

## **NORTHERN REGIONAL POWER COMMITTEE**

### **Agenda for Special meeting on issues related to discoms to be held on 30.07.2018 at NRPC, New Delhi.**

**Date & time: 30-07-2018 at 11.00 hrs.**

**Venue: NRPC Secretariat, New Delhi**

Brief of NRPC:

Northern Region Power Committee(NRPC) facilitates the integrated operation of the power system in Northern Region. NRPC may from time to time, agree on matters concerning the stability and smooth operation of the integrated grid and economy and efficiency in the operation of the power system in the Northern Region. Members of NRPC include the State Generating Company, State Transmission Utility(STU), State Load Dispatch Centre(SLDC), one of the state distribution companies as nominated by the State Government from each of the states in the region and one Distribution Company by alphabetical rotation out of the private distribution companies functioning in the region. Thus, in NRPC there is representation from each field in power system which enables better inter-agency coordination. NRPC can deliberate and agree by consensus on any operational issue of power sector in Northern region which facilitates development of integrated system and its smooth operation.

**Agenda items:**

- 1. Mismatch in slot wise drawl data provided by NRPC and data indicated by SLDC website and other issues related to scheduling (Agenda by HPPC/ Haryana Discoms):**
  - 1.1. There is significant mismatch in the slot wise drawl data (as provided by NRPC and as that recorded by SLDC website). There is no particular trend in the above mismatch and is random in nature. Comparison for the date 28.06.18 is attached at ANNEXURE 1.1
  - 1.2. During the period RTUs remain suspected; their values are not replaced resulting in incorrect scheduling. This period sometimes is more than 24 hours as damaged fiber optic cable requires significant time for detection and jointing. This leads to incorrect display of drawl data and hence incorrect imposition of UI charges. There is no intimation from NRLDC regarding the time from when the suspected RTUs have been set right.
  - 1.3. Schedules on the WRLDC & NRLDC are not updated simultaneously in the same revision (even after the inception of new scheduling website). This leads to confusion in the minds of NRLDC control room as well as SLDC control room which results in either incorrect decision of opening of lines for immediate load shedding or adding extra load to control UI. Simultaneous updation of NRLDC and other RLDCs is therefore essential.
  - 1.4. The day ahead revision (R1) is received normally at 2300 Hrs or even after that for the next day, which often leads to incorrect scheduling during the period 0000 to 0100 Hrs. Therefore the main revision for day ahead schedule should be uploaded/ posted before 2300 Hrs on regular basis to enable proper day ahead scheduling.
  - 1.5. During the event of load crash arising out of weather disturbance, NRLDC should get the backing down/ surrender of powers before 4 time slots in order to contain the excessive under drawl in relatively shorter period for CGS powers of other regions.

- 1.6. Powers viewed under the URS head on the NRLDC website by the Discoms are different for SLDC control room leading to incorrect raising of URS requisitions. It is requested that this ambiguity be removed at the earliest for raising proper requisitions of available URS power.
- 1.7. Units of NTPC Aravali seldom give status update in the availability of their units (after tripping/ shutdown) and information regarding their light up/ synchronization schedule which poses problem in economic power planning. This updation of unit status is therefore essential and should be emailed on real time basis.
- 1.8. There have been several instances where boxing up message given to NTPC Aravali units are not complied with leading to merit order violation and subsequent audit objections. There is a need for clear cut guidelines for boxing up of NTPC Aravali units and their bringing on bar, which should be adhered to.
- 1.9. The recently drafted UI amendment dated 29.06.2018 may not be adopted till the time real time SEM meter data is made available to the Discoms as otherwise the levy of UI settlement charges payable or receivable would be based on data which is not made available to the Discoms on real time basis.

**Participants may kindly deliberate.**

**2. Agenda points by PSPCL, Punjab:**

- 2.1. Status of FGD installation vis-à-vis installation plan at identified TPS. (PSPCL's Generating Stations/IPP's having PPAs with PSPCL)
- 2.2. Automatic Demand Management System. (Status of implementation by Discom)
- 2.3. Requirement of Data for the GIS based Energy map being developed by Energy division of NITI Aayog. (Data relates to 33 kV & 66 kV Substations under DISCOMs)
- 2.4. Schedule of FGD Installation in thermal plants & its tariff impact. (PSPCL's Generating Stations/IPP's having PPAs with PSPCL)
- 2.5. Reactive power response of generating stations. (PSPCL's Generating Stations/IPP's having PPAs with PSPCL)
- 2.6. Identification of 11 kV feeders that can remain connected during thunderstorm/wind storm. (PSPCL's Generating Stations/IPP's having PPAs with PSPCL)
- 2.7. FRC Response of generators. (PSPCL's Generating Stations/IPP's having PPAs with PSP)

**PSPCL may coordinate with its IPPs & Generating stations and provide the updated data, to be discussed in the meeting.**

Punjab DISCOM may kindly furnish the information.

