MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO.LTD.
CIN NO. U40109MH2004SGC143646

RIGHT TO INFORMATION

Office of the Executive Director
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Ref. No. ED/MSLDC/OP/GCC/ No 00205 Date: 28 JAN 2025

To,
As per mailing list GCC Core Group Members.

Sub: - Agenda for 11th Grid Coordination Committee (GCC) Meeting scheduled on 29.01.2025 at 11:00 hrs. at SLDC, Kalwa.

Ref.: 1. Agenda request vide **E-mail** dated 26.01.2025.
2. MoM Circulated vide MSLDC/TECH/OP/GCC/2449 Dated. 28.11.2024.

Dear Sir,

In reference to the above subject, it is to convey that as per directives from the Director (Operations), MSETCL, Chairman GCC, the 11th meeting of the GCC core group will be held as per following: -

Date of Meeting: 29.01.2025
Time of Meeting: 11:00 hrs.
Venue: 3rd Floor Conference Hall, SLDC, Kalwa.

The agenda for the said meeting is attached herewith.

It is requested to kindly make it convenient to attend the meeting physically. However, in case of any work exigencies, meeting may be attended through V.C for which the link will be shared separately.

Thanking you.

With regards,

(Shashank Jewalikar)
Executive Director, MSLDC
and
Member Convenor of GCC

Encl: As above.

Copy s.w.r. to:

The Director (Operations), Corporate Office, MSETCL, Mumbai.

Mailing List of GCC Core Group Members:

Sr. No.	Name of Organization	Name of Nominee/Designation	Committee Position	Contact No.	E-mail ID
1	MSETCL	Shri Satish Chavan, Director (Operations)	Chairperson	022-26492162	dirop@mahatransco.in
2	MSEDCL	Shri. Yogesh Gadkari Director (Commercial)	Member	022-26474211 / 26472131	directorcommsedcl@gmail.com
3	MSLDC	Shashank Jewalikar Executive Director (SLDC)	Member Convener	022-27301931	edmsebholding@gmail.com
4	MSETCL	Shri. Mahendra Walke (Chief Engineer Tr. O & M)	Member	9769213955	ceom@mahatransco.in
5	MSPGCL	Shri. Anil Kathoye CE (Works)	Member	022-6942200 69843434 Ext. 3419	cegw@mahagenco.in
6	WRPC	Shri P. D. Lone, S.E. Commercial	Member	9867622823	comml-wrpc@nic.in
7	MEDA	Shri Manoj Pise, General Manager	Member	9422319093	gmrd@mahaurja.com

Agenda for 11th Grid Co-ordination Committee meeting scheduled on 29th January 2025 at 11:00 Hrs. at SLDC, Kalwa.

Agenda Points: -

Item No.1

1.1 Confirmation of the Minutes of the 10th GCC Meeting held on 23.10.2024

1.2 Presentation on Maharashtra System Grid performance.

Item No.2: MSLDC Agenda:

2.1 Appraisal towards approval of the Procedure for implementation of the MERC (F, S & DSM for Solar & Wind Generation) (First Amendment) Regulations, 2024:

In accordance with the provisions of the MERC (Forecasting, Scheduling & Deviation Settlement for Solar & Wind Generation) (First Amendment) Regulations, 2024, MSLDC has submitted draft procedure to Hon'ble Commission for approval on 12-09-2024. Hon'ble MERC vide letter dated 15-01-2024 has issued approval for the said procedure.

As per said procedure, the roles and responsibilities of STU/Transmission Licensees are specified at Clause No. 7.0 which are attached herewith as **Annexure - 1**
Also, the roles and responsibilities of Distribution Licensees are specified at Clause No. 6.0 which are attached herewith as **Annexure - 2**

Further, vide letter dated 22-01-2024, MSLDC has requested distribution licensees to provide details of all the Solar projects commissioned under MSKVY scheme and submit information as and when these projects are commissioned.

In this respect, STU, Transmission & Distribution Licensees need to adhere to the roles & responsibilities along with timelines specified in the said procedure.

GCC members may like to discuss.

2.2 Monitoring compliance towards the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2019:

MSLDC, vide letters dated 17-10-2019, 31-03-2023, 15-06-2023 has requested STU (attached as **Annexure - 3**) to take appropriate actions towards implementation of the CEA (Technical Standards for connectivity to the Grid) Regulations, 2019. Also, the issue was taken-up in the 5th OCC meeting held on 21-03-2023, wherein OCC has requested STU to include required conditions in the Grid Connectivity letter & Final Grid Connectivity letters. Also, it was requested to monitor the compliance at the time of issuance of Final Grid Connectivity as monitored by CTU. However, till date the same is not yet implemented.

