

**CENTRAL ELECTRICITY REGULATORY COMMISSION
NEW DELHI**

Petition No. 206/MP/2014

Coram:

Shri Gireesh B.Pradhan, Chairperson

Shri A.K.Singhal, Member

Shri A.K.Bakshi, Member

Dr. M.K.Iyer, Member

Date of Order : 16th of September, 2016

In the matter of:

Approval under Central Electricity Regulatory Commission (Grant of Regulatory approval for execution of Inter-state Transmission Scheme to Central Transmission utility) Regulations, 2010 read with Central Electricity Regulatory Commission (Grant of Connectivity, Long Term and Medium Term Open Access to Inter-State Transmission system and related matters) Regulations, 2009 for grant of regulatory approval for execution of Unified Real Time Dynamic State Measurement (URTDSM) Phase-II.

And

In the matter of:

Power Grid Corporation of India Ltd.
B-9, Qutab Institutional Area
New Delhi-110016

.....Petitioner

V/s

- 1) Rajasthan Rajya Vidyut Prasaran Nigam Limited
Vidyut Bhawan, Vidyut Marg
Jaipur-302 005
- 2) Ajmer Vidyut Vitran Nigam Limited
400 kV GSS Building (Ground Floor)
Ajmer Road, Heerapura, Jaipur
- 3) Jaipur Vidyut Vitran Nigam Limited

- 400 kV GSS Building (Ground Floor)
Ajmer Road, Heerapura, Jaipur
- 4) Jodhpur Vidyut Vitran Nigam Limited
400 GSS Building (Ground Floor)
Ajmer Road, Heerapura, Jaipur
- 5) Himachal Pradesh State Electricity Board
Vidyut Bhawan
Kumar House Complex Building II
Shimla-171 004
- 6) Punjab State Power Corporation Limited
Thermal Shed No.- T-1 A
Near 22 No. Phatak, Patiala-147 001
- 7) Haryana Power Purchase Centre
Shakti Bhawan, Sector-6
Panchkula- 134 109
- 8) Power Development Department
Govt. of Jammu & Kashmir
Mini Secretariat, Jammu
- 9) Uttar Pradesh Power Corporation Limited
Shakti Bhawan, 14, Ashok Marg
Lucknow-226 007
- 10) Delhi Transco Limited
Shakti Sadan, Kotla Road
New Delhi-110 002
- 11) BSES Yamuna Power Limited
Shakti Kiran Building, 2nd Floor
Opposite Karkardooma Court
Karkardooma, Delhi-110092
- 12) BSES Rajdhani Power Limited
BSES Bhawan, Nehru Place
New Delhi
- 13) North Delhi Power Limited
Power Trading & Load Despatch Group
Cennet Building, Adjacent to 66/11 kV
Pitampura-3, Grid Building
Pitampura, New Delhi-110034

- 14) Chandigarh Administration
Sector-9, Chandigarh
- 15) Uttarakhand Power Corporation Limited
Urja Bhawan, Kanwali Road
Dehradun
- 16) North Central Railway
Allahabad
- 17) New Delhi Municipal Council
Palika Kendra, Sansad Marg
New Delhi-110 002
- 18) Assam State Electricity Board,
Bijulee Bhawan, Paltan Bazar,
Guwahati- 781 001
- 19) Meghalaya State Electricity Board
Short Round Road
Shillong- 793 001
- 20) Government of Arunachal Pradesh
Vidyut Bhawan, Itanagar
Arunachal Pradesh- 793 001
- 21) Power & Electricity Department
Govt. of Mizoram
Mizoram, Aizwal
- 22) Electricity Department
Govt. of Manipur, Keishampat
Imphal
- 23) Department of Power
Govt. of Nagaland
Kohima, Nagaland
- 24) Tripura State Electricity Corporation Limited
Bidyut Bhawan, North Banamalipur
Agartala, Tripura-799 001
- 25) Bihar State Electricity Board
Vidyut Bhawan, Bailey Road