**3. Pilot Project on 05-Minute Scheduling, Metering, Accounting and Settlement for Thermal/Hydro, and on Hydro as Fast Response Ancillary Services (FRAS)**

- 3.1. The Forum of Regulators (FOR) had constituted a "Technical Committee for Implementation of Framework on Renewables at State Level" The technical committee highlighted the need to move to 5-minute scheduling and settlement in view of the increasing RE penetration. Subsequently, a sub-group was constituted to examine the various aspects of migrating from

15-minute to 5-minute scheduling, metering, accounting and settlement at the inter-state level to facilitate large scale integration of renewables

- 3.2. The sub group published its report on “Introduction of Five Minute Scheduling, Metering, Accounting and Settlement in Indian Electricity Market” in January 2018. As per the timelines stated in the report, migration from 15-minute to 5-minute scheduling would be completed by April 2020.
- 3.3. CERC in its order related to Petition No. 07/SM/2018 (Suo-Motu) has decided to implement a pilot project on 5- minute scheduling and Hydro Power as FRAS. The stations in NR identified for the pilot project are NTPC Dadri (15 Nos.) and THDC Tehri (2 Nos.).
- 3.4. The order states that 5-minute metering would be in parallel with 15-minute metering. The Scheduling and Despatch would be aligned with Settlement process in 5-minutes too and the accounts of both 5-minute and 15-minute shall be kept parallel.
- 3.5. All future procurements of Interface Energy Meters should ideally have recording at 5- min interval and frequency resolution of 0.01 Hz. They should be capable of recording Voltage and Reactive Energy at every 5-min and should have feature of auto-time synchronization through GPS.
- 3.6. The “Technical Specification for Interface Energy Meters, Automated Meter Reading System and Meter Data Processing for Inter State System in Western Region”, approved in the 34thTCC/WRPC meeting held on 27-28 July 2017 in Mumbai are to be used for the pilot projects.
- 3.7. As and when CEA Metering Standards for Interface Meters to facilitate 5-minute metering are notified, the same shall be adopted for the pilot projects which have not been taken up till the date of notification of CEA standards. CEA has been requested to expedite the notification of amended Metering Standards for interface metering with 05-minute capability.
- 3.8. CTU shall facilitate the pilot project with installation of 5-minute meters at the pre-identified locations. The cost of such procurement shall be reimbursed to the CTU.

**Participants may kindly discuss.**

**4. Discrepancy in computation of PAFM for Hydro Plants (Agenda by BRPL)**

There is a substantial variation in declared capacity (DCs) & PAFM of some of the hydro plants for the month of April-18, May-18 & June-18.

Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2014 clause 31(3) with respect to determination of plant availability for hydro plants has been reproduced below

“.....

3. The PAFM shall be computed in accordance with the following Formula:

$$PAFM = \frac{10000 \times \sum_{i=1}^N DC_i}{N \times IC \times (100 - AUX)} \%$$

Where

*AUX = Normative auxiliary energy consumption in percentage*

*DC<sub>i</sub> = Declared capacity (in ex-bus MW) for the *i*th day of the month which the station can deliver for at least three (3)hours, as certified by the nodal load dispatch centre after the*

**day is over.**

*IC = Installed capacity (in MW) of the complete generating station*

*N = Number of days in the month*

.....”

On the basis of above, BRPL has computed the DC of hydro plants for ith day of month on the basis of DC declared by them for **continuous 3 hrs** accordingly their PAFMs are computed for the month of April-18 & May-18, where BRPL has observed some mismatches in PAFM as per REA issued by NRPC.