Day by day, RE capacity is increasing exponentially, hence, for stable & smooth operation of the Grid, compliance to these technical standards is necessary.

The Chief Engineer (STU) to brief the GCC about actions taken in this respect.

Item No.3: Agenda Points from various committees:

3.1 Operation Co-ordination Committee (OCC):-

a) High quantum of Partial Outages in MSPGCL units:

Recently, WRLDC vide letter No. WRLDC/SO/31/2024-25/58 Dated 23.01.2025 & in 582nd WRPC OCCM meeting, WRPC highlighted the high quantum of partial outage in MSPGCL thermal units due to poor coal quality and coal mill issues.

Also, in the various meetings conducted by MoP/CEA, MSPGCL was advised to minimize partial outages by opting for imported coal blending. The agenda point was discussed in 8th OCC, and as per the committee suggestion MSPGCL is requested to submit a long-term plan to mitigate the high quantum of partial outages due to coal quality and coal mill issues.

In this regard, on dt. 24.10.2024 MSLDC sent an email to MSPGCL to submit the short-term and long-term action plan to mitigate High Partial Outage Quantum due to Poor Coal Quality and Coal Mill Issues in MSPGCL Thermal Units. However, no correspondence received from MSPGCL in this regard till date.

GCC members may like to discuss.

b) New Targets of the relief quantum at each stage of AUFLS for Maharashtra State.

As per minutes of 158th Protection Committee meeting held on 24th July 2024, NPC Secretariat, CEA has communicated the new relief quantum for each region (based on Regional Peak Demand Met during the previous year) for implementation in the upcoming Financial Year (FY).

Existing target of the relief quantum at each stage of AUFLS for Maharashtra is given below:

UFR settings & **Existing** Target Quantum (in MW)					
Utility	49.40 Hz	49.20 Hz	49.00 Hz	48.80 Hz	Total
Maharashtra	805	810	815	820	3250

WRPC have calculated the distribution of new targets based on the above WR quantum among the states for different stages based on the peak demand met by states in the Financial Year 2023-24 and the new targets of the relief quantum at each stage of AUFLS for Maharashtra are as given below:

UFR settings & **New** Target Quantum (in MW)						
	State Peak Demand (MW)	**49.40 Hz**	**49.20 Hz**	**49.00 Hz**	**48.80 Hz**	Total
Maharashtra	28969	**1313**	**1576**	**1839**	**1839**	6567

Based on the above, the additional quantum required to be wired up under each stage of AUFLS is as follows:

Hence, Additional quantum (MW) over existing quantum required to be wired up under each stage of AUFLS					
	49.40 Hz	**49.20 Hz**	**49.00 Hz**	**48.80 Hz**	Total
Maharashtra	508	766	1024	1019	3317

For the implementation of additional AUFLS quantum, additional feeders need to be identified and additional under-frequency relays may be procured, if required. The criteria for identification of feeders is mentioned in the MoM of WRPC 158th PCM held on 24.07.2024 (enclosed).

Correspondence in this regard was done by this office vide L. no. 1728 dtd 28.08.2024 to inform the implementation plan along with the present status to wire up the additional quantum.

ACI& P has communicated MSEDCL vide letter no.744 dtd. 03.10.2024 the substation wise HV feeders (33/22/11kV) data and have requested to confirm zone wise and stage wise HV feeders other than already connected to existing AUFLS to be included for implementation of additional AUFLS quantum as per WRPC guidelines.

GCC Members may like to discuss.

3.2 Protection Co-ordination Committee (PCC):-

Approval of Revision in Philosophy of Line differential protection Relay` for 132kV & above transmission line:

During the 7th PCC meeting, the existing philosophy of provision of line differential relay for 132kV & above transmission lines as per Protection manual for Maharashtra was discussed. Further it was decided to review the existing policy & PCC committee has approved the same.

The Chief Engineer (ACI&P) to brief the GCC.

GCC Members may like to discuss.

