की उत्पादक कंपनियां / All Central Sector and State Sector generating companies

विषय: अधिशेष उत्पादन क्षमता के राष्ट्रीय स्तर के अनुकूलन के लिए मसौदा प्रस्ताव के संबंध में।
Subject: Draft proposal for National level Optimization of Surplus generation capacity-reg.

महोदय/Sir ,

उपरोक्त विषय पर मसौदा प्रस्ताव इस पत्र के साथ संलग्न है। आपसे अनुरोध है कि 30 सितंबर, 2022 तक इस पर अपने इनपुट/टिप्पणियां प्रदान करें।

The draft proposal on the above subject is attached herewith. It is requested to provide your inputs/comments on the same by 30th September, 2022.

भवदीय / Yours sincerely ,

संलग्नक/ Encl. : यथोपरि / As above

हेमंत जैन
13/9/2022

(हेमंत जैन /Hemant Jain)
मुख्य अभियन्ता (ग्रिप्र.) / Chief Engineer (GM)

National Level Optimization of Surplus Generation Capacity

1.0 Background

1.1 The generation capacity in the country are mainly categorized as under:
(i) State owned Generating Stations
(ii) Central Sector Generating Stations
(iii) Private Sector: IPPs
(iv) Captive Generating Stations

1.2 The generating capacities are not being optimally utilized on many occasions. Every year, difficulty is observed in meeting the demand and some states do resort to power cuts. The crisis is observed specifically during the months of April, May, September and October. Though the generating capacity is available in the country, but due to one to one agreement constraint, the said capacity even though available cannot be utilized by the entity which is facing crisis due to some reason or the other.

1.3 The Distribution companies tie up power from above generating sources mainly under following routes:
(i) At regulated tariff determined by the Appropriate Commission under Section 62 of the Electricity Act,2003.
(ii) At bid tariff adopted by the Appropriate Commission under Section 63 of the Electricity Act,2003.
(iii) Banking of Power with other distribution companies

1.4 The State owned generating companies supply power to the Distribution companies of the same State and also supply seasonal surpluses to distribution companies of some other states under banking arrangements amongst such distribution companies.

1.5 The Central Sector Generating companies supply power to the various States/UTs under the allocation made by the Central Government. The allocated power which have been surrendered by the States/UTs, are also reallocated to the other needy States/UTs. Some States/UTs have exited from the Power Purchase Agreement (PPA) with the Central Sector Generating Companies after completion of 25 years, and such power is available for merchant sale as well.

1.6 The allocation of power from the Central Sector Generating Stations (CGSs), is generally done to the States/UTs within the regions. There are five regions in the country i.e, Eastern, Western, Southern, Northern and North-Eastern regions. The scheduling of power from CGSs is accordingly effected among the beneficiaries of the region and the entities with PPA from such generating

stations. In case, there is Un-requisitioned Surplus (URS) power from CGSs, it is available to only the original beneficiaries of the respective generating station which means such URS power generally remains confined to the respective region only. There are following concerns in this regard:

(i) Generally there are similar demand pattern amongst the beneficiaries in the region and hence if demand is low, then some of the generating stations which are higher in the merit order dispatch, are not scheduled and have surplus capacity. As a result, most of the time, due to overall requisition being less than the Technical Minimum (TM), the plant(s) do not generate and go under Reserve Shut Down (RSD). There are two consequences of this:
   a. The plant is out of bar and is not available in the grid. Hence, these plants cannot serve the grid under any contingencies or be used for Ancillary Services (Reserves).
   b. Even the States/UTs who have power allocation and need power from such plants, are deprived of the generation as the plant remains under reserve shutdown due to requisition lower than the TM.

(ii) The demand in some other region may be high or the States/UTs who do not have the allocation from such power plants may be in need of this power due to increased demand. For example, Peak in Northern Region is during summer season whereas the Peak Demand in Southern Region is during winters. Similarly, there is diversity in the time at which the peak demand occurs in the States/UTs of the region.

1.7 At present, a portal is operational in Western Region (WR) and Eastern Region (ER)to facilitate use of surplus power by the constituents of the region. In order to have the national level optimization, it is being proposed to have a national level mechanism and portal so that any State/ Discom can utilize the surplus power from Central Sector Generating Stations of any region.

1.8 Apart from supply of power to the entities with PPA, the Private Sector – IPPs, may sell their surplus power in the power exchanges in Term Ahead Market (TAM) or Day Ahead Market (DAM) or Real Time Market (RTM) or through DEEP e-portal.

1.9 The Captive generating Stations can sell their surplus power after meeting their own requirement.

2.0 Proposed Scheme

1. For Central Sector Generating Stations (CGSs).
   a. Flexibility to use of URS power (Day ahead basis) by all constituents in the country and ;
   b. Use of longer duration surplus power.
2. For Inter- State Generating Stations (ISGS) (excluding CGSs)
3. For Surplus power with the States/ Distribution companies (whether State owned or Private)

The above proposal can be implemented in phases:

Phase 1 : For CGSs – within 3 months
Phase 2 : For ISGS (excluding CGSs) – within 6 months
Phase 3 : For Surplus power with the States/ Distribution companies (whether State owned or Private) by other States/ Distribution companies– within 6 months

2.1 Phase 1: Standard Operating Procedure (SOP) for flexibility to use the URS power of CGSs by all the States/ Discoms irrespective of the original beneficiary/ beneficiary of the region

1. The original beneficiaries of CGSs shall submit through web-based energy scheduling portal the surrendered quantum/URS (MW), duration (block-wise) and tariff (determined by the Appropriate Commission). However, the tariff will be subject to any changes made by the Appropriate Commission.

   In case the URS offered is for longer duration, the original beneficiaries may also provide a standing consent to the CGSs specifying the quantum and time period.

2. The willing new beneficiaries shall submit its requisition for availing URS power through web-based energy scheduling portal. The quantum and time period shall be specified with the acceptance to pay the tariff as determined by the Appropriate Commission.

3. CGSs shall be permitted to revise the schedule for URS power from its original beneficiary to any other beneficiary. The new beneficiary shall be liable to pay both Variable Charge (VC) and Fixed Cost (FC) for full requisition and original beneficiaries shall have no right to recall as entire FC liability is shifted to the new buyer.

4. The payment shall be secured through suitable Payment Security Mechanism (PSM) e.g. Letter of Credit (LC) or advance payment or any other mutually agreed payment security mechanism.

5. The consent and details of surrender of URS power by the original beneficiaries and its requisition by the new beneficiaries, shall be submitted by CGSs to the National Power Committee (NPC) through portal.

6. NPC shall provisionally allocate URS power on portal to willing new beneficiaries based on following criteria:

   i. First preference shall be given to co-beneficiaries of the CGSs.
   ii. In case multiple beneficiaries seek to avail URS power from a CGS, the URS power allocation will be on first come first serve basis.

   iii. In case, multiple beneficiaries request simultaneously (in the same time block) and the sum of their requisitioned power exceeds the available URS power, then the URS shall be apportioned & scheduled pro-rata in the ratio of the respective requisitions (in MW) made by the buyers.

7. NPC shall communicate through portal the provisional allocation of URS power to the CGSs, respective RLDCs and NLDC and the beneficiary to whom the power is temporarily allocated.

8. NLDC shall finalize on the portal the allocation of URS power after checking availability of margins in the transmission network, and communicate to CGSs, respective RLDCs and NPC.

9. The concerned RLDC shall schedule the URS power as per the requisition within the time blocks stipulated in IEGC.

10. Payment settlement will be as per the REAs (Regional Energy Accounts) prepared by the concerned Regional Power Committee (RPC). This will be binding on all the buyers of power from CGSs.

11. The procedure of temporary allocation of power from CGSs can be further simplified as under:

   i. Temporary allocation of 1 to 15 and 16 to end of month shall be done by CEA with the following time lines:

Time Line	**Beneficiaries actions**	**Advantage**
D-15 to D-13 day	Beneficiaries with surplus power would upload the surrender information in portal	The buyer/ purchaser would be assured of its power. The seller will be relieved of FC.
D-12 to D-10	Requisitioning Beneficiaries will show their interest	
Request received upto 24 hrs of D-10 would be frozen		

D-9 to D-8	PSM by beneficiaries and confirmation by the generating stations	
D-7 to D-5	CEA would compute the temporary allocation.	
D-4	CEA would issue the temporary allocation which would be implemented in WBES of RLDC.	

Note: **For 1st October to 15th October, window for surrender will open during 16th September to 18th September. Requisitioning window will open from 19th September to 21st September and on 27th September, CEA will bring out the temporary allocation**.

ii. Generally to facilitate revival of units under Shut Down (maximum around 36 hrs for cold start) or to avoid units going for RSD, on every D-2, RLDC would take the surrender and purchase request received upto 24 hrs of D-3 for the CGS it is scheduling and compute share allocation which will be used for creating Entitlement, scheduling and part load compensation for complete D day (00-24 hrs). The requisition can be beyond the MoP allocation. The same would be published by RLDC on its website by 18 hrs on D-2 day. This would address short term requirement on assured power/surrender on D-2.

iii. If any unit goes on RSD, respective RLDC would create on bar entitlement based on requisitions which will be used for creating On bar Entitlement, scheduling and for computing part load compensation. Requisitions can be beyond MoP allocation. This would be computed by RLDC for each day on rolling basis. Off bar Entitlement will be created based on surrender request.
This will ensure power to needy states and not only FC liability for units going under RSD, small states will get their share from On Bar units. Part Load compensation will be paid only on whose name Entitlement is created.