Plant wise PAFM mismatches are as below

Plant Name	Type of Plant	Apr-18			May-18			Jun-18		
		As per NRPC REA	Case-1	Diff wrt Case 1	As per NRPC REA	Case-1	Diff wrt Case 1	As per NRPC REA	Case-1	Diff wrt Case 1
BSIUL	Pondage	86.30%	49.07%	37.23%	79.04%	38.89%	40.15%	70.10%	43.95%	26.15%
CHAMERA1	Pondage	100.00%	100.00%	0.00%	100.08%	100.08%	0.00%	101.22%	101.21%	0.00%
CHAMERA2	Pondage	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	94.22%	97.60%	-3.37%
CHAMERA3	Pondage	100.00%	100.00%	0.00%	100.38%	100.29%	0.10%	93.80%	97.13%	-3.33%
DHAULINGGA	Pondage	92.50%	92.50%	0.00%	100.00%	100.00%	0.00%	95.90%	100.10%	-4.20%
DULHASTI	Pondage	100.00%	100.08%	-0.08%	102.29%	102.37%	-0.08%	96.46%	97.12%	-0.66%
KOTESHWR	Storage	43.04%	37.12%	5.92%	39.74%	38.20%	1.53%	62.15%	61.70%	0.45%
NJPC	Storage	100.83%	107.47%	-6.64%	108.30%	108.30%	0.00%	108.30%	108.30%	0.00%
PARBATI3	Pondage	40.85%	0.00%	40.85%	67.90%	3.55%	64.34%	85.72%	11.16%	74.56%
SALAL	ROR	90.42%	35.38%	55.04%	100.13%	65.39%	34.75%	102.98%	99.43%	3.54%
SEWA2	Pondage	100.00%	100.00%	0.00%	100.32%	100.32%	0.00%	105.30%	105.30%	0.00%
TANAKPUR	ROR	37.49%	26.63%	10.86%	63.32%	38.01%	25.31%	93.54%	70.49%	23.06%
TEHRI	Storage	49.53%	50.36%	-0.83%	52.75%	52.76%	-0.02%	50.98%	50.98%	0.00%
URI	ROR	96.53%	86.01%	10.51%	100.90%	101.06%	-0.16%	95.19%	87.03%	8.17%
URI2	ROR	97.28%	86.07%	11.20%	100.36%	100.36%	0.00%	101.32%	97.99%	3.33%

\* Max value of DC for continuous three hours has been considered under case-1

Further Regulation 6.4 (17) of the Grid Code provides as under:

*“(17) While making or revising its declaration of capability, except in case of Run of the River (with up to three hour pondage) hydro stations, the ISGS shall ensure that the **declared capability during peak hours is not less than that during other hours.** However, exception to this rule shall be allowed in case of tripping/re-synchronization of units as a result of forced outage of units.”*

Perusal of above regulations reveals that except in case of RoR with pondage up to three hours hydro generating stations, DC of a hydro generating station during peak hours should not be less than the DC during off-peak hours. It is recognized by CERC in its order dated 15 May 2018 in petition no19/MP/2017.

On the basis of above BRPL has computed the DC of hydro plants for ith day of month on the basis of DC declared by them during peak hours as specified by NRLDC & accordingly their PAFMs are computed for the month of April-18, May-18 & June-18, where BRPL has observed some mismatches in PAFM as per REA issued by NRPC. Plant wise PAFM mismatches are as below.

Plant Name	Type of Plant	Apr-18			May-18			Jun-18		
		As per NRPC REA	Case-2	Diff wrt Case 2	As per NRPC REA	Case-2	Diff wrt Case 2	As per NRPC REA	Case-2	Diff wrt Case 2
BSIUL	Pondage	86.30%	84.07%	2.22%	79.04%	77.24%	1.79%	70.10%	68.99%	1.11%
CHAMERA1	Pondage	100.00%	100.00%	0.00%	100.08%	100.08%	0.00%	101.22%	101.21%	0.00%
CHAMERA2	Pondage	100.00%	100.00%	0.00%	100.00%	100.00%	0.00%	94.22%	94.26%	-0.04%
CHAMERA3	Pondage	100.00%	100.00%	0.00%	100.38%	100.29%	0.10%	93.80%	93.80%	0.00%
DHAULIGNGA	Pondage	92.50%	92.50%	0.00%	100.00%	100.00%	0.00%	95.90%	95.16%	0.74%
DULHASTI	Pondage	100.00%	100.08%	-0.08%	102.29%	102.37%	-0.08%	96.46%	96.46%	0.00%
KOTESHWR	Storage	43.04%	42.94%	0.10%	39.74%	39.74%	0.00%	62.15%	61.70%	0.45%
NJPC	Storage	100.83%	108.30%	-7.47%	108.30%	108.30%	0.00%	108.30%	108.30%	0.00%
PARBATI3	Pondage	40.85%	27.19%	13.66%	67.90%	37.32%	30.58%	85.72%	42.86%	42.86%
SALAL	ROR	90.42%	47.77%	42.65%	100.13%	58.27%	41.86%	102.98%	93.93%	9.05%
SEWA2	Pondage	100.00%	100.00%	0.00%	100.32%	100.32%	0.00%	105.30%	105.30%	0.00%
TANAKPUR	ROR	37.49%	29.76%	7.73%	63.32%	37.48%	25.84%	93.54%	68.48%	25.07%
TEHRI	Storage	49.53%	49.26%	0.27%	52.75%	52.75%	0.00%	50.98%	50.98%	0.00%
URI	ROR	96.53%	89.51%	7.02%	100.90%	101.03%	-0.13%	95.19%	88.36%	6.83%
URI2	ROR	97.28%	86.39%	10.89%	100.36%	96.99%	3.37%	101.32%	96.98%	4.34%