3.3: Agenda Points received from STU
(Maharashtra Transmission Committee (MTC):-

MSETCL	
Agenda Point No. 1	Scheme of enhancement of transformation capacity by replacement of existing 2x25 MVA, 220/33 kV T/Fs by 2x50MVA, 220/33 kV T/Fs at 220 kV Sawangi S/s under EHV (O&M) Circle CSN in EHV PC (O&M) zone, CSN.
Agenda Point No. 2	Scheme of enhancement of transformation capacity by addition of 1x50 MVA, 132/33 kV T/F at 132 kV Majalgaon sub-station in EHV (O&M) Dn., Beed and replacement t of existing 2x25 MVA, 132/33 kV T/Fs by 2x50MVA, 132/33 kV

	T/Fs at 132 kV Niwali S/s under EHV (O&M) Dn., Latur in EHV PC (O&M) zone, CSN.
Agenda Point No. 3	Scheme of enhancement of transformation capacity by Addition and Replacement of Transformers at 07 No.s of sub-stations under EHV O&M Circle Nashik under EHV PC (O&M) zone, Nashik (132 kV Kalwan, 132 kV Mhasrul, 132 kV Malegaon, 132 kV, Adgaon, 132 kV Taharbad, 132 kV Igatpuri and 132 kV Pimparkhed sub-stations)
Agenda Point No. 4	Establishing a 33 kV voltage level by providing additional 2 x 25 MVA, 220/33 kV transformers, along with 6 x 33 kV bays, 2 x 33 kV PT bays, a 33 kV bus with a bus sectionaliser bay, and a 220 kV bus extension at the 220 kV Warud substation, under the EHV PC O&M zone Amravati
Agenda Point No. 5	Scheme of Installation of new 1x125 MVAR, 400 kV Bus Reactor with allied Bay equipment at 400 kV Waluj sub-station, Dist.- CSN
Agenda Point No. 6	Scheme of installation of new 2x80 MVAR, 400 kV line Reactor for 400 kV Kumbhargaon-Chandrapur Ckt-1 & Ckt-2 line with allied equipment at 400 kV Kumbhargaon sub-station under CSN
Agenda Point No. 7	Scheme of Installation of new 1x125 MVAR, 400 kV Bus Reactor with allied Bay equipment at 400 kV Kudus sub-station under Vashi zone.
Agenda Point No. 8	Scheme of replacement of existing 0.5 ACSR Twin Moose Conductor along with insulators and hardware by Twin HTLS Conductor equivalent to 0.5 ACSR Moose Conductor & allied hardwares & insulators of 400 kV Kalwa - Talegaon, Kalwa - Kharghar, Kharghar-Talegaon (DC) line and 400 kV Kalwa - Kharghar Bays at 400 kV RS Kalwa, 400 kV RS Kharghar and PGCIL Talegaon under Vashi and Pune Zone. *Scheme was ratified in 10th GCC (Agenda 4.11), with Costing Rs. 503.51 Cr. Due to revised cost of Rs. 621.71 Cr. and inclusion of revised overhead charges, Agenda is appraised to 11th GCC.*
Agenda Point No. 9	Scheme of replacement of existing Twin 0.5 Moose Conductor, insulators, all accessories and hardwares by equivalent Twin High Performance Conductor along with insulators & suitable hardwares & accessories of 400kV Lonikand to Chakan line (25km) along with associated bay strengthening work at 400kV Lonikand- I & 400kV Chakan substation.
Agenda Point No. 10	Scheme of replacement of existing twin 0.5 Moose conductor, insulators, all accessories & hardwares by equivalent new high-performance conductor (twin