2.2 Phase 2: Standard Operating Procedure (SOP) for flexibility to use the URS power of ISGS (other than CGSs) by all the States / Discoms irrespective of the original beneficiaries of the region.

Similar procedure may be adopted for such plants as well.

In case of these power stations, as there is no allocation made by the Central Government, the proposal concerning allocation, as stated in para 2.1, may not be applicable. Rest of proposal may be adopted. If both the buyers and the seller agree and give consent, the surplus power from such stations can also be used by other buyers. In such cases the new buyer will pay the full fixed cost and the variable charges.

2.3 <u>Phase 3</u> : Standard operating Procedure (SOP) for flexibility to use the Surplus power with the States/ Distribution companies (whether State owned or Private) **by the other States/ Discoms**

i) At present some of the distribution companies are giving the surplus power to some other states through the banking process and take back the power when they need it as per the mutual agreement.

ii) It is also observed that due to the diverse nature of demand in different states at different time, there is a possibility of optimum utilization of resources.

iii) Many times it is seen that the States which are surplus during some period of time are keeping their own generating stations under reserve shutdown, while there are other States which are facing crisis. However, in the absence of any mechanism, the resources even though available in the country, are not being utilized to meet the overall demand in the country and there is load shedding. In the mutual interest, the mechanism needs to be established which helps the needy states. The State generating companies can also improve their Plant Load Factor and the effective overall per unit cost of generation of such generating companies can also be reduced.

iv) An exercise was carried out by the RPCs to know the states which are having surplus power and its duration. The states which can utilize such power were also identified. There are complementarity of demand. This can also vary depending upon the actual case even for a smaller duration depending upon the weather condition.

v) However, this cannot be one time exercise, the best use can be if there is an online mechanism where in states can temporarily transact.

vi) There may be an argument that the states can go and sell power in the power exchanges. But the experience shows that the states prefer to keep their units under reserve shutdown. Further, the states / state owned generating companies do not take risk to bring their units mainly due to uncertainty of the Market Clearing Price.

vii) Thus, if the tariff is assured by some other states, the generating stations will come on bar and generate power. This will also reduce the burden of fixed cost to the Discoms and the retail tariff will also reduce benefitting the consumers. The buying State/ discoms shall also bear the transmission charges as applicable.

viii) In view of the above following is proposed :

   a. Banking arrangements may continue as at present
   b. Even for shorter duration, states may trade at the tariff determined by the Appropriate Commission. State generating companies will also become viable as their PLF will increase. This will reduce the per unit cost of power to even the existing buyers/ distribution companies.

3.0 The summary proposed timelines for implementation to prepare to avert future power crisis at the earliest, are as under:

a. The present web based energy scheduling online portal to be upgraded by NTPC at the national level in 2 months
b. POSOCO to link it with the scheduling module.
c. The Phase –I for CGSs to be completed by 30th November 2022.
d. States to give their comments in 20 days. Their suggestions to be incorporated by 15th October 2022.
e. The Phase – II and Phase – III to be completed by February 2023.
f. This will ensure capacity availability for all the States/ Discoms especially during the April, May, September and October months when the crisis is observed.

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ANNEXURE-II

Overview of the status of Islanding Scheme in all Regions									
Regions	**Number of Islanding Schemes**			**No. of Implemented/Inservice IS (Green Color)**	**No. of existing IS (Cat-A) which are Under Implementation/under review (Yellow Color)**	**No. of Newly proposed IS (Cat-B) which are under design/Under Implementaion stage (Yellow Color)**	**No. of Newly proposed IS (Cat-B) which are Implemented/Inservice (Red color)**	**No. of IS having SCADA visibility**	**Remarks**
	Cat-A	**Cat-B**	**Total**						
SR	4	3	7	7	0	0	3	7	-
ER	7	2	9	4	3	2	0	5*	*1-under implementation IS KBUNL IS is discontinued.
NR	4	7	11	2	2	7	0	4*	*2-under implementationIS /IS in design stage
WR	7	5	12	6	1	5	0	6*	*All In service IS are made available at SLDC/WRLDC except Uran Islanding Scheme
NER	2	1	3	1	1	1	0	3*	*2-under implementationIS /IS in design stage
Total	**24**	**18**	**42**	**20**	**7**	**15**	**3**	**25***	5-under implementationIS /IS in design stage

Category of Islanding Schemes:	
Category 'A' IS	Islanding Schemes which are existing or already planned and in implementation stage.
Category 'B' IS	Islanding Schemes which are newly proposed.
Category-'I' IS	Islanding Schemes which are designed for the major cities, senstive generation or strategic loads.
Category-'II' IS	Islanding Schemes other than category I are Category II IS
Colour codes of Islanding Schemes:	
Green	Implemented/In service Islanding Scheme
Yellow	Under review/ Under Implementation Islanding Scheme
Red	Newly proposed Islanding Scheme which are under design/under implementaion stage

Central Electricity Authority
National Power Committee Division

Monthly MIS report - Islanding Scheme (IS) of Sothern Region (SR)
Status updated on …….. 13.09.2022

SN (Color Coding for Island Implementation)	Name of Islanding Scheme	Category A/B	Sub Category- (City/Major Town/ Strategic Load/Sensitive Generation)	Status (Category A -In-Service/ Under Review/ Reviewed & Under Implementation) (Category B-DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Timeline for completion of Review/ Reviewed & Under Implementation for Category A Timeline for implementation for Category B (DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Progress of the scheme during the last month	Healthiness of the Scheme	Timeline for SCADA Visibility in Sub SLDC/ SLDC/ RLDC	Remarks, if any (Major Change in the scheme may also be intimated)	Color Coding for SCADA Display Creation
	I	II	III	IV	V	VI	VII	VIII	IX	
Category I										
1	Hyderabad IS	A	City/Major Town/ Strategic Load	Reviewed scheme implemented w.e.f. 31.07.2021/ In service	Review completed on 05.03.2021. Reviewed scheme put into service w.e.f. 31.07.2021. In line with SOP, the scheme was last discussed in PCSC-101 held on 13.04.2022, and it was noted that in view of no change in boundary & LGB, the scheme in operation is found to be in order.	NA	Healthy	November, 2021/ Completed on 30.11.2021	—	
2	Chennai IS	A	City/Major Town/ Strategic Load	Reviewed scheme implemented	Review completed on 18.05.2021. Reviewed scheme put into service w.e.f. 31.05.2022. In line with SOP, the scheme was last discussed in PCSC-101 held on 13.04.2022, and it was noted that in view of no change in boundary & LGB, the scheme in operation is found to be in order.	NA	Healthy	November, 2021/ Completed on 28.02.2022	—	
3	Kudankulam IS	A	City/Major Town/ Strategic Load/ Sensitive Generation	Reviewed scheme implemented w.e.f. 31.12.2021/ In Service	Review completed on 18.08.2021. Reviewed scheme put into service w.e.f. 31.12.2021. In line with SOP, the scheme was last discussed in PCSC-101 held on 13.04.2022, and it was noted that in view of no change in boundary & LGB, the scheme in operation is found to be in order.	NA	Healthy	December, 2021/ Completed on 31.03.2022		
4	Bengaluru IS	B	City/Major Town/ Strategic Load	Implemented w.e.f. 31.05.2022/ In-Service	The Scheme was identified in December 2020. Design completed in July, 2021, and the scheme was put into service w.e.f. 31.05.2022.	NA	NA	December, 2021/ Completed on 31.05.2022	—	
Category II										
5	Neyveli IS	A	City/Major Town/ Strategic Load	Reviewed Scheme implemented w.e.f. 01.11.2021/ In-Service	Review completed on 04.06.2021; Reviewed scheme put into service w.e.f. 01.11.2021. In line with SOP, the scheme was last discussed in PCSC-101 held on 13.04.2022, and it was noted that in view of no change in boundary & LGB, the scheme in operation is found to be in order.	NA	Healthy	November, 2021/ Completed on 28.02.2022	—	
6	Visakhapatnam IS	B	City/Major Town/ Strategic Load	Implemented w.e.f. 31.07.2021/ In-Service	The Scheme was identified in Jan 2020, but owing to Covid-19 pandemic, the scheme was taken up for implementation in January, 2021. The scheme was put into service w.e.f. 31.07.2021.	NA	Healthy	Novemeber, 2021/ Completed on 30.11.2021	—	

7	Vijayawada IS	B	City/Major Town	Implemented w.e.f. 30.11.2021/ In-Service	The Scheme was identified in April 2021. Design completed in July, 2021, and the scheme was put into service w.e.f. 30.11.2021. In line with SOP, the scheme was last discussed in PCSC-101 held on 13.04.2022, and it was noted that in view of no change in boundary & LGB, the scheme in operation is found to be in order.	NA	Healthy	Novemeber, 2021/ Completed on 30.11.2021	—	