Patna-800021

- 26) West Bengal State Electricity Board
Vidyut Bhawan, Bidhan Hagar
Block DJ, Sector-II, Salt Lake City
Kolkata-700 091
- 27) Grid Corporation of Odisha Limited
Shahid Nagar, Bhubaneshwar-751 007
- 28) Damodar Valley Corporation
DVC Tower, Maniktala
Civic Tower, VIP Road
Kolkata-700 054
- 29) Power Department
Govt. of Sikkim
Kazi Road
Gangtok- 737 101
- 30) Jharkhand State Electricity Board
In front of Main Secretariat
Doranda, Ranchi-834002
- 31) Madhya Pradesh Power Trading Company Limited
Shakti Bhawan, Vidyut Nagar, Rampur
Jabalpur (MP)-482008
- 32) Maharashtra State Electricity Distribution Co. Limited
5th Floor, Prakashgad
Bandra (East), Mumbai-400051
- 33) Gujarat Urja Vikas Nigam Limited
Sardar Patel Vidyut Bhawan
Race Course Road, Vadodara-390007
- 34) Electricity Department
Government of Goa
Vidyut Bhawan, Panaji
Near Mandvi Hotel, Goa-403 001
- 35) Electricity Department
Administration of Daman & Diu
Daman-396 210
- 36) Electricity Department

Administration of Dadra Nagar Haveli
U.T., Silvassa-396 230

- 37) Chhattisgarh State Power Transmission Co. Limited
P.O. Sunder Nagar, Danganiya, Raipur
Chhatisgaarh-492013
- 38) Madhya Pradesh Audyogik Kendra Vikas Nigam (Indore) Limited
3/54, Press Complex, Agra-Bomaby Road
Indore-452 008
- 39) Kerala State Electricity Board
Vaidyuthi Bhavanam
Pattom, Trivandrum – 695 004
- 40) Tamil Nadu Electricity Board
NPKRR Maaligai, 800, Anna Salai
Chennai-600 002
- 41) Electricity Department
Govt. of Pondicherry
Pondicherry-605001
- 42) Electricity Department
Govt. of Goa
Vidyuti Bhawan, Panaji, Goa-403001
- 43) Transmission Corporation of Andhra Pradesh Limited
Vidyut Soudha, Hyderabad-500 082
- 44) Northern Power Distribution Company of Andhra Pradesh Limited
Opp. NIT Petrol Pump
Chaitanyapur, Kazipet
Warangal-506004, Andhra Pradesh
- 45) Eastern Power Distribution Company of Andhra Pradesh Limited
APEPDCL, P&T Colony
Seethmmadhara, Vishakhapatnam
Andhra Pradesh
- 46) Southern Power Distribution Company of Andhra Pradesh Limited
Srinivassa Kalyana Mandapam Backside
Tiruchanoor Road, Kesavayana Gunta
Tirupati- 517501
Chittoor District, Andhra Pradesh

- 47) Central Power Distribution Company of Andhra Pradesh Limited
Corporate Office, Mint Compound
Hyderabad-500 063, Andhra Pradesh
- 48) Karnataka Power Transmission Corporation Limited
Kaveri Bhavan, Bangalore-560 009
- 49) Bangalore Electricity Supply Company Limited
Corporate Office, K.R. Circle
Bangalore-560 001, Karnataka
- 50) Gulbarga Electricity Supply Company Limited
Station Main Road, Gulbarga, Karnataka
- 51) Hubli Electricity Supply Company Limited
Navanagar, PB Road
Hubli, Karnataka
- 52) MESCOM Corporate Office
Paradigm Plaza, AB Shetty Circle
Mangalore-575 001, Karnataka
- 53) Chamundeswari Electricity Supply Corporation Limited
#927, L J Avenue
Ground Floor, New Kantharaj Urs Road
Saraswathipuram, Mysore-570 009, Karnataka
-Respondents**

Parties Present:

1. Shri S.S.Raju, PGCIL
2. Shri A.K.Hisab, PGCIL
3. Shri S.K.Venkateshan, PGCIL
4. Shri M.M.Mondal, PGCIL

ORDER

The petitioner, Power Grid Corporation of India Limited has filed this petition for grant of regulatory approval under Central Electricity Regulatory Commission (Grant of Regulatory Approval for Execution of Inter-State Transmission Scheme to Central Transmission Utility) Regulations, 2010 read with Central Electricity Regulatory Commission (Grant of Connectivity, Long Term Access and Medium

term Open Access to Inter-State transmission system and related matters) Regulations, 2009 (hereinafter referred to as 'Regulatory Approval Regulations' and 'Connectivity Regulations') for execution of Unified Real Time Dynamic State Measurement (URTDSM) Phase-II (hereinafter referred to as the scheme').

2. The petitioner has made the following prayers among others:

"(a) Grant Regulatory approval for implementation of Phase-II of URTDSM Scheme along with cost estimates, as detailed in the petition;

(b) Grant approval for inclusion of the assets for which the transmission charges are to be recovered through the Point of Connection charges methodology or any other sharing mechanism notified by CERC from time to time;

(c) Approve reimbursement of expenditure towards petition filing fees and publishing notices in terms of Regulation 52 of the (Terms and Conditions of Tariff) Regulations, 2014 in relation to the filing of petition;

And pass such other relief as Hon`ble Commission deems fit and appropriate under the circumstances of the case and in the interest of justice”

3. The scope of work covered under Phase-II of Unified Real Time Dynamic State Measurement Scheme is as under:

(a) Installation of approximately 554 PMUs at sub-stations and Power Plants;

(b) Installation of 11530 km of OPGW and associated items mainly on state/ other utilities lines;

(c) Installation of 326 nos. of SDH equipments and associated items at sub-stations and Power Plants;

(d) Installation of 215 nos. of Auxiliary Power Supply Equipment at

sub-stations and Power Plants.

4. The petitioner has submitted that the Unified Real Time Dynamic State Measurement (URTDSM) Scheme was discussed and finalized in the Joint Meeting of all the five Regional Standing Committees on Power System Planning held on 5.3.2012 which was convened under the aegis of Central Electricity Authority. In the said meeting, it was agreed that the URTDSM scheme would be implemented by PGCIL as system strengthening and cost thereof would be added to the National Transmission Pool account and would be shared by all Designated ISTS customers as per the PoC mechanism under the Central Electricity Regulatory Commission (Sharing of Transmission Charges and Losses) Regulations, 2010. The scheme was agreed to be implemented by PGCIL in the following manner:

(a) In Stage-I, PMUs would be placed at those locations where fiber optic communication links are either available or would be made available under microwave frequency vacating programme and regional strengthening programme by the year 2014-15 along with installation of Phasor Data Concentrator (PDCs) at all SLDCs, RLDCs, NLDC, NTAMC, strategic locations in States, remote consoles at RPCs, CEA, CTU and other locations. Analytics would be developed in parallel with the institutions and in consultation with POSOCO, CEA, RPCs and some of the STUs.

(b) In Stage-II, PMUs would be installed in remaining locations, Optical fiber cables would laid down along with associated terminal equipments for PMU location.

5. The petitioner has submitted that in the said meeting, it was agreed that Power Grid Corporation of India Limited would file the petition before the Commission for grant of regulatory approval for the scheme. Accordingly, PGCIL

filed the petition for grant of regulatory approval for execution of the scheme. The Commission vide order dated 6.9.2013 in Petition No. 129/MP/2012 granted in-principle approval for Phase-I of the scheme and for providing PMU for Phase-II commensurate with the approval of OPGW. The Commission in the said order dated 6.9.2013 observed that Phase-II of the scheme mainly involves laying down of Optical Fibre cables. The petitioner was granted liberty to file a composite scheme for laying of OPGW required for execution of URTDSM and Grid Security Expert System (GSES) with consultation with CEA.

