MINUTES OF FOURTHMEETING OF THE STANDING TECHNICAL COMMITTEE RECONSTITUTED BYFORUM OF REGULATORS (FOR) FOR IMPLEMENTATION OF FRAMEOWORK ON RENEWABLE AT STATE LEVEL - GROUP-I & II

Venue:	Upper Ground Floor,
	CERC, New Delhi
Date:	03.03.2020
List of Participants:	Annexure-1(Enclosed)

The Fourth meeting of the FOR Standing Technical Committee re-constituted by FOR was held on 3rd March, 2020 under the Chairmanship of Shri Indu Shekhar Jha, Member CERC and Shri P.K.Pujari, Chairperson CERC & FOR. At the outset, Shri I.S. Jha welcomed all the participants and special invitees. Dr S K Chatterjee, Chief(RA), CERC gave a brief background of the agenda items scheduled for the meeting. Thereafter agenda items were taken up for discussions.

Agenda Item No.1: Presentation on Renewable Energy Management Centre (REMC)

2. Shri Sushil Agarwal, representative from PGCIL presented status update on setting up of Renewable Energy Management Centres (REMCs) (Annexure-2). He updated the committee that PGCIL was recommended as project management consultant (PMC) in the 3rd Joint Coordination Committee meeting wherein it was decided to establish 11 REMCs with the Government budgetary support vide Ministry of Power, Govt. of India notification dated 11.09.2017.

- 3. He informed that it was decided to establish 11 REMCs in RE rich states namely in Madhya Pradesh Jabalpur, Gujarat Vadodara, Maharashtra Mumbai, Rajasthan Jaipur, Tamil Nadu Chennai, Andhra Pradesh Vijayawada, Karnataka Bangalore, NRLDC, WRLDC, SRLDC and NLDC. He emphasized the importance of forecasting of RE in addressing the variability of Renewable Energy (RE) sources like Wind and Solar and said that establishment of REMCs would help in real time tracking of generation from RE sources with web based scheduling. He explained that REMCs will be equipped with real time tracking of RE generation through SCADA, Forecasting and Scheduling software tool, annual maintenance contract and forecasting service provider.
- 4. He apprised the Committee that PGCIL through tendering process have awarded projects for executing all 11 REMCs. He further added that Western Region (WR) and Southern Region (SR) REMC was commissioned in August 2019 and Northern Region (NR) REMC was commissioned in February 2020. He highlighted that currently 577 pooling stations with RE capacity are being monitored by REMCs covering19,866 MW and 35,807 MW of Solar and Wind installed capacity respectively.
- 5. He informed that forecasting tool at REMCs uses inputs from three different RE forecasting service providers (FSP) and along with weather data from weather service providers. He also highlighted that REMC has its own internal forecasting engine which further receive additional information from real time SCADA data and Static provider to produce optimized generation forecast. The REMC is enabled to provide RE forecast at pooling station level, State and National level as well as on 15 minutes, intraday and week ahead basis. He emphasised that REMC will provide greater visualization and enhance situational awareness for grid operator to study varied RE scenarios.

- 6. He briefed the Committee that REMCs shall give the forecast at pooling station level and the same shall be available to the RLDCs and will also be published on website for all RE generators.
- 7. Technical Committee members deliberated on forecasting and scheduling of RE generation after implementation of REMCs. It was highlighted that with REMCs in place, RE developers would have a choice to schedule its RE power based on forecast provided by respective REMCs or its own forecasting through Qualified Coordinated Agency (QCA). Schedule provided by the RE generator or though QCA, as the case may be, will be considered for any commercial settlement w.r.t. its actual generation. While the forecast provided by REMCs would be helpful for grid operators to plan any reserves requirement. It was mentioned that currently REMCs will act only as facilitator and will help RLDCs for balancing the system.
- 8. Shri P.K. Pujari, Chairperson CERC highlighted that there will be two sets of forecasting data- One from RE generator's own forecast or through appointed QCA and another from REMCs. He sought clarification from POSOCO as to which data POSOCO as a system operator will rely upon while planning the ancillary service for balancing the system.CMD, POSOCO explained that currently REMCs are in nascent stage and their foremost aim is to reduce the forecasting error. He added that POSOCO is working on numerical models clarity on which data set to adopt for planning ancillary services.