Central Electricity Authority
National Power Committee Division
MIS report - Islanding Scheme(IS) of Eastern Region (ER)

status as on 13.09.2022

S.No. (Color code for Islanding Scheme)	Name of Islanding Scheme	Category A/B	Sub Category- (City/Major Town/ Strategic Load/Sensitive Generation)	Status (Category A -In-Service/ Under Review/ Reviewed & Under Implementation) (Category B-DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Timeline for completion of Review/ Reviewed & Under Implementation for Category A Timeline for implementation for Category B (DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Progress of the scheme	Healthiness of the scheme	Timeline for SCADA Visibility in Sub SLDC/ SLDC/ RLDC	Remarks, if any (Major Change in the scheme may also be intimated)
	I	II	III	IV	V	VI	VII	VIII	IX
Category I									
1	Kolkata (CESC) IS	A	City/Major Town/ Strategic Load	Implemented/ In-Service.	The scheme was last reviewed in February, 2021. No operational constraints have been reported.	NA	Healthy	Implemented on 13.11.2021	—
2	Patna IS	B	City/Major Town/ Strategic Load	Design Stage	Review of islanding study & designing of the logic: Completed Implementation of Islanding Scheme: By December'2022	46th TCC opined that for detailed study by OEM, NTPC has to take initiatives & advised NTPC to take up the matter with OEM for carrying out detailed study of the proposed islanding scheme in a time bound manner. NTPC agreed to it. TCC advised Bihar to initiate the process of DPR preparation & advised all the concerned stakeholders to coordinate for providing relevant inputs for preparation of DPR. In 195th OCC Meeting, NTPC representative submitted that they would submit the detailed study report shortly.	NA	-	—
3	Ranchi IS	B	City/Major Town/ Strategic Load	Under Study	Feasibility study would again be done after the commissioning of PVUNL units.	Ranchi Islanding Scheme would be discussed after commissioning of PVUNL units.	NA	-	—
Category II									
4	Bakreswar TPS IS	A	Industrial and Railway load	Implemented/ In-Service.	The scheme was last reviewed in February, 2021. No operational constraints have been reported.	NA	—	Implemented in January, 2022	—
5	Haldia (Tata Power) IS	A	Industrial areas of Haldia and Port	Implemented/ In-Service.	The scheme was last reviewed in February, 2021. No operational constraints have been reported.	NA	—	Implemented in January, 2022	—
6	Howrah (Bandel) IS	A	Industrial load	Implemented/ In-Service.	The scheme was last reviewed in February, 2021. No operational constraints have been reported.	NA	—	Implemented in January, 2022	—
7	IB valley TPS IS	A	MCL Load	Under-implementation.	The scheme is under implementation and expected to be completed by Sept 2022	In the 193rd OCC meeting, OPTCL representative submitted that the installation, commissioning and testing of DTPC at both Budhipadar and OPGC end was completed. OPGC representative submitted that end to end signal testing and wiring from switchyard to relay panel had been completed. The testing would be carried out during the 2nd week of September 2022.	NA	Septemebr 2022	—
8	Farakka STPS, NTPC IS	A	Industrial & ECL Load	Under revision	—	—	NA	Implemented in December'2021	In 194th OCC Meeting, JUSNL representative submitted that requisition for sanctioning of funds from Govt. of Jharkhand is in process and is expected to be approved in the first week of September 2022.
9	Chandrapura IS of DVC System	A	Industrial load	Under revision	The scheme is under Review and scheme is expected to complete by September 2022.	In the 193rd OCC meeting, DVC representative submitted that the order had been placed to M/s Siemens on 14th July 2022. The expected timeline for completion of work is 9 months due to semi-conductor issues.	NA	September, 2022	Discussed in Special Meeting of ERPC held on 06.08.2021. Original scheme was with stage A of CTPS (3x120 MW). As stage A of CTPS has been retired, this scheme is being evolved considering the stage B of CTPS (2x250 MW).
10	KBUNL IS of Bihar	A	Industrial & Station Load	Discontinued	Scheme aborted	KBUNL **Islanding scheme has been aborted** as per the discussion of 188th OCC Meeting. Further, possibilities may be explored to study of Islanding scheme considering the Barauni units. The hardware procured for KBUNL Islanding scheme may be used for the same.	NA	-	—

Category of Islanding Schemes:	
Category 'A' IS	Islanding Schemes which are existing or already planned and in implementation stage.
Category 'B' IS	Islanding Schemes which are newly proposed.
Category-'I' IS	Islanding Schemes which are designed for the major cities, senstive generation or strategic loads.
Category-'II' IS	Islanding Schemes other than category I are Category II IS
Colour codes of Islanding Schemes:	
Green	Implemented/In service Islanding Scheme
Yellow	Under review/ Under Implementation Islanding Scheme
Red	Newly proposed Islanding Scheme which are under design/under implementaion stage

NA	**Not Applicable**

Central Electricity Authority
National Power Committee Division
MIS report - Islanding Scheme (IS) of Northern Region (NR)

status as on 13.09.2022

S.No. (Color code for Islanding Scheme)	Name of Islanding Scheme	Category A/B	Sub Category- (City/Major Town/ Strategic Load/Sensitive Generation)	Status (Category A -In-Service/ Under Review/ Reviewed & Under Implementation) (Category B-DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Timeline for completion of Review/ Reviewed & Under Implementation for Category A Timeline for implementation for Category B (DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Progress of the scheme	Healthiness of the scheme	Timeline for SCADA Visibility in Sub SLDC/ SLDC/ RLDC	Remarks, if any (Major Change in the scheme may also be intimated)
	I	II	III	IV	V	VI	VII	VIII	IX
Category I									
1	Delhi IS	A	City/Major Town/ Strategic Load	In service/ Under revision	Submission of timeline for completion of Review of Scheme is pending on part of Delhi SLDC.	—	Healthy	Visible in Delhi SLDC	—
2	NAPS IS	A	Sensitive Generation	Implemented/Inservice	The review of IS has been done with peak load of Summer and Winter 2019-20 and no operational constraints found.	NA	Healthy	Visible in UP SLDC	—
3	Lucknow (Unchahar) IS	A	City/Major Town	Under Design Stage	—	UP has submitted revised islanding scheme on 20.07.2022 which is under examination in consulatation with NRLDC, UPSLDC and NTPC.	NA	Visible in UP SLDC	
4	RAPS IS	A	Sensitive Generation	Implemented/Inservice	Review of IS has been done in view of last Peak/off-peak loading and no operational constraints found.	Rajasthan SLDC has created SCADA display of Islanding scheme.	Healthy	Visible in Rajasthan SLDC	RRVPN has reviewed the Islanding Scheme and has suggested the consideration of additional transmission lines to manage load generation balance at different load scenario. Proposed scheme has been deliberated and approved in 56th NRPC meeting held on 29th July,2022.
5	Dehradun IS	B	City/Major Town/ Strategic Load	Planning / Design Stage	—	Matter is pending at Uttarakhand SLDC for finalization/rejection of scheme.	NA	Dec-22	
6	Agra IS	B	City/Major Town/ Strategic Load	Planning / Design Stage	—	UP has placed offer to CPRI for dynamic study in July, 2022. The estimated time of study is 5 months from date of acceptance.	NA	Dec-22	
7	Jodhpur-Barmer-Rajwest IS	B	City/Major Town/ Strategic Load	Planning / Design Stage	The Planning/design of the scheme is in progress.	Scheme/Study was approved in 195th OCC meeting held on 24.05.2022. The same was discussed in 56th NRPC meeting held on 29th july, 2022 and RVPN has been requested to submit revised proposal before OCC.	NA	Dec-22	
8	Nabha Power Rajpura IS	B	City/Major Town/ Strategic Load	Planning / Design Stage	Scheme design is being finalized and will be submitted to CPRI for study	Punjab has submitted islanding scheme on 12.07.2022 which has been examined. Punjab has been requested for clarification on few points. However, reply is awaited.	NA	Dec-22	—
9	Pathankot-RSD IS	B	City/Major Town/ Strategic Load	Planning / Design Stage	Scheme design is being finalized and will be submitted to CPRI for study	Punjab has submitted islanding scheme on 12.07.2022 which has been examined. Punjab has been requested for clarification on few points. However, reply is awaited.	NA	Dec-22	—
10	Suratgarh IS	B	Strategic Load	Planning / Design Stage	The Planning/design of the scheme is in progress.	Scheme/Study was approved in 195th OCC meeting held on 24.05.2022. The same was discussed in 56th NRPC meeting held on 29th july, 2022 and RVPN has been requested to submit revised proposal before OCC.	NA	Dec-22	
Category II									
11	Talwandi Sabo IS	B	City/Major Town	Planning / Design Stage	Scheme design is being finalized and will be submitted to CPRI for study	Punjab has sent the offer to CPRI for study of Islanding Schemes. CPRI has asked for PSSE file for dynamic study which is being coordinated with NRLDC. Timeline: 6 months for implementation after CPRI study.	NA	Jul-24	—

Category of Islanding Schemes:	
Category 'A' IS	Islanding Schemes which are existing or already planned and in implementation stage.