Case-2- Computation DC based on 3 continuous peak hours declared by NRLDC

#### BRPL request:

**NRLDC is requested to review methodology for computation of PAFM hydro plants. Participants may discuss.**

#### 5. Mismatch in Energy scheduled as per REA and Average DC (Agenda by BRPL)

Hydro plants are must run plants. Energy scheduled by any plant should be equal to Average DC of plant. Based on above principal BRPL was verifying the schedule energy to BRPL from Hydro Plants. Average DC was considered and being a must run plant, average DC of the plants has been considered as the scheduled energy for that day. There is a mismatch in Plant wise calculated MUs and Scheduled energy as per REA (Details given below)

Plant Name	Type of Plant	Apr			May			June		
		REA(Mus)	Based on Average DC	Diff	REA(Mus)	Based on Average DC	Diff	REA(Mus)	Based on Average DC	Diff
BSIUL	Pondage	2.35	2.53	-0.18	2.39	2.42	-0.04	2.2	0.76	1.46
CHAMERA1	Pondage	4.38	13.16	-8.77	6.67	13.61	-6.93	9.5	13.17	-3.67
CHAMERA2	Pondage	5.51	12.34	-6.82	10.05	12.75	-2.70	11.0	10.72	0.26
CHAMERA3	Pondage	3.42	9.08	-5.66	6.49	9.39	-2.89	7.7	7.57	0.16
DHAULIGNGA	Pondage	2.41	10.41	-8.00	4.86	11.46	-6.60	7.9	9.54	-1.68
DULHASTI	Pondage	8.75	15.45	-6.69	16.13	16.01	0.11	14.6	13.75	0.88
KOTESHWR	Storage	5.04	4.99	0.05	4.44	4.42	0.02	4.4	4.40	0.04
NJPC	Storage	11.41	50.35	-38.93	20.76	51.97	-31.21	43.6	53.41	-9.85
PARBATI3	Pondage	1.08	1.07	0.01	2.21	2.19	0.02	3.9	0.00	3.88
SALAL	ROR	17.04	16.85	0.19	27.12	26.86	0.26	40.6	32.13	8.51
SEWA2	Pondage	2.54	4.96	-2.42	1.66	4.96	-3.31	1.3	5.21	-3.95
TANAKPUR	ROR	0.54	0.91	-0.37	0.72	1.43	-0.71	1.7	1.54	0.12
TEHRI	Storage	6.83	15.13	-8.30	5.55	16.52	-10.97	7.5	15.38	-7.87
URI	ROR	14.46	14.29	0.17	17.13	16.93	0.20	14.5	12.81	1.73
URI2	ROR	8.55	8.43	0.12	9.85	9.75	0.11	9.6	8.56	1.05

#### BRPL request

**NRLDC is requested to please look in to matter & clarify the reason for such mismatch Scheduled Energy. Participants may discuss.**

**6. Request for compensation Statement by NRPC (agenda by BRPL)**

As per clause 5 of Appendix II of the Detailed Operating Procedure approved and notified by CERC on 5th May 2017, the generator is allowed to provisionally bill compensation charges which are subject to adjustment in line with compensation statement issued by RPCs. The relevant clause has been reproduced below.

*“5. Calculation of Compensation, Billing and Submission of Data by the Generator*

*(i) Generating station shall calculate the compensation as specified in these procedures and bill the same to beneficiaries along with its monthly bill which shall be subject to adjustment based on compensation statement issued by RPC Secretariat subsequently.”*

NTPC has been billing compensation charges since May'17 onwards. It has been a year since the implementation of compensation charges, however till date NRPC has not issued a compensation statement for plants in the NR region. Whereas other RPCs like ERPC & SRPC have been issuing detailed compensation statements for plants and authenticating the amount payable by each beneficiary.

**NRPC Secretariat is requested to submit the authenticated compensation statement in line with ERPC & SRPC at the earliest. Participants may discuss.**

**7. Request for review of need for compensation Mechanism (Agenda by BRPL)**

As per regulation 8 of CERC tariff regulation FY 2014-19, generating companies have been conducting true-up of controllable operational parameters for sharing gains. BRPL has observed that despite the fact that plants were operating below 85% PLF they have managed to achieve GHR, AUX & SFC considerably better than the normative values.