Action Points(s)/ Decision (s):

The technical committee noted and appreciated the efforts of PGCIL on implementation of REMCS.

Agenda Item No.2: Status of implementation of Regulations on Forecasting, Scheduling and Deviation Settlement AND Status of implementation of SAMAST:

- 9. Shri KVS Baba, CMD, POSOCO updated the Committee that out of 23 SAMAST DPR they received from the states five were already approved namely for Madhya Pradesh, Andhra Pradesh, Tamil Nadu, Rajasthan and Gujarat. He further updated the Committee that on 30.01.2020 eight more SAMAST DPRs of states were approved namely Karnataka with a sanctioned cost of Rs 9 Crore, West Bengal with a sanctioned cost of Rs 11.2 crore, Bihar with a sanctioned cost of Rs7.61 crore, Haryana with a sanctioned cost of Rs 17.91 crore, Himachal Pradesh with a sanctioned cost of 8.11 crore, Punjab with a sanctioned cost of Rs 13.58 crore, Assam with a sanctioned cost of Rs 8.25 crore and Meghalaya with a sanctioned cost of Rs 8.48 crore.
- 10. CMD, POSOCO apprised the Committee that DPRs of Telangana, Kerala, Jharkhand, Uttar Pradesh, Manipur, Arunachal Pradesh, Nagaland, Mizoram and Tripura are still under examination. The technical committee members raised concerns over delay in approvals of the DPRs. CMD, POSOCO informed that techno economic sub-group under CEA examines the proposal followed by appraisal committee and finally by monitoring committee which is the ultimate authority for sanctioning the projects. He further informed that after sanction letter is issued there is tripartite agreement among State Government, State Utility and POSOCO. Shri I S Jha highlighted that various agenda pertaining to RE integration were addressed in the last three meetings and some are still ongoing including implementation of SAMAST at state level. He expressed concern on long process of approvals and urged for cooperation from all stakeholder to complete SAMAST implementation in targeted manner.
- 11. CMD, POSOCO suggested the Committee members to implement the recommendations of Capacity Building of Indian Load Despatch Centres (CABIL)

reports approved by FOR. The Committee members believed that CABIL implementation are under the purview of State Governments and needs to be taken up before the respective State Governments.

Action Points(s)/ Decision (s):

The Technical Committee noted the status on implementation of SAMAST and emphasized the need to expedite the approval process for disbursement of grant for SAMAST implementation at State Level.

- i. The Committee decided to have a separate meeting with PSDF Committee under the Chairmanship of Shri I.S. Jha to facilitate expeditious disbursement of PSDF funds for SAMAST.
 - 12. The meeting ended with a vote of thanks by Shri I S Jha, Member, CERC

ANNEXURES

Annexure-I

LIST OF PARTICIPANTS AT THE FOURTH MEETING OF THE STANDING TECHNICAL COMMITTEE RECONSTITUTED BY FORUM OF REGULATORS (FOR) FOR IMPLEMENTATION OF FRAMEOWORK ON RENEWABLE AT STATE LEVEL - GROUP-I & II

1	Shri P.K. Pujari, Chairperson	CERC					
2	Shri I.S. Jha, Member	CERC					
3	Shri U N Behera, Chairperson	OERC					
4	Dr Arbind Prasad, Chairperson	JSERC					
5	Shri Preman Dinaraj, Chairperson	KSERC					
6	Ms K Sidhu, Chairperson	PSERC					
7	Shri Raj Pratap Singh, Chairperson	UPERC					
8	Shri D S Dhesi, Chairperson	HERC					
9	Shri M.Chandra Shekhar, Chairperson	TNERC					
10	Shri A.K. Bakshi, Former Member	CERC					
11	Shri P J Thakkar, Member	GERC					
12	Shri R K Choudhary, Member	BERC					
13	Shri Durgadas Goswami, Member	WBERC					
14	Shri Mukesh Khullar, Member	MERC					
15	Shri H.M. Manjunatha, Member	KERC					
16	Shri S.N.Kalita, Member	AERC					
17	Shri T Ram Singh, Member	APERC					
18	Shri S C Shrivastava, Chief (Engg)	CERC					
19	Dr S K Chatterjee, Chief (RA)	CERC					
20	Shri KVS Baba	POSOCO					
21	Ms Rashmi Nair, Dy Chief (RA)	CERC					
22	Shri N Pradeep Kumar, Dy Director	KERC					
23	Shri Rajsekhar, Advisor (FOR)	CERC					
24	Shri Ravindra Kadam, Advisor (RE)	CERC					
25	Shri Siddhant Raj Singh, RA	CERC					
	Other Invitees						
1	Shri Sunil Agarwal	PGCIL					
2	Shri H.H. Sharan	PGCIL					
3	Dr Sunita Chohan	PGCIL					
4	Shri Anish Mandal	Deloitte/GTG-RISE					
5	Shri Amit Goenka	Deloitte					
6	Shri Nirmal Shaju	Deloitte					