Category 'B' IS	Islanding Schemes which are newly proposed.
Category-'I' IS	Islanding Schemes which are designed for the major cities, senstive generation or strategic loads.
Category-'II' IS	Islanding Schemes other than category I are Category II IS
Colour codes of Islanding Schemes:	
Green	Implemented/In service Islanding Scheme
Yellow	Under review/ Under Implementation Islanding Scheme
Red	Newly proposed Islanding Scheme which are under design/under implementaion stage

NA	**Not Applicable**

Central Electricity Authority
National Power Committee Division
MIS report - Islanding Scheme (IS) of Western Region (WR)

status as on 13.09.2022

S.No. (Color code for Islanding Scheme)	Name of Islanding Scheme	Category A/B	Sub Category- (City/Major Town/ Strategic Load/Sensitive Generation)	Status (Category A -In-Service/ Under Review/ Reviewed & Under Implementation) (Category B-DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Timeline for completion of Review/ Reviewed & Under Implementation for Category A Timeline for implementation for Category B (DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Progress of the scheme	Healthiness of the scheme	Timeline for SCADA Visibility in Sub SLDC/ SLDC/ RLDC	Remarks, if any (Major Change in the scheme may also be intimated)
	I	II	III	IV	V	VI	VII	VIII	IX
Category I									
1	Mumbai Islanding Scheme	A	City/ Strategic Load	Implemented/Inservice	Last reviewed on 04.04.2021 and no operational constraints found.	NA	Healthy	Visible	—
2	Uran Islanding Scheme	A	City/Major Town	Implemented/Inservice	Scheme last reviewed on 04.04.2021 and no modification required and no operational constraint found.	NA	Healthy	Oct 2022	—
3	Surat Islanding Scheme	A	City/Major Town	Implemented/Inservice	Scheme last reviewed on 04.04.2021 and no modification required and no operational constraint found.	NA	Healthy	Visible	The Scheme is healthy and visible on Gujarat SLDC and WRLDC SCADA (as informed telephonically). WRLDC recommendations about visibility are under consideration.
4	Ahmedabad City Islanding Scheme	A	City/Major Town/ Strategic Load	Implemented/Inservice	Scheme last reviewed on 04.04.2021 and no modification required and no operational constraint found.	NA	Healthy	Visible	The Scheme is healthy and visible on Gujarat SLDC and WRLDC SCADA (as informed telephonically). WRLDC recommendations about visibility are under consideration.
5	KAPS 1&2 Islanding Scheme.	A	Sensitive Generation	Implemented/Inservice	Scheme last reviewed on 04.04.2021 and no modification required and no operational constraint found.	NA	Healthy	Visible	The Scheme is healthy and visible on Gujarat SLDC and WRLDC SCADA (as informed telephonically). WRLDC recommendations about visibility are under consideration.
6	KAPS 3&4 Islanding Scheme.	A	Sensitive Generation	Under Implementation	Last reviewed on 04-07 June, 2021.	—	Healthy	Visible	The Scheme is healthy and visible on Gujarat SLDC and WRLDC SCADA (as informed telephonically). WRLDC recommendations about visibility are under consideration.
7	Nagpur Islanding Scheme	B	City/Major Town/ Strategic Load	Design/Engineering Stage.	Schematic design finalised on during discussion on 01.04.2021, 24.06.2021, 26.06.2021	Detailed engineering is under progress.	NA	NA	—
8	Jamnagar Islanding Scheme	B	City/Major Town/ Strategic Load	Design/Engineering Stage.	Schematic design finalised on during discussion on 01.04.2021, 24.06.2021.	Detailed engineering is under progress.	NA	NA	—
9	Bhuj(Anjar-Kukma) Islanding Scheme.	B	City/Major Town/ Strategic Load	Design/Engineering Stage.	Schematic design finalised on during discussion on 01.04.2021, 24.06.2021.	Detailed engineering is under progress.	NA	NA	—
10	Jabalpur Islanding Scheme	B	City/Major Town/ Strategic Load	Design/Engineering Stage.	Schematic design finalised on during discussion on 01.04.2021, 24.06.2021.	Detailed engineering is under progress.	NA	NA	—
11	Raipur Islanding Scheme	B	City/Major Town	Design/Engineering Stage.	Schematic design finalised on during discussion on 01.04.2021, 24.06.2021, 28.06.2021.	Detailed engineering is under progress.	NA	NA	—
Category II									
12	Vadodara/GIPCL Islanding Scheme.	A	Nandesari Industrial Load	Implemented/Inservice	Scheme last reviewed on 04.04.2021 and no modification required and no operational constraint found.	NA	Healthy	Visible	The Scheme is healthy and visible on Gujarat SLDC and WRLDC SCADA (as informed telephonically). WRLDC recommendations about visibility are under consideration.

Category of Islanding Schemes:	
Category 'A' IS	Islanding Schemes which are existing or already planned and in implementation stage.
Category 'B' IS	Islanding Schemes which are newly proposed.
Category-'I' IS	Islanding Schemes which are designed for the major cities, senstive generation or strategic loads.
Category-'II' IS	Islanding Schemes other than category I are Category II IS
Colour codes of Islanding Schemes:	
Green	Implemented/In service Islanding Scheme
Yellow	Under review/ Under Implementation Islanding Scheme
Red	Newly proposed Islanding Scheme which are under design/under implementaion stage

NA	**Not Applicable**

Central Electricity Authority
National Power Committee Division
MIS report - Islanding Scheme (IS) of North Eastern Region (NER)

status as on 24.06.2022

S.No. (Color code for Islanding Scheme)	Name of Islanding Scheme	Category A/B	Sub Category- (City/Major Town/ Strategic Load/Sensitive Generation)	Status (Category A -In-Service/ Under Review/ Reviewed & Under Implementation) (Category B-DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Timeline for completion of Review/ Reviewed & Under Implementation for Category A Timeline for implementation for Category B (DPR Preparation/Study/ Design/ Approval/Procurement/Commissioning/Implementation)	Progress of the scheme	Healthiness of the scheme	Timeline for SCADA Visibility in Sub SLDC/ SLDC/ RLDC	Remarks, if any (Major Change in the scheme may also be intimated)
	I	II	III	IV	V	VI	VII	VIII	IX
Category I									
1	Tripura Islanding Scheme.	A	City/Major Town	Reviewed Scheme under implementation	The scheme was reviewed and revised on 29.09.2021. 7 out of 20 additional UFRs already installed. The balance UFRs would be installed by July, 2022.	—	—	Completed	—
2	Upper Assam (Assam-I) Islanding Scheme.	A	City/Major Town	Implemented/Inservice	The scheme was reviewed on 29.09.2021 and the Revised scheme implemented & recorded in 57th PCC Meeting held on 15th February, 2022.	Completed	Completed	Completed	—
3	Guwahati (Assam-II) Islanding Scheme	B	City/Major Town	Planning / Design Stage.	Design reviewed on 18.01.2022. Draft DPR already prepared, detailed DPR will be submitted after BoQ is finalized by Utilities and Budgetary offer is received from at least two vendors. The Scheme is scheduled to be implemented by December, 2022.	—	NA	Completed	—
Category II									
No Islanding Scheme under this Category									

Category of Islanding Schemes:	
Category 'A' IS	Islanding Schemes which are existing or already planned and in implementation stage.
Category 'B' IS	Islanding Schemes which are newly proposed.
Category-'I' IS	Islanding Schemes which are designed for the major cities, senstive generation or strategic loads.
Category-'II' IS	Islanding Schemes other than category I are Category II IS
Colour codes of Islanding Schemes:	
Green	Implemented/In service Islanding Scheme
Yellow	Under review/ Under Implementation Islanding Scheme
Red	Newly proposed Islanding Scheme which are under design/under implementaion stage

NA	**Not Applicable**

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Govt. of India Enterprise)

पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016
Registered & Corporate Office : Ist Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in, Tel.: 011- 41035696, Fax : 011- 26536901

संदर्भ संख्या:पोसोको/एनएलडीसी/2021/97 दिनाँक: 12th फरवरी, 2021

सेवा मे,

Chief Engineer,
National Power Committee,
Central Electricity Authority,
01st Floor, Wing-5, West Block-II,
R.K.Puram, New Delhi-66

विषय: **NPC Agenda on National Energy Account(NEA).**

संदर्भ:1.**POSOCO Communication: पोसोको/एनएलडीसी/2018/329 dated 09th Nov'2018**

2.NPC email National Energy Account (NEA)_9th NPC meeting follow up-reg. dated 29th Jan'2021

महोदय,

In order to streamline and harmonize the accounting and settlement at the national level, POSOCO has submitted the agenda of "National Energy Account (NEA)" for discussion on 08th National Power Committee (NPC) (Annex-1).

As per the above-mentioned proposal, it is envisaged that NPC shall prepare the National Energy Account (NEA) comprising of the interregional and trans-national transactions. The NEA shall reflect the payables/receivables for each region on a net-basis and this amount shall be payable/receivable to the National Deviation Pool Account which shall be operated by NLDC. The NEA shall also reflect the cross-border or transnational transactions and the neighbouring countries shall be paying/receiving to/from the National Deviation Pool Account operated by NLDC.

National Energy Account (NEA) & National Pool Account related feedback have been submitted to Honourable CERC through various feedback report from time to time. CERC being a quasi-judicial body, does not normally respond to such feedback through letters etc. A petition may be required to be filed either suo-moto or by respective parties, for getting the appropriate directions from CERC. It may also be appreciated that introduction of the NEA needs the notification of the Regulatory Framework by CERC through appropriate Regulations, which also needs pre-publication, stakeholder consultation and final notification.