	HTLS conductor having current carrying capacity 3000A) along with insulators & suitable hardwares & accessories of 400 kV Talegaon (PG) to Lonikand- I line (42.57 km) (for MSETCL portion only) along with associated bay strengthening work at 400kV Lonikand -I substation under Pune Zone.
Agenda Point No. 11	Replacement of existing 0.2 ACSR Panther conductor along with hardwares, insulator strings by HTLS conductor of 132kV Pandharpur-Utopian-Welspun-Mangalwedha & 132kV Pandharpur-Nimboli- Mangalwedha lines along with associated 132kV bay strengthening work under EHV O&M Division, Solapur.
Agenda Point No. 12	Providing additional 1x50 MVA, 220/22kV T/F along with HV GIS Bay & LV Bays at 220kV Hinjewadi-II S/s under Pune zone.
Agenda Point No. 13	Replacement of 3x50 MVA, 220/22kV T/Fs by 3x100 MVA, 220/22kV T/Fs, 3x22kV Incomer GIS Bays, 2x22kV Bus section GIS bays, 12x22kV GIS Feeder bays at 220kV Telco S/s under Pune zone.
Agenda Point No. 14	Replacement of 1x10 MVA, 132/22kV T/F by 1x25 MVA, 132/22kV T/F at 132kV Bhatghar S/s under Pune zone.
Agenda Point No. 15	Upgradation of voltage level from 22kV level to 33kV Level by replacement of 2X50MVA, 132/22kV T/Fs by 2X50MVA, 132/33kV T/Fs at 132kV Baramati S/s under Pune Zone.
Agenda Point No. 16	Replacement of existing 2 x 25MVA, 132/33kV T/Fs by 2 X 50 MVA, 132/33kV T/Fs at 132kV Shaha S/s under EHV O&M Division Nashik
Agenda Point No. 17	Conversion of existing 400 kV Kalwa - Padghe Ckt-I & II SCSC line to DCDC by using Twin HPC conductor.
Agenda Point No. 18	Construction of LILO on 100 kV Mohane - Amberath Line at 220 kV Jambhul Substation.
Agenda Point No. 19	Establishment of 400 kV Kalwa GIS S/s. in the premises of existing 400 kV Kalwa, Airoli, Dist. Thane *(The committee ratified the scheme in 5th GCC (Agenda No. No. 3.43) However due to revised cost of due to consideration of one-half breaker in GIS, cost is revised as 876.70 Cr.)*
Agenda Point No. 20	Establishment of 220/132/33kV Substation along with associated EHV lines at **Kesurdi MIDC**, Tal. Khandala, Dist. Satara *(The committee recommended the scheme in 10th GCC (Agenda No. 4.46) However due to consideration of 100 MVA, 220/33-22 kV T/Fs (Dual ratio) dual LV, cost is revised as 214.414 Cr.)*

Agenda Point No. 21	Establishment of 220/22KV Suraksha Smart City GIS Substation at Rajavali, Vasai (East), Tal-Vasai, Dist- Palghar *(The committee recommended the scheme in 9th GCC (Agenda No.4.134) However due to revised cost of ICT & consideration of M/C narrow based towers, cost is revised as 146.61 Cr.)*
Agenda Point No. 22	Conversion of 110 kV SCSC link from 220/110 kV Oglewadi S/s to 110 kV Borgaon S/s.
Agenda Point No. 23	Construction 132 kV DCDC link line by making LILO of one circuit of 132 kV Amalner (220 kV Amalner-II s/s) to Nardane to one circuit of 132 kV Amalner (132 kV Amalner-I s/s) to Parola line.
Agenda Point No. 24	Establishment of 220/132 kV Waghdari Substation along with associated lines *(The committee recommended the scheme in 9th GCC (Agenda No. 4.128), However due to change in conductor for LILO portion of 220 kV line from 0.4 Z ACSR Zebra to 525 sq.mm HPC conductor along with Hardwares, cost is revised as 229.11 Cr.)*
TPC-T	
Agenda Point No. 25	Augmentation of source and transformation capacity of existing 110 kV Powai station & up gradation of 110 kV system to 220 kV
Agenda Point No. 26	New 22 kV/33 kV bus extension for Discom outlet requirement at Versova, Saki, Panvel, Carnac, Kalyan, Dharavi, Trombay, Vikhroli, Kurla, Malad RSS.
Agenda Point No. 27	MV AIS switchgear conversion with GIS at Salsette, Borivali, Mankhurd
AEML-T	
Agenda Point No. 28	1000 MW HVDC (VSC based) Kudus-Aarey scheme (Pole-2)

Item No.4. Any other points raised by committee members with permission of Chair.

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Also, the Distribution Licensee shall issue letter in case of Change of Ownership of the Generating Unit/s.

6.12. Distribution Licensees provide information in case of change of ownership of Wind & Solar Generators with supportive documents

6.13. Disconnection of the non-complying/non-contracted generators located within its area, reported by QCAs through MSLDC to avoid unscheduled injection irrespective of ownership of PSS & Voltage level and submission of the compliance to the MSLDC within (10) days from the date of instructions are issued.