Presentation on Renewable Energy Management Centre (REMC) Date : 03/03/2020

Background



- A road-map for integrating RE into the electricity grid and future requirements was prepared in July 2012 by POWERGRID as directed by MNRE.
- In line with this roadmap, the Government of Germany agreed to provide financial and technical assistance.
- A joint Declaration between Germany and India on Indo-German Development Cooperation regarding the Establishment of Green Energy Corridors (GEC) was signed on 11th April, 2013.
- The financial assistance of GEC was to be provided by KfW & technical assistance by GiZ, Germany.
- The REMCs were conceived as part of GEC for control infrastructure.
- DPR for establishment of REMCs were prepared by the consultant (Ernst & Young) appointed by GiZ, Germany in 2016.



- In 3rd Joint coordination Committee meeting co-chaired by Secretary (Power) & Secretary (MNRE) held on 17.02.14 funding thru GBS and PMC as POWERGRID was recommended.
- Project Approval : By MOP, Gol on 11.09.17
- Funding : Gol through GBS (Gross Budgetary Support)
- Sanctioned Cost : Rs. 409 Cr.

Background

Project Management Consultant(PMC) appointed by MoP: Power Grid Corporation of India Limited



REMC – at a glance



- RE Forecasting is most critical in addressing uncertainty of Renewable Energy.
- Establishment of Renewable Energy Management centers (REMC) equipped with Forecasting systems envisaged
 - Forecasting of RE generation on Very short term (15 mins), day-ahead, Intra day and week-ahead basis
 - At aggregated/state as well as pooling station QCA/Generator level
 - > Real time tracking of generation from RE sources and its geo-spatial visualization
 - > Web based Scheduling solutions including for QCA/Project Developers
 - Close coordination with respective LDC for RE generation and control for smooth grid operation
 - Single source information repository and coordination point for RE penetration (Static /dynamic data)

Project Details



S.No.	Name of Project	NIT Date	Award Date	Agency	Cost (in crs.)
1	WR –REMC	31.1.2017	29.12.2017	M/s Siemens	43.79
2	SR-REMC	26.8.2016	29.01.2018	M/s Chemtrols / M/s OSI	55.12
3	NR-REMC	28.4.2017	12.02.2018	M/s Chemtrols / M/s OSI	29.00

Project cost of 11 REMCs including PMC charges - Rs. 140 Crs.

REMC - Salient Features

- Forecasting and Scheduling of Renewable Generation by software tools
- Real time Tracking of RE Generation using SCADA system
- Video Projection System(VPS)
- Annual Maintenance Contract for 7 years
- Forecast Services for 4 years











Forecasting – Salient Features

- Week Ahead Forecasting Power Generation Forecast with temporal resolution of 1 hour for next seven days i.e. 24 blocks/day or 168 blocks/week.
- Day Ahead Forecasting Power Generation Forecast with the temporal resolution of 15 minutes/5minutes for next day starting from 00:00 to 24:00 hrs.
- Intraday Forecasting Power generation Forecast with temporal resolution of 15 minutes for next 24 hrs. in 96 blocks .
- 16 revisions in a day are possible i.e. forecasting can be revised in every 1.5 hrs.