In this regard, it is pertinent to mention that CERC has mentioned the National Pool account in SCED order Petition No. 02 /SM/2019 (Suo-Motu) Date of Order: 31st of January, 2019. The same is reproduced below

Quote

"10.(c) POSOCO has suggested implementation of the National Pool Account to take care of changes in injection schedule for each region due to optimisation process. There would be a need for pay-in/pay-out from the National Pool Account for incremental changes in schedules (Up/Down). As per the present mechanism, the generators receive their variable charges based on the schedules issued by the concerned RLDC. Optimization would result in incremental/decremental changes in the existing schedules of generators and these would need to be settled through the National Pool Account mentioned above."

Unquote

As per the direction of CERC, National Pool Account (SCED) is maintained and operated by NLDC for settlement of SCED. Similarly National Deviation Pool Account for Deviation Settlement (DSM) can also be maintained/operated by NLDC in case of any direction received from the appropriate Commission.

In 08th NPC Meeting it was decided that RPCs may provide their observation/views after deliberations in the respective RPCs meeting. Accordingly, it is suggested that considering the suggestions received from the RPCs, a framework for implementation of NEA/National Pool Agenda can be finalized in the next NPC Meeting. Once this is agreed upon, POSOCO would submit the necessary feedback once again to the Hon'ble CERC for consideration & further directions.

सादर धन्यवाद,

भवदीय

देबाशिस दे

कार्यपालक निदेशक, रा.भा.प्रे.के.

Enclosures: As above

Annex-1

पावर सिस्टम ऑपरेशन कॉर्पोरेशन लिमिटेड
(भारत सरकार का उद्यम)
POWER SYSTEM OPERATION CORPORATION LIMITED
(A Govt. of India Enterprise)

पंजीकृत एवं केन्द्रीय कार्यालय : प्रथम तल, बी-9, कुतुब इंस्टीट्यूशनल एरिया, कटवारिया सराय, नई दिल्ली-110016
Registered & Corporate Office : Ist Floor, B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi -110016
CIN : U40105DL2009GOI188682, Website : www.posoco.in, E-mail : posococc@posoco.in,Tel.: 011- 41035696, Fax : 011- 26536901

संदर्भ संख्या: पोसोको/एनएलडीसी/2018/ 329 दिनाँक: **09th November, 2018**

सेवा मे,

Director,
National Power Committee,
NRPC Building,
3rd Floor, Katwaria Sarai,
New Delhi-110016

(Kind Attn: Sh. Irfan Ahmad)

विषय: Agenda Note on National Energy Account & National Deviation Pool Account for 8th Meeting of National Power Committee.

संदर्भ: NPC letter no: 4/MTGS/NPC/CEA/2018/1122-1123 dtd. 01st Nov, 2018

महोदय,

With reference to the above mentioned NPC communication dated 01st November 2018, an Agenda note on National Energy Account & National Deviation Pool Account for the forthcoming 8th Meeting of National Power Committee is enclosed.

सादर धन्यवाद,

भवदीय,

समीर सक्सेना
09/11/18.

(एस. सी. सक्सेना)
उप महाप्रबंधक (एन एल डी सी)

Encl: As above

Copy to: Chief Engineer, National Power Committee, NRPC Building, 3rd Floor, Katwaria Sarai, New Delhi-110016

National Energy Account & National Deviation Pool Account

Agenda Note for 8th Meeting of the National Power Committee (NPC)
30th November 2018, Guwahati

1. Establishment of National Grid

In the sixties, the country's electricity grid was demarcated into five electrical regions and Regional Electricity Boards were formed. In order to facilitate inter-state power transactions and the development of regional grids, Govt. of India funded construction of a number of inter-state lines. Subsequently multi-beneficiary Central Sector generating stations were developed by utilities like NTPC, NHPC etc. along with associated transmission system for evacuation of power. The concept of regional energy accounting (earlier known as global accounting) was developed with boundary metering of all control areas.

Till late nineties, power system was planned on regional self-sufficiency basis and there were very few inter-regional links. With more and more inter-regional inter-connections coming up, the focus now shifted to formation of a strong National Grid. Initially, HVDC was used to interconnect two regions, e.g., NR-WR, NR-ER, WR-SR, etc. Gradually, AC interconnections also came up and by August 2006, all regional grids except SR were interconnected synchronously into two synchronous systems known as NEW and SR Grids. The strong HVDC links connecting the NEW grid to Southern region are extensively used for optimizing power flows in the NEW grid. With strong AC connections between the regions constituting the NEW grid as well as extensive use of HVDC links in real time operation, inter-regional schedules lost any physical relevance. All the five regional grids in the country were progressively interconnected using AC links and these are now operating as one synchronism system since December 2013. The situation has become more complicated with direct HVDC connections between NER and NR.

2. Existing Scheduling, Metering, Accounting and Settlement Systems

Availability Based Tariff (ABT) was implemented in stages, starting with Western Region in July 2002. With implementation of ABT, the concept of Unscheduled Interchange (UI) pool came up and all RLDCs started operating regional UI pool accounts, which were subsequently known as the "Regional Deviation Accounts". Deviations from the schedules are computed using the net injection/drawal for using boundary metering for each control area. Based on deviations from schedule, utilities pay UI charges to or receive UI charges from the regional UI pool account.

Short-term open access in inter-state transmission was introduced in May 2006 and with this, scheduling of market-based trades/transactions also commenced. Further, in 2008, multiple Power Exchanges were also implemented. Corridor wise margin declaration for market-based transactions was carried out along with net import/export capability for regions for administering the short-term open access transactions. Later from 2009 onwards, long-term and medium-term transactions also commenced within one region and between different regions. Corresponding scheduling on the inter-regional links was carried out for these transactions on a corridor-wise basis e.g., WR-NR, ER-SR, etc. Presently, while corridor wise TTC/ATC are being declared, net import/export margins for the region are being used for administration of short-term transactions.

Special energy meters have been installed at both ends of inter-regional / inter-state tie lines and all inter-connections of CTU system with ISGS as well as states / other entities whose accounting is done at regional level. As specified in the IEGC, meter readings are sent to respective RLDCs by different sub-stations of CTU / ISGS / states. The meter readings are processed at RLDCs and forwarded to respective RPC secretariat for preparation of weekly deviation account. The RPC secretariats issue deviation accounts based on which different utilities pay /receive deviation charges to / from deviation pool account. These also included settlement of inter-regional deviations between neighboring regions. The regional UI pools are being operated satisfactorily and have successfully served the purpose for the last many years.

The deviation rate vector is declared upfront by the CERC from time to time. Prior to 2008, with uniform rates for deviation, the total payable and receivables were supposed to be equal making it a zero-sum game. However, due to difference in estimated loss and actual loss as well as metering errors, total UI/deviation charges payable did not match with total UI/deviation charges receivable. Based on methodology decided in RPC forum, suitable adjustment is done to make total UI charges payable equal to the UI charges receivable. Thus, the UI pool accounts had been zero balance accounts traditionally since introduction of ABT up to 2008.

Regional UI pool accounts became a non-zero sum game since 7th January 2008 with introduction of UI rate cap for Central generating stations with coal or lignite firing and stations burning only APM gas. UI rate cap was retained in the UI regulations, 2009. Further, as per the UI regulations, 2009, additional UI charge is payable by over-drawing or under-injecting utilities based on specified volume limits and frequency bands. Thus a surplus is generated in the UI/deviation pool.

An important feature of the UI accounts issued by RPCs is treatment of inter-regional transactions. The following methodology is followed by the RPCs in this regard:

- No adjustment is done in UI charges payable to / receivable from other regions (otherwise this may lead to an iterative process)
- UI charges payable to other regions has highest priority i.e. UI charges received in UI pool account is used first to clear dues to other regions.

Schedules are reconciled between RLDCs and thereafter final schedules are issued. Moreover, same meter readings are used by both connected regions for computation of UI/deviations. Hence it is expected that normally there should not be any mismatch between UI charges payable / receivable by adjacent regions connected through AC links.

At present, RPCs of each region prepare and issue UI/deviation accounts considering neighboring region as control areas (similar to states within the region). Sometimes, there are cases of mismatch between UI/deviation payable/receivable as per accounts issued by two RPCs of adjacent Regions and reconciliation of accounts by RPCs prior to issuance is required to be done.

Settlement of UI/deviation charges is done between the regions on one to one basis. For example, UI/deviation pool of ER has to pay to or receive from 4 different UI pools (NER, NR, SR, WR). This leads to multiple financial transactions in terms of money flow between regions. There are

instances of circular flows of funds between regions which needs to be avoided. An example of such circular flow of funds between the regions is illustrated in Annex – 1.

The above methodology is gradually losing its relevance with the five regions connected synchronously as power can flow from one region to another via a third region leading to circular and multiple fund transactions. These 'tandem' money transactions between the regions at times also leads to issues in disbursal within the regions.

3. Mandate for NLDC

Section 26 of Electricity Act, 2003 mandates the following:

"Section 26. (National Load Despatch Centre): --- (1) The Central Government may establish a centre at the national level, to be known as the National Load Despatch Centre for optimum scheduling and despatch of electricity among the Regional Load Despatch Centres.