Plant	PLF	GHR			AUX			SFC		
		Normative	Actual	Difference	Normative	Actual	Difference	Normative	Actual	Difference
FY 2014-15										
NCPP-I	76.65%	2450	2407.06	42.94	8.50	7.97	0.53	0.50	0.116	0.38
FY 2015-16										
KHTPS-II	74.32%	2425	2372.37	52.63	5.75	5.51	0.24	0.50	0.39	0.11
NCPP-I	58.46%	2450	2404.02	45.98	8.50	8.17	0.33	0.50	0.366	0.13
FY 2016-17										
KHTPS-II	77.80%	2425	2393.44	31.56	5.75	5.16	0.59	0.50	0.36	0.14
FY 2017-18										
KHTPS-II	79.60%	2425	2409.36	15.64	5.75	5.54	0.21	0.50	0.27	0.23

It has also been observed that there has been a drastic reduction in credits provided by generating companies on account of true-up of controllable parameters in FY17-18. For example for Dadri-I, in FY 15-16, even though the plant's PLF was 58% BRPL was credited Rs 5.8 Crs on account of true-up of GHR, Aux & SFC. However in FY 17-18 despite the fact



that the said plants PLF was 60% but still BRPL didn't receive any credits on account of true-up of controllable parameters in fact BRPL was charged a compensation of Rs 20.93 Cr for the year. A comparison of the individual parameters has been listed below.

Comparison of operational parameters of Dadri-I for FY 15-16 & FY 17-18					
FY	PLF	GHR	AUX	SFC	Remarks
Normative Values		2450	8.50	0.50	
FY 15-16	58%	2404.02	8.17	0.3659	
FY 17-18	60%	2545.42	8.37	0.5	Since actual SFC values were not mentioned in the compensation sheet, hence normative of SFC has been considered

**Participants may discuss.**

**8. Capping of operational parameters at their normative values while trueing of controllable parameters (Agenda by BRPL)**

BRPL would like to seek clarity that whether generating companies can use value of GHR, Aux & SFC higher than normative value while trueing up of operational controllable parameters. As per regulation 35 of CERC tariff regulation 2014-19 generating companies are mandated to recovery energy cost as per operational norms specified in CERC tariff regulation FY 2014-19.

*35 (1) Recovery of capacity charge, energy charge, transmission charge and incentive by the generating company and the transmission licensee shall be based on the achievement of the operational norms specified in the regulations 36 to 39. "*

While calculating the actual ECR for true-up of controllable parameters the generating companies should not be allowed to consider GHR, AUX & SFC values higher than normative values.

**Participants may discuss.**

**9. Compensation charge levied by APCPL for the period during which BRPL has no allocation from the plant (Agenda by BRPL)**

In light of the recent shift in the mechanism of recovery of fixed cost by thermal plants from cumulative entitlement to monthly entitlement, APCPL has not billed BRPL any fixed cost from 3rd September 2017 to 31st March 2018 as during the stated period BRPL's allocation of power from APCPL was reduced to Zero

It has been observed that while computing compensation charges, APCPL has billed an amount of about Rs 11 Cr on account of compensation charges to BRPL for the stated period. BRPL had no allocation of power from APCPL during the stated period hence BRPL should not be held responsible for low PLF operation of the said plant. Hence, BRPL should not be

made liable to pay for compensation charge beyond 3rd September 2017 in FY 17-18. APCPL may be directed to refund the balance amount of about Rs 11 Cr that has been billed to BRPL, on account of compensation charge, for the mentioned period, at the earliest.

**Participants may discuss.**

**10. TDS deduction in STOA bills raised by POSOCO (Agenda by BRPL)**

POSOCO raise the STOA bills on beneficiaries under its name. As bills are raised by the POSOCO, BRPL is deducting the entire TDS amount under POSOCO PAN only. However, NRLDC is insisting BRPL to deduct TDS separately under the PAN of POSOCO, POWERGRID, STUs and SLDCs.

BRPL has to deduct TDS under the PAN number of the party which has raised the bill in-line with income tax rules and this has already been communicated to POSOCO.

**POSOCO is requested to cooperate with BRPL to resolve the matter amicably. Participants may discuss.**

**11. Genco/Transco Investment Proposal (Agenda by BRPL)**

BRPL has stated that any proposal wrt additional capital expenditure, renovation of old plants, extension of useful life etc. by the generators/transmission companies should be put in the NRPC meetings to appraise the beneficiaries. There should be an appraisal process on case to case basis members with adequate opportunity of representation by beneficiaries and stakeholders. There after it should be taken before the appropriate commission.

**Participants may discuss.**

**12. Bill data to be provided in standard Excel format (Agenda by BRPL)**

Generating & transmission companies raise the bills which are voluminous in nature and are normally provided in hard copy/ PDF formats. It requires lots of time for verification & are prone to errors. Even if PDF formats are converted to excel by convertor, the accuracy of bill data decreases drastically and hence consumes more time for bill verification.

In order to expedite the bill verification process BRPL is developing software for automation of bill verification process. In the prevailing scenario generating and transmission companies are providing voluminous bills in different PDF formats which has emerged as a challenge. Hence generator/transmission companies are requested to provide their bill data in standardized excel format, in addition to the original bills in PDF format, for speedy verification of bills & availing the benefit of rebate scheme.