Performance Based Forecasting Service Payment Terms

- First year of the operations will be considered as stabilization period for which 100% payment shall be disbursed.
- From 2nd year onwards, 50% of the cost will be disbursed as base pay.
- Balance 50% cost will be a variable component based on performance.
- FSP, who has performed with greatest error for the first two year duration shall be discontinued at the end of two years.
- Provision of introduction of new FSP is kept in case the balance 2 FSPs are not performing within 2% band of best performance.
- User may extend FSP and WSP service contract for additional 2 years at the same terms and condition.

Present Status of REMC Project

WR - REMC

- > Control Centres 04 Nos (WRLDC, Gujarat, MP& Maharashtra)
- **Commissioned in Aug. 19.**
- **>** Taking over done for WRLDC, Maharashtra & MP.
- > Defect Liability started for WRLDC, Maharashtra & MP.

SR - REMC

- > Control Centres : 4 Nos. (SRLDC, AP, Karnataka and Tamil nadu)
- ≻ Commissioned in Aug. 19.
- > Taking over done for SRLDC, Karnataka & Tamil Nadu.
- > Defect Liability started for SRLDC, Karnataka & Tamil Nadu





Present Status of REMC Project

NR – REMC

- Control Centres : NRLDC and Rajasthan
- FAT (Factory Acceptance Test) completed.
- Supply: Hardware delivered at all the sites.
- Installation & Commissioning: completed Feb' 2020.
- Taking Over shall be done after completion of System Availability test.

NLDC



FAT (Factory Acceptance Test) - completed.



- Supply: Hardware delivered.
- Installation & Commissioning: completed Feb' 2020.
- Taking Over shall be done after completion of System Availability test.

Renewable capacity monitored by REMCs



S.No	State/Region	Number of Pooling Station	Installed capacity (Solar) (MW)	Installed capacity (Wind) (MW)	Total Capacity (MW)
REMC -N	IR				
1	NRLDC	6	1815	0	1815
2	Rajasthan	50	3096	4298	7394
	Sub-Total	56	4911	4298	9209
REMC -	SR				
1	SRLDC	3	2050	899	2949
2	Karnataka	84	3839	4745	8585
3	Tamil Nadu	149	1936	7924	9861
4	Andhra Pradesh	46	1580	3905	5485
	Sub-Total	282	9405	17473	26878
REMC-W	/R				
1	WRLDC	3	750	1168	1918
2	Maharshtra	66	1255	3989	5244
3	Madhya Pradesh	52	1303	2400	3703
4	Gujarat	118	2242	6479	8687
	Sub-Total	239	5550	14036	19586
	TOTAL (All India)	577	19866	35807	55673

Plot of Solar Generation on a typical Cloudy day







Impact of Solar Eclipse on Solar Generation



Plot of Solar Actual Vs Solar Forecast on a typical day(NR-ISTS)



Forecast Vs Actual for NR-ISTS for 01st Feb to 08th Feb, 2020 POWERGRID







Performance Feedback from POSOCO & SLDCs on implemented REMCs subsequently.

Implementation of REMC in Telangana sanctioned by MoP in Dec.'19.

✤Future REMCs in other States.



Thank you







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GOVERNMENT OF INDIA MINISTRY OF POWER

Contents

- **1.** Region wise Status of Forecasting, Scheduling and Deviation Settlement Mechanism for Wind and Solar Generation Regulations for the State.
- 2. Region wise Status of Deviation Settlement Mechanism Regulations for the States
- **3.** Region wise Status of SAMAST implementation in the State
- 4. Summary
- 5. Additional aspects to be covered

Implementation of F&S at State level of Group-I states (as on 3rd March 2020)

Sr.	State	Notification of F&S Regulations	Formulation & approval of F&S Procedure	QCA registration process	IT software & Trial operation	Commercial Implementation / DSM Bills issue
1	Andhra Pradesh	Notified (Aug 2017)	Y (approved)	Y	Y	Y
2	Gujarat	Notified (Jan 2019)	Y (approved)	Y	Y	Y
3	Maharashtra	Notified (July 2018)	Y (approved)	Y	Y	Y
4	Karnataka	Notified (May 2016)	Y (approved)	Y	Y	Y
5	Rajasthan	Notified (Sep 2017)	Y (approved)	Y	Y	Y
6	Tamil Nadu	Notified (Mar 2019)	In progress (draft submitted)	Ν	In progress	NA
7	Himachal Pradesh	Notified (Oct 2018)	As part of DSM	Not applicable	Under trial for DSM	NA