(2) The constitution and functions of the National Load Despatch Centre shall be such as may be prescribed by the Central Government:

Provided that the National Load Despatch Centre shall not engage in the business of trading in electricity.

(3) The National Load Despatch Centre shall be operated by a Government company or any authority or corporation established or constituted by or under any Central Act, as may be notified by the Central Government."

Subsequently vide notification dated 2nd March 2005, the Central Government has notified National Load Despatch Centre Rules 2004, which prescribes functions of NLDC. The functions include following (relevant extracts):

- *Scheduling and dispatch of electricity over inter-regional links in accordance with grid standards specified by the Authority and Grid Code specified by the Central Commission in coordination with Regional Load Despatch Centres.*
- *Coordination with Regional Load Despatch Centres for achieving maximum economy and efficiency in the operation of National Grid.*
- *Supervision and control over the inter-regional links as may be required for ensuring stability of the power system under its control*
- *Coordination with Regional Load Despatch Centres for the energy accounting of inter-regional exchange of power*
- *Coordination for trans-national exchange of power*

From the above mandate it is evident that just as the RLDCs/RPCs are responsible for scheduling, metering, accounting and settlement at the Regional level, NLDC has been made responsible at the inter-regional and trans-national levels. The corresponding roles pertaining to inter-regional and trans-national transactions accounting and settlement need to be taken up at the National level by the NLDC and NPC.

4. Trans-National/Cross-Border Interconnections

At present, India has cross-border interconnections with Nepal, Bhutan, Bangladesh and Myanmar. Briefly, the connectivity of these countries with various regional grids in India is as follows:

- Nepal: With Northern region and Eastern Region
- Bhutan: With Eastern region
- Bangladesh: With Eastern region and North-Eastern region
- Myanmar: With North-Eastern region

In future, other neighboring SAARC countries like Bangladesh and Pakistan may have connectivity with two different regions of India. For the purpose of cross-border interconnections, the country needs to be treated as a single control area for the purpose of transnational exchanges and transactions have to be reconciled on National basis. Further, in line with the mandate provided, NLDC is responsible for all trans-national exchanges.

5. Changing Scenario & Increasing Complexities

A vibrant electricity market is functioning in the country and many regulatory changes have been implemented to address new challenges from the changing scenario which is also leading to increased complexities. Some of the significant changes that have already been implemented at the National level and some future challenges are briefly discussed below.

(a) **Collective Transactions through Power Exchanges:** Open Access Regulations, 2008 issued by CERC paved the way for functioning of power exchanges. As per the Regulations and procedures issued pursuant to the Regulations, collective (i.e. power exchange) transactions are coordinated by NLDC. Two Power Exchanges are functioning at present and another is in the offing. NLDC accepts scheduling request for collective transactions after checking for congestions, and forwards the same to RLDCs for scheduling. Curtailment, if any, has to be done by NLDC in coordination with RLDCs. Accounting and settlement of the Collective Transactions is carried out by NLDC.

(b) **Ancillary Services (RRAS):** The Regulatory Framework for implementation of Ancillary Services has been provided by the Hon'ble CERC in August 2015 and these have been implemented from April 2016. As per the present framework for ancillary services, available generation (thermal) reserves are dispatched by NLDC across regions on a pan-India basis. In the scheduling process, a virtual entity has been created in each regional pool to act as a counterparty to the ancillary schedules (beneficiaries schedules are not disturbed in the ancillary despatch process). Settlement of ancillary transactions is carried out on a regional basis from the DSM Pool. There are times, when the regional DSM pool faces shortfall and NLDC facilitates transfer of funds from a surplus regional pool to the deficit regional pool as per the provisions of the relevant CERC regulations. Again, this involves multiple fund transfers at times.

(c) **Fast Response Ancillary Services (FRAS):** CERC vide suo-motu order dated 16th July 2018 has directed the implementation of FRAS and pilot project for 5-minute metering. The framework for FRAS provides for fast response ancillary services using the flexibility of hydro generation. The dispatch under FRAS is with the primary objective of obtaining regulation services from hydro while at the same time honoring all the hydro constraints. Scheduling, accounting and settlement of FRAS is to be carried out by NLDC across multiple regions (NR, ER and NER).

(d) **Secondary Frequency Control through Automatic Generation Control (AGC):** Based on the directions of CERC a pilot project for AGC has been implemented at Dadri – Stage II in January 2018. The AGC signals are being sent to the generating station from NLDC and the accounting and settlement for the AGC is being facilitated by NLDC. Based on the experience gained by this pilot project, AGC implementation is being taken up at one generating station in each of the other regions. A second pilot implementation of AGC is expected to be commissioned at Simhadri in November 2018. Implementations in other regions are also coming up progressively. Accounting and settlement of all such implementations have to be facilitated at the national level.

(e) **Proposals under various stages of implementation/deliberations:** Some of the other proposals which are under various stages of deliberations or implementation are as follows:

- Replacement of thermal generation by RE generation (Ministry of Power, April 2018)
- Real Time Markets (CERC, July 2018) for facilitating balancing closer to the time of delivery
- Flexibility in scheduling of thermal generation (Ministry of Power, August 2018) to achieve economy in despatch at the national level
- Security Constrained Economic Despatch (POSOCO, September 2018) to achieve economy in despatch at the national level

Almost all of the above-mentioned proposals are intended for scheduling, despatch, accounting and settlement at the national level. The complexity in settlement needs to be streamlined at the national level keeping in view the changing paradigm and new challenges.

6. National Energy Account and National Deviation Pool Account

In order to streamline the accounting and settlement at the national level there is a need for implementing a National Deviation Pool based on the National Energy Account. In this regard, the following methodology is proposed.

(a) **Scheduling:** Corridor-wise (e.g., ER-NR, etc.) scheduling of inter-regional transactions is presently being carried out. However, actual power flows as per the laws of physics. In case of collective transactions, one to one correspondence of source and sink is not there and scheduling on a particular inter-regional corridor may at best be notional. Hence, there is a need to migrate to scheduling inter-regional transactions on a net basis for each region. However, while accepting the transactions for scheduling, corridor-wise TTC/ATC/available margin etc. may be duly taken care of. Inter-regional corridor-wise schedules may also be continued based on the physical power flow patterns as the same is useful for grid security monitoring and checking for any discrepancies. NLDC shall communicate the net inter-regional schedules to the NPC for the purpose of accounting.

Schedules for cross-border transactions shall also be prepared by NLDC on a net-basis to facilitate accounting of cross-border transactions by the NPC. However, individual schedules of

the concerned neighboring country with different region regions shall also be continued at RLDC level for the purpose of grid security monitoring and checking for discrepancies.

(b) **Metering:** The existing practice for metering of the inter-regional points shall continue as per the IEGC and the SEM data shall be collected by the RLDCs, processed and made available to the RPCs. In addition, the processed meter data shall also be made available to the NPC through NLDC. A similar practice shall be adopted for the cross-border metering locations, where the processed meter data shall be provided by the respected RLDCs to the RPCs and NPC (through NLDC).

(c) **Accounting & Settlement:** Based on the scheduling and meter data provided, NPC shall prepare the National Energy Account (NEA) including the National Deviation Account for the inter-regional and trans-national transactions. The NEA will reflect the payables/receivables for each region on a net-basis and this amount shall be payable/receivable to the National Deviation Pool Account which shall be operated by NLDC. The NEA shall also reflect the cross-border or trans-national transactions and the neighboring countries shall be paying/receiving to/from the National Deviation Pool Account operated by NLDC. Payment to the National DSM Pool shall have the highest priority.

In the future, multi-lateral transaction between neighboring countries are also envisaged under the SAARC framework e.g., Bangladesh may purchase power from Nepal or Bhutan through India. Neighboring countries may also participate in a designated Power Exchange for cross-border transactions in the future. For scheduling and settlement of such transactions, the all-India loss figures would need to be declared upfront by NLDC.

(d) **Handling Surplus/Deficit in Regional Pool Accounts and transfer of residual to PSDF:** As has already been mentioned above, sometimes the regional DSM pool may face shortfalls on account of disbursals for reliability support such as RRAS, FRAS, AGC, etc. in accordance with the relevant regulations of CERC. Once the National DSM Pool becomes operational, all residual/surplus amount in the regional DSM pools shall be transferred to the National DSM pool account. The NPC accounts would also facilitate the transfer of funds from the surplus available in the National DSM pool to the deficit regional DSM pool accounts as a single transaction thereby simplifying the process. Once all liabilities have been met, any residual in National DSM Pool shall be transferred periodically to the PSDF in accordance with the extant CERC Regulations.