6. The petitioner has submitted that on 14.10.2013, PGCIL approached Central Electricity Authority for approval of requirement of Optical Fibres for execution of URTDSM, GSES and other communication system. CEA vide its letter dated 27.1.2014 concurred the OPGW requirement of 11925 kms under Phase-II of the scheme. The petitioner has submitted that the OPGW requirement concurred by the Commission includes the requirement of 395 kms of Central Sector. Since the OPGW quantity for Central Sector has already been included in the ongoing projects under implementation, 11530 kms of OPGW installation, mainly on State/ other utilities line has been considered for Phase-II of the scheme.

7. The petitioner has submitted that PGCIL filed the petition for seeking direction for implementation of GSES on all India basis. The Commission vide order dated 20.2.2014 in Petition No. 265/MP/2014 directed PGCIL to approach the Commission after review of the performance of grid and requirement of GSES.

8. The petitioner has submitted that the Commission vide order dated 6.9.2013 had directed PGCIL to apprise the Commission the progress and benefits of Phase-I along with the updated cost estimates of PMUs for Phase-II. The petitioner vide its affidavit dated 17.9.2014 had submitted the progress report of implementation of URTDSM Phase-I.

9. The matter was heard on 6.10.2015. The petitioner was directed to file the present status of the region-wise progress viz. installation of PMUs, PDCs, Remote Consoles and Number of trained personnel, etc. and status of Pilot project on PMU under Development of Analytics of Phase-I.

10. The petitioner, vide its affidavit dated 2.12.2015, has submitted the progress of Phase-I of the scheme as on 16.11.2015 as under:

Present Status of Supply and Installation of Station PMUs and PDC equipment

S. No.	Region	No. of PMU Sub-stations			PDS (No of CC)		
		Total	Supplied	Installation	Total	Supplied	Installed
1	NR	113	56	WIP in 3 S/S	13	10	7
2	ER	84	1	-	6	4	-
3	NER	14	2	-	4	2 in transit	-
4	SR	73	37	-	6	6	-
5	WR	67	5	-	5	5	5
Grand Total		351	101	Work in Progress in 3 S/S	34	27	12

Status of Number of trained personnel:

S.No.	Region	Number of trained personnel on PMU
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1	NR	46
2	ER	19
3	NER	22
4	SR	15
5	WR	29
Total		131

11. The petitioner has also published a notice on the newspapers in accordance with the Regulatory Approval Regulations. In response to public notice, no suggestions/objections have been received.

Analysis and Decision:

12. We have considered the submission of the petitioner and perused documents on record. Power Grid Corporation of India Limited has filed the present petition for grant of regulatory approval for execution of Phase-II of Unified Real Time Dynamic State Measurement. The petitioner filed the petition for grant of regulatory approval for execution of the scheme. The Commission vide order dated 6.9.2013 in Petition No. 129/MP/2012 granted in-principle approval for Phase-I of the scheme and for providing PMU for Phase-II commensurate with the approval of OPGW. The Commission in the said order dated 6.9.2013 observed that Phase-II of the scheme mainly involves laying down of Optical Fibre cables and the petitioner was granted liberty to file a composite scheme for laying of OPGW required for execution of URTDSM and Grid Security Expert System (GSES) with consultation with CEA. Accordingly, Power Grid Corporation of India Limited has filed the present petition for grant of regulatory approval for execution of Phase-II of Unified Real Time Dynamic State Measurement.

13. The Commission in the said order dated 6.9.2013 directed the petitioner to submit the progress of implementation of scheme to National Power Committee for review of progress and submit the progress report of the project on quarterly basis.

Relevant portion of the said order dated 6.9.2013 is extracted as under:

“25. Phase-II of the Scheme mainly involves laying down of Optical Fibre cables. Communication being backbone of power system operation, the petitioner is granted liberty to file a composite scheme for laying of OPGW required for execution of URTDSM and Grid Security Expert System (GSES) as proposed by the petitioner in Petition No. 265/MP/2012 as well as other communication requirements. The Petitioner shall provide full details in respect of OPGW of aforementioned Schemes to enable due priority to the communication system for power system operation. CEA may also be consulted before submitting the Scheme to Commission. **The commission also accords in-principle approval for providing PMU for phase-II commensurate with the approval of OPGW for the said phase.** The petitioner is directed to apprise the Commission the progress and benefit of phase-I along with the updated cost estimates of PMUs for phase-II.