Status Update of F&S and DSM Regulations (as on 3rd March 2020)

States		F&S Regulations	;		DSM Regulation	s
Region	Notified	Draft Published	WIP or Yet to initiate	Notified	Draft Published	WIP or Yet to initiate
North	4 RJ, UP, HR, PB		4 DL, UK, J&K, HP (only Hydro potential)	5 HP, DL, RJ, UK,HR	1 PB	2 J&K, UP
West	4 CG, MP, MH, GJ		1 Goa (no major Wind/Solar Potential)	4 GJ, CG, MP, MH		1 Goa
South	4 AP, KR, TS, TN		1 KL	1 TN	1 TS	3 AP, KR, KL (AP and KR ABT for OA)
East	3 JH, SK, BR	1 OR*	1 WB	1 BR	2 WB, OR*	2 JH, SK (JH B&S for OA)
North-East	5 AS, MN, ML, MZ,TR		2 AR,NL	2 ML, AS		5 AR, MN, MZ,NL, TR
UT			6 CH, PY, DD, DNH, LD, AN			6 CH, PY, DD, DNH, LD, AN
TOTAL	20	1	15	13	4	19

* Draft regulations were notified by OERC in 2015. However, a new set of regulations are presently under preparation

Status Update of SAMAST DPR & Implementation (as on 3rd March 2020)

States		SAMAST DPR	t
Region	DPR Submitted	DPR approved	WIP or Yet to Prepare
North	1 UP	4 HP, HR, PB, RJ	3 UK, J&K, DL
West	4 MP (DSM implementation) GJ, MH* , CG		1 Goa
South	2 KL, TS	3 KR, AP, TN	
East	1 JH	2 BR, WB	2 OR, SK
North-East	5 AR, MN, MZ,NL, TR	2 AS, ML	
UT			6 CH, PY, DD, DNH, LD, AN
TOTAL	13	11	12



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Status of SAMAST implementation in (Group I) States (1/2) (as on 3rd March 2020)

States	Category as per SAMAST	Remarks
		 The State has already implementing Intra-State ABT Mechanism since 2009 in line with CERC DSM Framework
Gujarat	Group-A	 Adequate interface meters at pooling stations & other relevant regulations in line with the SAMAST recommended activities.
Maharashtra	Group-A	 Intra-State ABT/FBSM framework at state level under operation since 2011. MERC has notified the DSM Regulations on 1st March, 2019. The Commercial implementation of DSM Regulations is envisaged by 1st April, 2020. MSLDC has initiated process for implementation of DSM Regulations. Draft Scheduling and Despatch Procedure and DSM Procedure is published for public comments. MSLDC has also published the Tender for selection of Vendor for Software Development for DSM Implementation.
Tamil Nadu	Group-C	 Following activities have been completed: DPR is approved for Rs. 11.98 Cr for PSDF fund for intra-state ABT TNERC has notified DSM Regulations on 20th March, 2019 Software for scheduling, energy accounting has been procured. Pilot run for state owned generators and IPPs are under progress Provision of ABT meters have been completed to the extent of 67%

Status of SAMAST implementation in (Group I) States (2/2) (as on 3rd March 2020)

States	Category as per SAMAST	Remarks
		 DPR for SAMAST implementation has been submitted to PSDF for approval 22 Dec, 2017 for Rs. 43.34 Crs.
Karnataka	Group-B	 The proposal was examined by the TESG in the following meetings: 39th TESG: 20.03.2018, 42nd TESG: 24.07.2018 45th TESG: 19.09.2018.
	F	 Proposal recommended by the Appraisal Committee on 26 July 2019, and project cost accepted to Rs. 10.00 Cr
		 Proposal approved by the Monitoring Committee on 31st January 2020
	Group-B	 State Transmission Operation Management System (STOMS) project implemented by RVPN, akin to SAMAST, in the State having additional features as compared to SAMAST.
Rajasthan		 Estimated cost of Rs 13.54 Cr and 90% (Rs 11.86 Cr) sanctioned from PSDF
Andhro		DPR is approved 19.33 Cr by PSDF Committee
Pradesh	Group-B	 Letter of approval issued by MoP on 27 July, 2018 Agreement signed on 28 Nov 2018
Himachal		 TESG vide its letter dated 8 May, 2019 has informed HPSLDC that, TESG has recommended the SAMAST DPR to PSDF committee for approval for Rs 9.09 Crore
Pradesh	Group-D	 Proposal recommended by the Appraisal Committee on 26 July 2019, and project cost accepted to Rs. 8.11 Cr.
		 Proposal approved by the Monitoring Committee on 31st January 2020