6.14. All the Generators shall install SEM to its individual generating unit (WTG/Invertor) at their own cost. It shall be the responsibility of the Distribution Licensee in whose area such generating unit is located irrespective of voltage level of the PSS, to issue technical specifications of the SEM arrangement along with it's inspection after installation, Meter testing & calibration, data fetching, etc. Such meters shall be under the ownership of respective Distribution Licensees, however, it should authorize generators to retrieve meter data for uploading on MSLDC Web Portal for de-pooling activity.

7. ROLES AND RESPONSIBILITIES OF STU/TRANSMISSION LICENSEES:

7.1. STU/Transmission Licensee shall ensure availability of ABT metering arrangements at all the Pooling Sub-Stations.

Metering & its calibration arrangements shall be as per the State Grid Code, 2020 and any other Code/Regulations governing metering arrangements notified by Hon'ble Commission & CEA, as amended from time to time.

7.2. STU/Transmission Licensee shall install Automated Meter Reading (AMR) facility at each Pooling Sub-Station under their control area and ensure meter data transfer to MSLDC for accounting purpose.

7.3. STU shall submit all relevant information of connectivity & synchronization in the format as prescribed by MSLDC as per **ANNEXURE – 8** from time to time. MSLDC shall maintain & update the dynamic Common Registry based on the information submitted by Distribution Licensees and STU.

7.4. MSLDC shall intimate the details of defaulting generators received from QCA to STU/Transmission Licensees for initiating actions as follows:

i. Generator Opting Open Access: Suspension of Open Access by STU (LTOA/MTOA).

ii. Generator selling power sale outside Maharashtra and Power Exchanges: Suspension of NoC/Consent issued by STU.

iii. Disconnection from Grid by the Transmission Licensee, if all the generators connected to PSS are defaulting generators to avoid unscheduled injection.

7.5. STU, through Grid Connectivity Letter shall instruct the RE Developer to:

- Comply the CEA Technical Standards for Connectivity to the Grid, 2019 and Working Group report, as amended from time to time.
- Install IED/RTU/Communication infrastructure at individual generating unit level (WTG/Invertor) and integrate with MSLDC System for monitoring real time AvC.
- Install Weather Sensing devices at individual generating unit level (WTG/Invertor) and integrate with MSLDC System for accurate Forecasting in accordance with the directives issued by CEA.

The compliance shall be ensured prior to the issuance of the Final Grid Connectivity.

7.6. STU/Transmission Licensee shall co-ordinate with MSLDC Control Room for real time operations in case of any tripping/outage (planned/forced)/overloading of evacuation infrastructure resulting in to curtailment/backing down of generation and implement the instructions of MSLDC.

7.7. STU/Transmission Licensees shall nominate at least two Nodal Officers for communication with MSLDC and inform the contact details such as Name, Designation, Mobile No. alternate contact No., E-mail ID, Address, etc to MSLDC within one (1) month from the date of publication of the said procedure.

In case of any changes in contact details, the same shall be communicated to MSLDC within seven (7) days.

based on the weather data provided by IMD or based on other methods used by the Forecasting Agency whose service may be availed. However, the forecast by the MSLDC shall be with the objective of ensuring secure grid operation.

5.4. The MSLDC shall maintain records and accounts of the time block-wise Schedules, the actual generation injected, contract rates and the deviations, for the Pooling Sub-Station and the individual Generators separately.

Provided that the de-pooling data along with Generator-wise meter data & schedules shall be uploaded by the QCAs & Generators.

5.5. Maintain State Deviation Settlement Account for Wind and Solar Generations.

6. ROLES AND RESPONSIBILITIES OF DISTRIBUTION LICENSEES:

6.1. All the Distribution Licensees shall timely ensure the registration of Generators contracted by them and by the Consumers availing Open Access under their control area.

6.2. Distribution Licensee shall submit the details of all the generators connected to the Pooling Sub-stations under their ownership to MSLDC.

6.3. As Distribution Licensees are issuing permission for Commissioning of each WTG/Solar Module/Invertor connected to any Pooling Sub-Station under their control area irrespective of ownership, the details of generators connected to all the Pooling Sub-Stations, including projects commissioned under MSKVY/MSKVY2.0 scheme, shall be provided by Distribution Licensees. The details shall be as per **ANNEUXRE – 8** within 15 days from the publication of the said procedure.

6.4. Ensure QCA registration of Wind & Solar Generators covered under the ambit of these regulations connected to PSS owned by it, with MSLDC prior to issuance of permission to Commission (PTC).