**Participants may discuss.**



**13. Issue of accounts for Delhi Discoms (Agenda by BRPL)**

In the prevailing scenario Delhi is being recognized as a single entity. The following accounts issued by NRPC reflect values for Delhi as a state despite the fact that each Delhi discom has been operating as a separate entity.

- Compensation Statement
- RRAS Account
- URS Account

The mechanism for the above mentioned accounts are quite complex and time consuming leading to considerable time delays, multi level accounting.

**NRPC Secretariat is requested to publish the bifurcation amongst Delhi Discom for all the above mentioned accounts. Participants may discuss.**

**14. Guidelines and Best Practices for Ease of obtaining electricity connection by consumers (Presentation to be given by CE, DP&R division, CEA)****15. Designing and standardizing Toolkit for Discom Staff (Presentation to be given by CE, DP&R division, CEA)****16. AT&C losses in respect of Discoms**

The AT&C losses of various states of NR as per the data available on the UDAY portal, is given below

State	AT&C losses (%)
Delhi	Not Available
Haryana	20.29%
Himachal Pradesh	3.41%
Jammu & Kashmir	53.78%
Punjab	18.21%
Rajasthan	19.74%
Uttarakhand	15.73%
Uttar Pradesh	27.67%

The main factors contributing for high technical losses are overloading of existing lines and substation equipments, non up-gradation of old lines and equipment, low HT:LT ratio and poor maintenance of equipments. The main factors contributing to high commercial losses are theft, pilferage and tampering of meters, absence of energy accounting and auditing through IT intervention, low accountability of employees etc. As distribution of electricity falls under the purview of State Government, it is the responsibility of the concerned State Government/Distribution Licensee to take necessary steps to reduce the AT&C losses and to

provide reliable and quality power in their area of operation. The following measures may be taken up by the distribution utilities in NR for reduction of AT&C losses:

- (i) Augmentation of overloaded distribution system.
- (ii) Designing of distribution system to achieve high HT/LT ratio.
- (iii) Scheduled repairing and maintenance of lines, transformers &Sub-stations.
- (iv) Replacement of all consumers meters with static meters, improving metering, billing and collection efficiency.
- (v) Metering of all 11 kV feeders &distribution transformers for energy auditing.
- (vi) Implementation of High Voltage Distribution System(HVDS)
- (vii) Use of Aerial Bunched Cable (ABC) in theft prone areas.
- (viii) IT initiative like SCADA, GIS, AMR, etc.
- (ix) Segregation of rural &agriculture feeders.
- (x) Implementation of stringent anti-theft measures.

**DISCOMs may kindly provide reasons for the high/low AT&C losses in their territories and steps taken/ proposed to reduce such losses.**

#### **17. Implementation of DMS and ADMS**

In view of the growing demand and shortage of power in the NR and intermittency of RE power, peak load needs to be managed by adopting suitable demand side management. DISCOMs in NCT-Delhi are already taking various measures in the regard. The DISCOMs in Uttar Pradesh, Haryana and Rajasthan also need to take the necessary steps to adopt/implement the DSM and reduce the peak demand.

Discoms may inform about the steps taken by them for the implementation of Demand Management System and Automatic Demand Management System.

#### **18. Implementation of Smart Grid**

The smart grid will enable optimization of energy generation, transmission, distribution and consumption. It provides an opportunity for energy companies to make power delivery more efficient, whether by minimizing the visits of personnel to transmission and distribution locations or by enabling better decisions through timely information. Automation is the key to development of smart grid. The implementation of automation may be taken up in the selected towns initially which would be the first step towards implementation of smart grid in the NR.

At present, the level of preparedness of distribution sector to adopt smart grid is in a very preliminary stage and every DISCOM has to prepare a clear road map for implementing automation and smart grid in their area of operation along with the financial requirement and sources for the funding to roll out the plan in coming years.

SLDCs/Discoms may update about their strategy and steps taken for implementation of Smart Grid.

**19. Islanding Scheme for Major Cities/Towns**

Islanding scheme is prepared to save small portion of the grid in the event of grid disturbance so as to maintain continuity of supply to critical loads and to also restore the grid. While designing the islanding scheme special attention is given to maintain supply to critical area like hospitals, airports, VIP areas, metro rail, etc.

Islanding scheme for NCT-Delhi has been prepared and the same is under implementation. Islanding schemes for respective sub regions of Haryana, Rajasthan and Uttar Pradesh should be prepared by the concerned states. The islanding scheme has to be approved by the concerned Regional Power Committee. Discoms/SLDCs may provide details of Islanding Schemes in their respective control areas for discussion in the meeting.