Summary status of SAMAST, F&S and DSM Regulations (as on 3rd March 2020)

States		SAMAST DPR		F&S Regulations			DSM Regulations		
Region	DPR Submitted	DPR approved	WIP or Yet to Prepare	Notified	Draft Published	<i>WIP or Yet to initiate</i>	Notified	Draft Published	<i>WIP or Yet to initiate</i>
North	1 UP	4 HP, HR, PB, RJ	3 UK, J&K, DL	4 RJ, UP, HR, PB		4 DL, UK, J&K, HP (only Hydro potential)	5 HP, DL, RJ, UK,HR	1 PB	2 J&K, UP
West	4 MP (DSM implementati on) GJ, MH* , CG	,	1 Goa	4 CG, MP, MH, GJ		1 Goa (no major Wind/Solar Potential)	4 GJ, CG, MP, MH		1 Goa
South	2 KL, TS	3 KR, AP, TN		4 AP, KR, TS, TN		1 KL	1 TN	1 TS	3 AP, KR, KL (AP and KR ABT for OA)
East	1 JH	2 BR, WB	2 OR, SK	3 JH, SK, BR	1 OR*	1 WB	1 BR	2 WB, OR*	2 JH, SK (JH B&S for OA)
North-East	5 AR, MN, MZ,NL, TR	2 AS, ML		5 AS, MN, ML, MZ,TR		2 AR,NL	2 ML, AS		5 AR, MN, MZ,NL, TR
UT			6 CH, PY, DD, DNH, LD, AN			6 CH, PY, DD, DNH, LD, AN			6 CH, PY, DD, DNH, LD, AN
TOTAL	13	11	12	20	1	15	13	4	19

* Draft regulations notified in 2015

Additional aspects to be covered

Theme	Parameters to be covered
Power Quality	 Notification of Power Quality Regulations Incentive/ disincentive mechanism Directive for installation of Power Quality meters Periodic Reporting of Power Quality Indicators by Licensees Power Quality Audits
CABIL	 Adoption and implementation of recommendations of CABIL report Adequacy of Manpower in LDCs Status of training and incentives for LDC employees Separation of accounts maintained at LDC level
RPO	 Status of implementation at state level States yet to adopt the tool

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- RISE Contracting Officer Representative: Monali Zeya Hazra, USAID India, mhazra@usaid.gov
- Chief of Party:Tushar Sud, RISE, tsud@deloitte.com 10

Context (1/2)

Re-constitution of Standing Technical Committee of Forum of Regulators

- A Technical Committee was constituted under the chairmanship of Member, CERC on 18.11.2015 for implementation of Framework on Renewables at State level.
- During 66th meeting of the FOR it was decided that "the standing nature of the Technical Committee would imply that the Committee ٠ always be headed by the Technical Member of CERC. But, the members of the Committee would change as per the subject(s) under consideration, so as to ensure representation of all States by rotation.
- tituted the Standing Technical Committee of the Forum of •

In pursuance of the above decision, the Competent Authority ir Regulators (FOR) as under:-	n FOR has reconst
Group - I: Renewable Energy (RE) integration and relate The composition of the Group is as under:-	ed matters.
Shri I. S. Jha, Member, CERC	Chairman
Chairperson/ Member of GERC (Gujarat)	Member
Chairperson / Member of MERC (Maharashtra)	Member
Chairperson / Member of TNERC (Tamil Nadu)	Member
Chairperson / Member of KERC (Karnataka)	Member
Chairperson / Member of RERC (Rajasthan)	Member
Chairperson / Member of APERC(Andhra Pradesh)	Member
Chairperson / Member of HPERC(Himachal Pradesh)	Member
Chairman & Managing Director, POSOCO	Member
Head of Regulatory Affairs Division, CERC	Member
	Secretary

Special Invitee: Head of Engineering Division, CERC The committee may co-opt any other member/expert as deemed fit.