6.5. Submit Pooling Sub-Station-wise, Generating Unit-wise Power Purchase Agreement details including Contract rate, through dynamic web-application, as per **ANNEUXRE – 9** on monthly basis by 27th of every month or as and when contract is updated for

modelling in the Scheduling Software developed by MSLDC. However, for the month of February, the date shall be 25th day.

In case of non-submission of the updated details, the details available at MSLDC/submitted earlier shall be considered for modelling and Scheduling shall be carried out accordingly. In case of any errors in the calculations due to non providing of information & disputes in energy settlement with generators due to non-scheduling of generation, the concerned distribution licensee shall be responsible.

In case of any conflicts observed between multiple Distribution Licensees after consolidation of information from all the distribution licensees, the same shall be reported by MSLDC and it shall be the responsibility of concerned Distribution Licensees to submit corrected information immediately. In case corrected information is not submitted to MSLDC, such capacity under conflict shall not be considered for scheduling and concerned distribution licensees shall be responsible for any commercial impacts.

Further, it shall be the responsibility of the concerned Distribution Licensee(s) & Generator(s) to verify whether contract(s) have been mapped by MSLDC. Any discrepancies shall be reported by the Distribution Licensee(s) to MSLDC for rectification. Generator(s) shall submit discrepancies through concerned Distribution Licensee(s).

6.6. Ensure availability of ABT metering arrangement with AMR facility at Common Inter-connection Point for each Pooling Sub-Station owned by concerned DISCOM, including integration of the same in Meter data module/Dynamic Web-application operated by MSLDC as per the needs to MSLDC. Ensure availability of the SEM at each individual generator unit level (WTG/Invertor) in accordance with the provisions of the Amended Regulations & as amended from time to time.

Metering & its calibration arrangements shall be as per the State Grid Code, 2020 and any other Code/Regulations governing metering arrangements notified by Hon'ble Commission or CEA, as amended from time to time.

6.7. Use Automatic meter reading (AMR) technologies for transfer, analysis and processing of interface meter data to MSLDC in line with Metering /AMR protocol and Metering/AMR standards finalised

by STU in accordance with provisions of Metering Code and CEA Metering Regulations, as amended from time to time, for the Pooling Sub-Stations under their control area.

6.8. As per the State DSM regime, all the Distribution Licensees shall anticipate the generation from various Wind/Solar Generators having combined installed capacity less than 5 MW which are not covered under the ambit of the Principal & Amended Regulations, contracted by them or by their consumers while submitting Demand forecast to MSLDC.

The Demand of Distribution Licensee is forecasted by Distribution Licensees at T<>D interface point in the State Scheduling Software which is scheduled by MSLDC. The schedules of Wind & Solar Generators connected to PSS owned by Distribution licensee having contract with same Distribution licensee shall not be counted while computation of Sources Available for respective Discom in the Scheduling Process. Hence, Distribution Licensees shall consider the impact of same generation while submitting Demand forecasts to MSLDC.

6.9. Distribution Licensee shall co-ordinate with MSLDC Control Room for real time operations in case of any tripping/outage (planned/forced)/overloading of evacuation infrastructure resulting in to curtailment/backing down of generation and implement the instructions of MSLDC.

6.10. Distribution Licensees shall nominate at least two Nodal Officers for communication with MSLDC and inform the contact details such as Name, Designation, Mobile No. alternate contact No., E-mail ID, Address, etc to MSLDC within one (1) month from the date of publication of the said procedure.

In case of any changes in contact details, the same shall be communicated to MSLDC within seven (7) days.

6.11. Distribution Licensees are issuing Commissioning Certificates to Wind & Solar Generators irrespective of ownership of PSS & Voltage level. Hence, the Certificate of dismantling/Scrapping of any Generating unit (WTG/Solar Invertor) which is impacting total installed capacity of the PSS shall be issued by the distribution licensee in whose area the generator is situated in the format attached as per **ANNEXURE - 7**.

Also, the Distribution Licensee shall issue letter in case of Change of Ownership of the Generating Unit/s.

6.12. Distribution Licensees provide information in case of change of ownership of Wind & Solar Generators with supportive documents

6.13. Disconnection of the non-complying/non-contracted generators located within its area, reported by QCAs through MSLDC to avoid unscheduled injection irrespective of ownership of PSS & Voltage level and submission of the compliance to the MSLDC within (10) days from the date of instructions are issued.