**20. Presentation on draft “Central Electricity Regulatory Commission (Deviation Settlement Mechanism and related matters) (Fourth Amendment) Regulations, 2018” (Presentation to be made by NRPC Secretariat)**

**21. Presentation on consultation paper on “CERC, Terms and Conditions of Tariff Regulations (2019-24)” and other regulatory developments (Presentation to be made by NRPC Secretariat)**

**22. Promotion of Renewable Energy in NR.**

The Electricity Act, 2003 has radically changed the legal and regulatory framework for the renewable energy sector. It envisages, inter alia, that State Electricity Regulatory Commissions (SERCs) should take steps to promote renewable and non-conventional sources of energy for electricity generation. Various policies of Government of India such as the National Electricity Policy, Tariff Policy, etc., provide base for promotion and preferential treatment including preferential tariff for power generated from renewable energy sources as well as stipulation of renewable power purchase obligation by SERCs.

NR has a huge potential for tapping solar energy either through PV (Photovoltaic) using the free space on rooftop or ground mounted solar. PV system or through CST (Concentrated Solar Thermal), which can help in cutting down the load demand from grid, saving on T&D infrastructure. The cost of solar power has shown decreasing trend during past few years and possibility of large scale solar application in the long run in the country would further bring down the cost of generation of solar electricity. Taking into consideration the shortage of fuel for conventional power and importance of renewable energy in the NR area, SERCs of the constituent states may consider putting in place the necessary regulations for development of renewable power in the respective states in order to encourage and facilitate expeditious development of off grid/grid connected renewable power generation.

DISCOMs to take initiative in roof top solar and net metering.

**23. Presentation on issues related to discoms (to be made by NRLDC)**

**24. Investment in Distribution & Improving the Financial Health of the DISCOMs**

To augment the existing distribution system to match the demand increase of NR and to provide reliable and quality power to the consumers, systematic growth of the distribution system should be planned. Power Utilities in NR should prepare a bankable distribution plan clearly defining the road map to augment their distribution system to match the expected load demand of the area and to identify land for sub-stations and their timely acquisition so as to avoid time lag in commissioning of the projects. They may approach international financial institutions such as World Bank, ADB, etc. and Indian financial institutions such as Banks, REC and PFC, etc, for funding of their distribution infrastructure.

The following action may be taken up by the concerned States/SERCs for improving the financial health of DISCOMs.:-

- (i) Rationalization of tariff to reduce gap between ARR and ACS.
- (ii) Adequate investment to strengthen distribution network.
- (iii) Formulation of Enforcement Strategy to prevent theft.
- (iv) Real time energy accounting and auditing.
- (v) Adoption of enhanced revenue management techniques
- (vi) Timely payment of subsidy and gradual reduction of the same
- (vii) Managerial intervention and bringing accountability.
- (viii) Cooperation from employees.
- (ix) Sound financial restructuring plan.

**25. Any other issue**

Comparison between NRPC drawl and SLDC drawl (In MW)