Terms of Reference for Group -I

- i. Deployment and implementation of framework on Forecasting, Scheduling and Deviation settlement of Wind and solar generating stations at the State Level.
- ii. Evolve a framework for Ancillarv Services and Reserves at the State Level.
- iii. Implementation of Automatic Generation Control (AGC) and Primary Control within the States.

Context (2/2)

Group - II: Implementation of ABT Framework at State Level The composition of the Group is as under:-

Shri I. S. Jha, Member, CERC	Chairman
Chairperson/ Member of PSERC (Punjab)	Member
Chairperson / Member of UPERC (Uttar Pradesh)	Member
Chairperson / Member of BERC (Bihar)	Member
Chairperson / Member of WBERC (West Bengal)	Member
Chairperson / Member of KSERC (Kerala)	Member
Chairperson / Member of AERC(Assam)	Member
Chairman & Managing Director, POSOCO	Member
Head of Regulatory Affairs Division, CERC	Member
	Secretary

Special Invitee: Head of Engineering Division, CERC The committee may co-opt any other member/expert as deemed fit.

Terms of Reference for Group -II

i. Introduction/Implementation of the Availability Based Tariff (ABT) Framework at the State Level as mandated in the National Electricity Policy and Tariff Policy.

- The Standing Technical Committee shall provide periodic report to the FOR and may co-opt any other member, as deemed fit.
- 1st meeting of both the Groups of Re-constituted FOR Technical Committee was scheduled on 1st July, 2019.
- 2nd meeting of Group-I of Re-constituted FOR Technical Committee was scheduled on 23rd August, 2019.
- 3rd meeting of both the Groups of Re-constituted FOR Technical Committee was scheduled on 3rd January, 2020

Status of F&S and DSM Regulations of Group-I States (1/2) (as on 3rd March 2020)

States	F&S Regulations and Implementation	DSM Regulations and implementation
Gujarat	 Notified (19th Jan, 2019). All QCA have been registered Commercial Implementation has initiated since August 2019 	 DSM mechanism implemented in line with CERC DSM Regulations (17 Feb 2014)
Maharashtra	 Notified on 20th July, 2018. The Procedure for implementation of Regulation is approved by the Commission on 7 December, 2018 and an amendment was issued on 19th December 2019 The Commercial implementation of the Regulation has commenced from 6th January, 2020. 	 The State is presently implementing FBSM Mechanism since 2011. State has Notified DSM Regulations on 1st March, 2019 in line with CERC DSM Framework. The DSM software development is in process The Commercial implementation is expected by 1st April, 2020
Tamil Nadu	 Notified (1st March, 2019) Procedures for F&S have been drafted and submitted to the Commission for approval 	 Notified DSM Regulations in line with CERC DSM Regulations (1st March, 2019) DSM Software Development is in progress
Karnataka	 Notified (31 May, 2016) Implementation from 1st June 2017. 	 Intra-state ABT mechanism in place from 20 June 2006 for Open Access

Status of F&S and DSM Regulations of Group-I States (2/2) (as on 3rd March 2020)

States	F&S Regulations and Implementation	DSM Regulations and implementation
Rajasthan	 Regulations Notified (14th Sept 2017) in line with Model F&S Regulations. Regulations are in Implementation 	 Notified (8th Nov, 2017 in line with CERC DSM Framework First Amendment Notified (5th March 2019) DSM Framework is in implementation.
Andhra Pradesh	 Regulations Notified (21 Aug 2017) in line with Model F&S Regulations. Implementation initiated 	 DSM regulations not notified Balancing and Settlement Code in place from 11 Aug 2006 (as amended in 2013, 2014, 2016 & 2019) for intra-state OA.
Himachal Pradesh	 No major Wind and Solar Resources in the state Majority of RE potential is Hydro power which covers under DSM Framework notified by the State 	 Notified (16th Oct, 2018) in line with FOR Model and CERC DSM Regulations. First Amendment (29 June 2019) issued in line CERC 4th and 5th Amendment to DSM Regulations