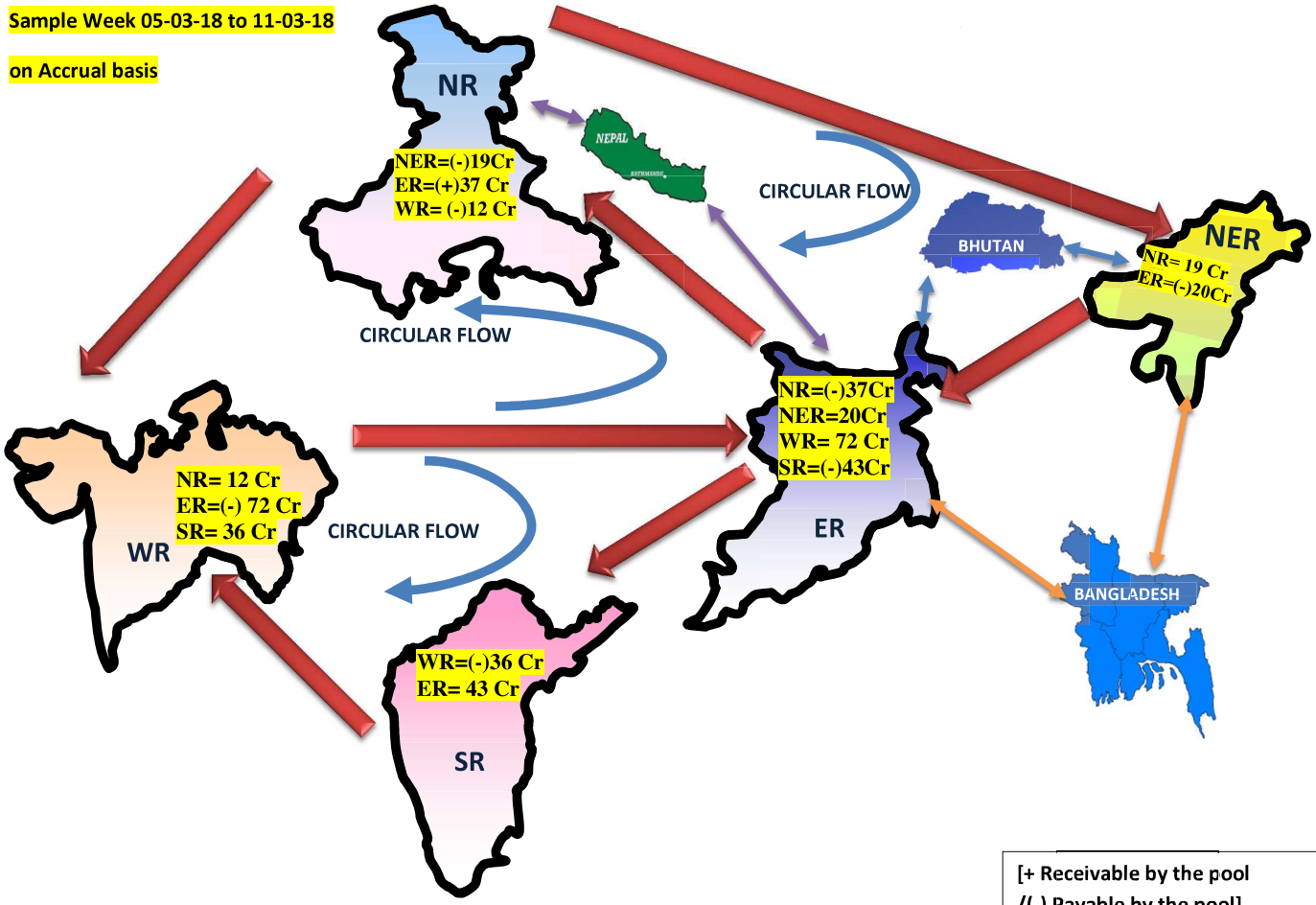
A sample illustration of the flow of funds between different regional DSM pool accounts to the national DSM pool account and that with the neighboring countries is shown at Annex – II.

Suitable changes/modifications are required to be carried out in the IEGC and DSM Regulations and the functions of NPC also need to be recognized in the regulatory framework.

Annex - I

Sample Week 05-03-18 to 11-03-18

on Accrual basis

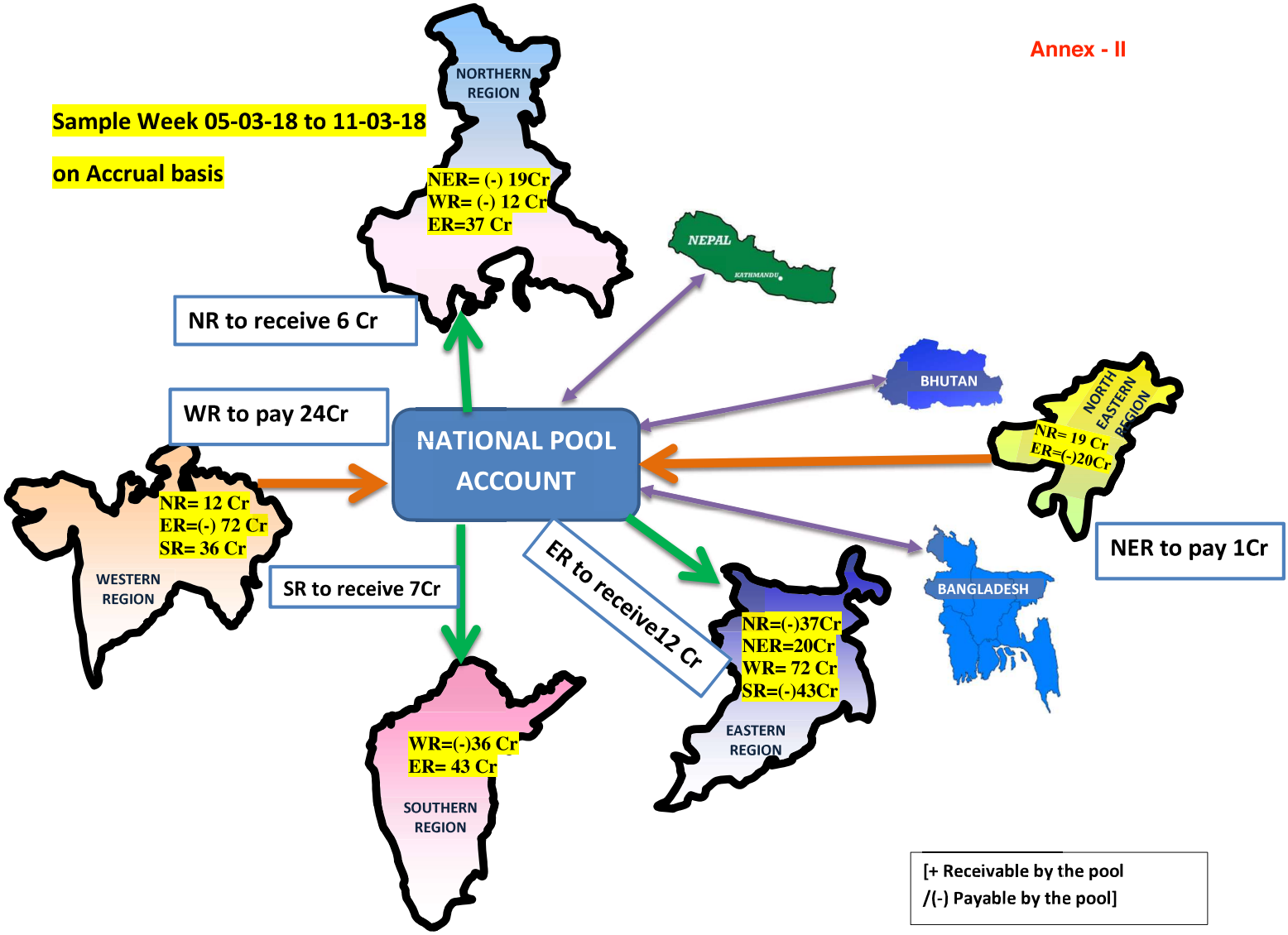


[+ Receivable by the pool
/(-) Payable by the pool]

Annex - II

Sample Week 05-03-18 to 11-03-18

on Accrual basis



[+ Receivable by the pool
/(-) Payable by the pool]

ANNEXURE-IV
DRAFT

No. A-60016/24/2012-Adm-I
Government of India
Ministry of Power

New Delhi, Dated:

O R D E R

Subject: Establishment of National Power Committee (NPC).

Keeping in view the ever growing complexity of Power System, synchronous mode of operation of the entire grid of the country and to evolve a common approach to issues related to reliability and security of the grid, it has been decided with the approval of the Competent Authority to establish National Power Committee (NPC). The composition of the Committee shall be as under:

1. Chairperson, CEA	Chairperson of NPC
2. Member (GO&D), CEA	Member
3. Chairperson of each of NRPC, WRPC, SRPC and ERPC	Member
4. Representative of Chairperson, NERPC	Member
5. TCC Chairperson of each RPC (NRPC, WRPC, SRPC, ERPC, NERPC)	Member
6. Member Secretary of each of NRPC, WRPC, SRPC, ERPC & NERPC	Member
7. ED, NLDC, POSOCO	Member
8. Chief Operating Officer, CTU	Member
9. Chief Engineer (NPC Div, CEA)	Member Secretary

2. NPC shall carry out following functions for integrated operation of the power system of the country:

(i) To resolve issue among RPCs; and

(ii) Discuss and resolve issues referred to NPC requiring consultation among one or more RPCs, concerning inter-alia inter-regional implication or any other issue affecting more than one region or all regions.

(iii)Preparation and issuance of National Energy Account (NEA) for inter-regional and inter-national energy transactions by NPC Secretariat.

P.T.O

3. Decision taken in the NPC shall be considered concurred by respective RPCs for implementation.

4. The Conduct of the Business Rule (CBR) for NPC providing for establishment of the secretariat of NPC, procedure for conduct of meetings of NPC, funding etc. is at Annex.