ANNEXURE-1

28.6.18											
Time	NRPC drawl	in Lus	SLDC drawl	in Lus	Diff	Time	NRPC	in Lus	SLDC	in Lus	Diff
0:15	5444.50	13.61	5389.70	13.47	54.80	12:30	6309.87	15.77	6288.21	15.72	21.66
0:30	5511.72	13.78	5456.69	13.64	55.03	12:45	6358.30	15.90	6312.96	15.78	45.34
0:45	5224.56	13.06	5199.87	13.00	24.69	13:00	6244.46	15.61	6266.64	15.67	-22.18
1:00	4998.60	12.50	4974.15	12.44	24.45	13:15	6204.83	15.51	6152.40	15.38	52.43
1:15	4946.32	12.37	4919.40	12.30	26.92	13:30	6248.14	15.62	6261.16	15.65	-13.02
1:30	4768.47	11.92	4783.56	11.96	-15.09	13:45	6241.16	15.60	6246.41	15.62	-5.25
1:45	4910.06	12.28	4935.56	12.34	-25.50	14:00	5938.74	14.85	5977.03	14.94	-38.29
2:00	4763.60	11.91	4777.93	11.94	-14.33	14:15	5408.71	13.52	5532.01	13.83	-123.30
2:15	4509.48	11.27	4625.93	11.56	-116.45	14:30	5431.51	13.58	5678.41	14.20	-246.90
2:30	4369.18	10.92	4413.12	11.03	-43.94	14:45	5643.53	14.11	5863.10	14.66	-219.57
2:45	4169.85	10.42	4301.98	10.75	-132.13	15:00	5871.77	14.68	5983.12	14.96	-111.35
3:00	3972.69	9.93	4107.14	10.27	-134.45	15:15	5697.31	14.24	5899.78	14.75	-202.47
3:15	3856.64	9.64	3910.96	9.78	-54.32	15:30	5549.41	13.87	5781.16	14.45	-231.75
3:30	3602.56	9.01	3836.44	9.59	-233.88	15:45	5560.07	13.90	5793.49	14.48	-233.42
3:45	3560.34	8.90	3997.49	9.99	-437.15	16:00	5589.46	13.97	5720.19	14.30	-130.73
4:00	3527.37	8.82	3806.80	9.52	-279.43	16:15	5540.73	13.85	5585.15	13.96	-44.42
4:15	3502.47	8.76	3795.50	9.49	-293.03	16:30	5591.05	13.98	5547.21	13.87	43.84
4:30	3642.05	9.11	3898.94	9.75	-256.89	16:45	5423.92	13.56	5438.48	13.60	-14.56
4:45	3743.18	9.36	4012.10	10.03	-268.92	17:00	5517.34	13.79	5545.13	13.86	-27.79
5:00	3808.74	9.52	4101.83	10.25	-293.09	17:15	5519.72	13.80	5558.74	13.90	-39.02
5:15	3912.83	9.78	4196.28	10.49	-283.45	17:30	5525.90	13.81	5523.83	13.81	2.07
5:30	3943.79	9.86	4229.51	10.57	-285.72	17:45	5500.59	13.75	5497.07	13.74	3.52
5:45	3984.96	9.96	4245.93	10.61	-260.97	18:00	5282.28	13.21	5265.13	13.16	17.15
6:00	3986.61	9.97	4264.11	10.66	-277.50	18:15	5141.96	12.85	5119.99	12.80	21.97
6:15	3716.20	9.29	3980.62	9.95	-264.42	18:30	4901.18	12.25	4867.52	12.17	33.66
6:30	3207.15	8.02	3456.86	8.64	-249.71	18:45	4646.79	11.62	4589.79	11.47	57.00
6:45	2963.79	7.41	3289.33	8.22	-325.54	19:00	4605.66	11.51	4657.25	11.64	-51.59
7:00	3237.49	8.09	3617.24	9.04	-379.75	19:15	5108.09	12.77	5250.30	13.13	-142.21
7:15	3382.18	8.46	3700.40	9.25	-318.22	19:30	5310.41	13.28	5476.77	13.69	-166.36
7:30	3525.08	8.81	3785.34	9.46	-260.26	19:45	4914.02	12.29	4843.43	12.11	70.59
7:45	3738.34	9.35	4020.45	10.05	-282.11	20:00	5062.28	12.66	5191.01	12.98	-128.73
8:00	3952.44	9.88	4251.10	10.63	-298.66	20:15	5268.38	13.17	5319.79	13.30	-51.41
8:15	4141.54	10.35	4386.65	10.97	-245.11	20:30	5375.48	13.44	5404.96	13.51	-29.48
8:30	4307.56	10.77	4634.73	11.59	-327.17	20:45	5423.05	13.56	5474.66	13.69	-51.61
8:45	4334.19	10.84	4657.60	11.64	-323.41	21:00	5545.21	13.86	5606.66	14.02	-61.45
9:00	4442.41	11.11	4777.12	11.94	-334.71	21:15	5587.63	13.97	5638.39	14.10	-50.76
9:15	4534.26	11.34	4792.44	11.98	-258.18	21:30	5615.79	14.04	5623.22	14.06	-7.43
9:30	4599.34	11.50	4885.61	12.21	-286.27	21:45	5596.30	13.99	5640.58	14.10	-44.28
9:45	4694.47	11.74	4980.86	12.45	-286.39	22:00	5531.90	13.83	5523.58	13.81	8.32
10:00	4794.71	11.99	5075.81	12.69	-281.10	22:15	5802.38	14.51	5873.92	14.68	-71.54
10:15	4880.74	12.20	5148.58	12.87	-267.84	22:30	5893.08	14.73	5913.48	14.78	-20.40
10:30	4955.67	12.39	5228.33	13.07	-272.66	22:45	5628.26	14.07	5607.88	14.02	20.38
10:45	5058.85	12.65	5349.54	13.37	-290.69	23:00	5443.18	13.61	5413.47	13.53	29.71
11:00	5152.70	12.88	5405.70	13.51	-253.00	23:15	5542.09	13.86	5515.46	13.79	26.63
11:15	5347.45	13.37	5531.14	13.83	-183.69	23:30	5525.01	13.81	5541.65	13.85	-16.64
11:30	5478.58	13.70	5523.68	13.81	-45.10	23:45	5637.54	14.09	5661.27	14.15	-23.73
11:45	5565.51	13.91	5616.74	14.04	-51.23	0:00	5738.62	14.35	5702.05	14.26	36.57
12:00	5786.69	14.47	5749.88	14.37	36.81	<b>Total</b>		<b>1188.93</b>		<b>1218.36</b>	<b>-29.43</b>
12:15	6069.12	15.17	6142.86	15.36	-73.74						