26. The petitioner is directed to submit progress of implementation of scheme to National Power Committee (NPC) for review of progress and submit the progress report of the project to CERC on quarterly basis”.

14. The petitioner in Petition No. 129/MP/2012 submitted the stage-wise deployment of PMUs and PDCs as under:

Stage I Implementation Programme (tentative)

Region	Sub-stations		Transmission lines		PMUs		Nodal PDC	Master PDC	Super PDC	Main and B/U NLDC
	ISTS	STU	ISTS	STU	ISTS	STU				
NR	74	42	394	224	206	120	6	9	1	
WR	49	18	456	135	234	71	11	4	1	
ER	51	31	395	149	202	79	4	5	1	
SR	57	16	338	90	178	47	6	4	1	

NER	9	5	69	24	36	13	0	3	1	
Total	240	111	1652	622	856	330	27	25	5	
	351		2274		1186		57		2	

Stage II Implementation Programme (tentative)

Region	Sub-stations		Transmission lines		PMUs	
	ISTS	STU	ISTS	STU	ISTS	STU
NR	9	55	40	211	21	111
WR	11	58	64	280	33	145
ER	–	13	–	50	–	26
SR	3	55	10	199	5	105
NER	9	17	26	45	14	23
Total	32	198	140	785	73	410
	230		925		483	

15. The petitioner, vide Record for Proceeding for the hearing dated 6.10.2015, was directed to submit the progress of URTDSM Phase-I scheme. The petitioner, vide its affidavit dated 2.12.2015, has submitted the details of progress of the scheme as under:

S.No.	Region	No. of PMU Sub-stations			PDS (No of CC)		
		Total	Supplied	Installation	Total	Supplied	Installed
1	NR	113	56	WIP in 3 S/S	13	10	7
2	ER	84	1	-	6	4	-
3	NER	14	2	-	4	2 in transit	-
4	SR	73	37	-	6	6	-
5	WR	67	5	-	5	5	5
Grand Total		351	101	Work in Progress in 3 sub-station	34	27	12

16. CEA, vide its letter dated 27.1.2014, has accorded revised approval in which OPGW requirement is worked out to be 11925 km against initial proposed requirement of 10661 km. The no. of IPP stations have been increased from 71 to

110 nos., which requires additional PMUs and OPGW. However, incremental requirement is not covered under the present proposal of phase-II.

17. It is noted that URTDSM scheme was approved with a cause to improve the visibility and security and to mitigate the probability of grid failure of the grid. Perusal of the report submitted by the petitioner reveals that the petitioner has not taken the endeavor to complete the Phase-I of the scheme. The progress of phase-I submitted by the petitioner shows that Phase-I of the scheme is at initial stage though the implementation period was 2014-15.

18. Perusal of present status of the region-wise progress, namely installation of PMUs, PDCs and Number of trained personnel, etc. reveals that for implementation of phase-I, out of total 351 PMUs sub-station, 101 PMUs has been supplied and work on three sub-station is in progress and out of 34 PDS equipments, only 27 PDS equipments have been supplied and 12 have been installed. It is noted that while granting regulatory approval for Phase-I of the scheme, the Commission vide order dated 6.9.2013 observed that PGCIL shall help Smart Grid Forum, Central and State utilities personnel in capacity building and POSOCO was directed to provide operational feedback for these workshops in the form of case studies. However, POSOCO has not submitted such operational feedback till date. We direct POSOCO to submit the operational feedback for these workshops within one month of issue of this order.