( )
Deputy Secretary to Govt. of India
Tel No.

To:

1. Chairperson, CEA
2. Member (GO&D), CEA
3. Chairperson of NRPC/WRPC/SRPC/ERPC/NERPC
4. TCC Chairperson of each of NRPC/WRPC/SRPC/ERPC/NERPC
5. Member Secretary of NRPC/WRPC/SRPC/ERPC/NERPC
6. Chief Engineer (Gird Management Division), CEA
7. Chief Engineer (NPC Division), CEA
8. ED, NLDC, POSOCO
9. COO, CTU

Copy to

1. PS to MOS (P) (I/C)
2. PS to Secretary (Power)/ PPS to AS (DC)/ PSO to AS (AL)
3. All Joint Secretaries, Ministry of Power
4. All Directors/ Deputy Secretaries, Ministry of Power

( )
Deputy Secretary to Govt. of India
Tel No.

DRAFT

Annex to Order No. No. A-60016/24/2012-Adm-I dated ----------

National Power Committee

Conduct of Business Rules

CHAPTER I

GENERAL

1. Short title and commencement:

These rules shall come into force from the date of its formation i.e. 26-09-2011 and shall remain in force unless otherwise modified.

2. Definitions:

2.1 In these Rules unless the context otherwise requires: -

(a) 'Agenda' means the list of business proposed to be transacted at a meeting of the Committee.

(b) 'Committee' means the National Power Committee

(c) 'Meeting' means a meeting of the Committee convened by Member Secretary after consultation with Chairperson, NPC.

(d) 'Member' means the member of the NPC

(e) 'Rule' means National Power Committee (Conduct of Business) Rules, 2011.

3. Composition of NPC:

1. Chairperson, CEA – Chairperson, NPC
2. Chairperson, NRPC
3. Chairperson, WRPC
4. Chairperson, SRPC
5. Chairperson, ERPC
6. Representative of Chairperson, NERPC
7. Chairperson, TCC of NRPC
8. Chairperson, TCC of WRPC
9. Chairperson, TCC of SRPC
10. Chairperson, TCC of ERPC
11. Chairperson, TCC of NERPC
12. Member (GO&D), CEA
13. Member Secretary, NRPC
14. Member Secretary, WRPC
15. Member Secretary, SRPC
16. Member Secretary, ERPC
17. Member Secretary, NERPC
18. ED, NLDC, POSOCO
19. Chief Operating Officer, CTU
20. Chief Engineer, NPC Div., CEA – Member Secretary, NPC

4. Functions of NPC

NPC shall carry out following functions for integrated operation of the power system of the country:

(i) To resolve issue among RPCs

(ii) Discuss and resolve issues referred to NPC requiring consultation among one or more RPCs, concerning inter-alia inter-regional implication or any other issue affecting more than one region or all regions

(iii) Preparation and issuance of National Energy Account (NEA) for inter-regional and inter-national energy transactions by NPC Secretariat.

Decisions taken in the NPC shall be considered concurred by the respective RPCs for implementation.

5. Secretariat of NPC

Secretariat of NPC will be provided by CEA and Chief Engineer (NPC Division), CEA will be Member Secretary. Secretariat shall perform the following duties namely:

a) Keep custody of records of proceedings of the Committee meetings.

b) Prepare agenda for the Committee meetings.

c) Prepare minutes of Committee meetings.

d) Take follow-up action on the decision taken in the Committee meetings.

e) Collect from constituent members or other offices or any other party as may be directed by Committee, such information as may be considered useful for the efficient discharge of functions of the Committee and place the information before the Committee.

f) Collection of data from NLDC on weekly basis (Interregional and International scheduled energy and actual energy data)

g) Preparation of Weekly NDSM and Reactive Energy Account (if required)

f) Preparation of monthly NEA

6. Sub-Committees of NPC

To deal with matters pertaining to the energy accounting and related issues there shall be a commercial sub-committee with the members drawn from representatives of each RPC Secretariat, RLDCs and NLDC. The commercial sub-committee shall be headed by the Chief Engineer (NPC Division), CEA. NPC can create other Sub-Committees to deal with matters pertaining to operation and protection issues on national basis.

CHAPTER II
PROCEDURE FOR CONDUCTING NPC MEETINGS

7. Place and date of NPC Meeting

The place and date of the meeting shall be decided by Chairperson, NPC

8. Notice for the Committee Meetings and Agenda

8.1 Notice for the Committee meetings shall be issued by Member Secretary, NPC at least 25 days in advance in consultation with Chairperson, NPC. In case of emergency meetings required to be conducted to carry out urgent business, notice of one week is to be given.

8.2 The Agenda points for the meeting shall be sent to the Member Secretary by the members at least 20 days in advance of the meeting. The Member Secretary, NPC shall finalize the agenda and circulate the same to all its members at least 10 days in advance before the meeting.

8.3 Agenda for Committee meeting shall generally be put up after discussions in RPC.

8.4 Member Secretary, NPC may also put any agenda involving urgent matters/policy issue directly in consultation with Chairperson, NPC.

8.5 Member Secretary, NPC may convene a meeting at short notice on any urgent matter in consultation with Chairperson of the NPC.

9. Effect of Non-receipt of Notice of Meeting by a Member

The non-receipt of notice by any member of NPC shall not invalidate the proceeding of the meeting or any decision taken in the meeting.

10. Cancellation / Re-scheduling of Meeting

If a meeting is required to be cancelled or rescheduled the same shall be intimated to the members at the earliest by telephone / fax/ email.

11. Periodicity of Meetings

The Committee members shall meet at least once in six months. However, the Committee may meet any time to discuss any issue as and when required in consultation with Chairperson, NPC.

12. Quorum of NPC Meeting

11.1 The quorum of the meeting shall be 50% of its members.

11.2 NPC would take decisions based on majority/ general consensus of the strength present.

11.3 Members of NPC and NPC Secretariat shall participate in Committee Meetings. The Special invitees by the Committee may also attend the meeting.

13. Presiding Authority

13.1 The Chairperson, NPC shall preside over the meeting of NPC and conduct the meeting. The Member Secretary, NPC shall assist the Chairperson of NPC in conducting the meeting. If the Chairperson is unable to be present at the meeting for any reason, Member (GO&D) would preside over the meeting.

13.2 In the absence of Member Secretary, NPC, Director (NPC Div.), CEA shall function as Member Secretary to assist Chairperson, NPC.

14. Recording of the Minutes

The minutes of the meeting shall be finalized and circulated to all its members by the Member Secretary, NPC normally within 15 working days from the date of the Committee Meeting.

15. Confirmation of the Minutes

Minutes of the NPC meeting shall be placed in the next meeting for confirmation. However, in case of urgency the minutes may be confirmed by circulation.

16. Funding

Requirement of funds for hosting the meetings of NPC would be met through CEA's budgetary provisions. However, NPC may decide to create a fund for NPC in future for establishment expenses of its Secretariat.

CHAPTER III
MISCELLANEOUS

17. Savings of inherent Power of the NPC

17.1 Nothing in these Rules shall bar the NPC from adopting a procedure that is at variance with provisions of these Rules, if the NPC in view of the special circumstances of a matter or class of matters deem it necessary or expedient to deal with such a matter or class of matters.

17.2 Nothing in these Rules shall expressly or by implication, bar the NPC to deal with any matter or exercise any power for which no Rules have been framed and NPC may deal with such matters, and functions in a manner it thinks fit.

( )
Deputy Secretary

ANNEXURE-V **E-Mail**

भारत सरकार केंद्रीय विद्युत प्राधिकरण दक्षिण क्षेत्रीय विद्युत समिति 29, रेसकोर्स क्रास रोड बेंगलूर009 560 -	सत्यमेव जयते	Government of India Central Electricity Authority **Southern Regional Power Committee** 29, Race Course Cross Road Bengaluru-560 009
Email:mssrpc-ka@nic.in		Phone: 080-22287205
सं/No. SRPC/42(SRPC)/2022/		दिनांक /Date **05th July 2022**

सेवा में / To

मुख्य अभियंता /The Chief Engineer
राष्ट्रीय विद्युत समिति प्रभाग /NPC Division
केंद्रीय विद्युत प्राधिकरण /Central Electricity Authority
सेवा भवन, आरपुरम.के./ Sewa Bhavan, R.K.Puram
नई दिल्ली / New Delhi-110 066

Subject: Membership for RE Generators in RPC forum- reg.

Ref: Minutes of 11th meeting of NPC Item No.18

मोहदया /Madam,

As you are kindly aware, in the 11th meeting of NPC (28.02.2022), it was observed that the issue of membership of RE generators in RPC forum needs deliberation at the RPC level first and afterward may be discussed at NPC level.

Accordingly, this issue was discussed in the 42nd meeting of SRPC (04.06.2022), wherein, after detailed deliberation, SRPC recommended the following:

"**Membership of two (02) RE generators with a threshold of 1000 MW (and above) installed capacity in the region on rotational basis. The participation of such generators would be limited to technical and operational issues**".

भवदीय/Yours faithfully,

(असित सिंह/ Asit Singh)
सदस्य सचिव/Member Secretary

Copy for kind information to:
Member (GO&D), CEA, New Delhi