19. The petitioner vide Record of Proceedings for the hearing dated 6.10.2016 was directed to submit the status of Pilot project on PMU under Development of

Analytics of Phase-I. The petitioner vide its affidavit dated 2.12.2015 has submitted that proto -type pilot project on PMU is developed with IIT Bombay and shall be demonstrated on field upon installation at identified locations. The Commission in order dated 6.9.2013 in Petition No. 129/MP/2013 observed that analytics should be developed in a time bound manner for optimal utilization of the scheme and analytics must be done in Phase-I. We direct the petitioner to submit the detail report of development of analytics within one month of issue of this order.

20. With regard to funding for the scheme, the Commission vide order dated 6.9.2013 had observed that the projects should be funded through debt and equity in the ratio of 70:30 and PGCIL shall make an application before the Managing Committee of PSDF for reimbursement of funds equivalent to the loan amount. Relevant portion of the said order dated 6.9.2013 is extracted as under:

“28. BRPL and BSEB have suggested that the funding for the scheme should be met through Power System Development Fund (PSDF). We are in agreement with the said suggestion. In our view, the projects should be funded through debt and equity in the ratio of 70:30. PGCIL shall make an application before the Managing Committee of PSDF for reimbursement of funds equivalent to the loan amount. Since there is a possibility of time lag between making of the application by PGCIL to PSDF and actual reimbursement of the fund, PGCIL shall arrange for loan for the matching amount, which shall be repaid on receipt of the funds from PSDF .It is clarified that the execution of the schemes should not be affect in any way on account of the time taken for getting the funds from PSDF .The tariff of the URTDSM scheme shall be worked out accordingly.”

In view of the above observation, the petitioner is directed to submit information within one month from the issue of the order as to whether PGCIL made an application before the Managing Committee of PSDF for reimbursement of funds.

21. Regulation 5 of the Regulatory Approval Regulations provides as under:

“5. Evaluation criteria:

The ISTS Schemes shall be evaluated on the basis of the following criteria:

(i) Need for the transmission scheme

(a) Technical justification

(b) Urgency

(c) Prudence of the investment

(ii) Cost Assessment and possible phasing of implementation

(iii) Cost-benefit to the users of the proposed ISTS Scheme.

As per the above provision, the ISTS schemes is required to be evaluated on the basis of the requirement for the transmission scheme, cost assessment and cost benefit to the users of the proposed ISTS scheme. As per the progress of URTDSM Phase-I scheme submitted by the petitioner on 16.11.2015, the petitioner has not completed installation of PMUs in single sub-station. Out of 351 sub-stations only in three sub-stations, installations of PMUs are in progress and in 101 sub-stations, PMUs have been supplied. With regard to PDCs, out of 34 PDCs, the petitioner has installed twelve PDCs so far.

22. It is noticed that URTDSM scheme was approved with the purpose to improve the visibility and security and to mitigate the probability of grid failure. By considering the present progress of the Phase-I, the petitioner does not seem to have made adequate efforts to complete the phase-I of the scheme. The implementation period for phase-I was 2014-15. However, it is still under implementation. We express our unhappiness with the progress of Phase I of URTDSM scheme to be implemented by the petitioner. We direct the petitioner to

expedite the work of Phase-I of the scheme so that it may be completed by November 2016 as submitted by the petitioner. Since substantial progress has not been achieved by the petitioner in phase-I, it may not be appropriate to grant regulatory approval for implementation of Phase-II of the scheme at this stage. Accordingly, the petitioner is granted liberty to submit the fresh proposal for grant of regulatory approval for Phase-II of the scheme in consultation with CEA after implementation of Phase-I scheme, which would be considered in accordance with law.

23. The petitioner has sought reimbursement of fee paid by it for filing the petition. In terms of our order dated 11.1.2009 in Petition No. 109/2009, reimbursement of filing fee and expenses on publication in the present petition cannot be allowed.

24. The petition is disposed of with the above direction.

Sd/-
(Dr. M.K.Iyer)
Member

sd/-
(A.S. Bakshi)
Member

sd/-
(A. K. Singhal)
Member

sd/-
(Gireesh B. Pradhan)
Chairperson