6.14. All the Generators shall install SEM to its individual generating unit (WTG/Invertor) at their own cost. It shall be the responsibility of the Distribution Licensee in whose area such generating unit is located irrespective of voltage level of the PSS, to issue technical specifications of the SEM arrangement along with it's inspection after installation, Meter testing & calibration, data fetching, etc. Such meters shall be under the ownership of respective Distribution Licensees, however, it should authorize generators to retrieve meter data for uploading on MSLDC Web Portal for de-pooling activity.

7. ROLES AND RESPONSIBILITIES OF STU/TRANSMISSION LICENSEES:

7.1. STU/Transmission Licensee shall ensure availability of ABT metering arrangements at all the Pooling Sub-Stations.

Metering & its calibration arrangements shall be as per the State Grid Code, 2020 and any other Code/Regulations governing metering arrangements notified by Hon'ble Commission & CEA, as amended from time to time.

7.2. STU/Transmission Licensee shall install Automated Meter Reading (AMR) facility at each Pooling Sub-Station under their control area and ensure meter data transfer to MSLDC for accounting purpose.

7.3. STU shall submit all relevant information of connectivity & synchronization in the format as prescribed by MSLDC as per **ANNEXURE – 8** from time to time. MSLDC shall maintain & update the dynamic Common Registry based on the information submitted by Distribution Licensees and STU.

MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.
MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO.LTD.
CIN NO. U40109MH2005SGC153646

Office of The Chief Engineer
Maharashtra State Load Dispatch Center
Thane-Belapur Road, P.O. Airoli, Navi Mumbai Pin – 400 708.
Tele: 91-22-27601765 / 1766; Fax: 91-22-27601769 Email: cesldc@mahasldc.in

Ref: MSLDC/TECH/MSEDCL/REMC/ 02252 **Date:** 17 OCT 2019

To,
The Chief Engineer(STU),
4th Floor, Prakashganga,
MSETCL, BKC, Bandra (E),
Mumbai – 400 051

Sub: Incorporation of measurements of Harmonics, DC injection and Fliker by RE Generators at PCC in connectivity procedure.

Dear Sir /Madam,

Integration of large scale renewable energy (RE) sources in particular, Wind and solar energy into the grid introduces current and voltage harmonics due to power electronics devices. The intermittent nature of renewable energy (RE) sources has an impact on system operations including harmonics and power quality and influences overall performance of the power network.

Harmonics in network causes overheating and reduces the life of connected equipment. Therefore, harmonics is one of the most dominant attributes that needs to be kept in a minimum level to ensure efficient power network.

As per CEA (Technical Standards for Connectivity to the Grid) Regulation 2007 and amendments thereof, measurement of Harmonics, Direct Current (DC) Injection & Flicker is to be carried by RE generators at Point of Common Coupling (PCC) at least once in a year. The pointwise abstract of the required standards and compliance thereof as per the Central Electricity Authority(Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019 attached herewith as Annexure-A.

As such, it is requested to include measurements of these parameters as part of Connectivity Procedure i.e. requirement of certification to be specified in grid connectivity letter and the reports shall be collected at the time of issuance of final grid connectivity letter.

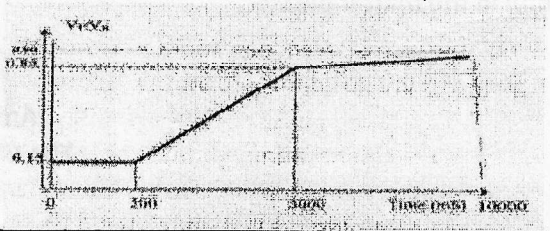
For information and further needful in the matter please.

(Anil V. Kolap)
The Chief Engineer
MSLDC

Copy s.w.r.s. to:
The Director (Operations), Prakashganga, MSETCL, Mumbai.

MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

Annexure-A: Pointwise abstract of the required standards and compliance thereof as per the CEA(Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019

CEA Regulation		Clause	Compliance
B1	Requirements with respect to Harmonics, Direct Current(DC) Injection and Flicker	1. Harmonic Current injections from a generating station shall not exceed the limits specified in Institute of Electrical and Electronics Engineers (IEEE) Standard 519	Submission of measurement report of harmonic current injection at PCC after commissioning
		2. The Generating station shall not inject DC current greater than 0.5% of the full rated output at the interconnection point.	Submission of DC offset current injection measurement report at PCC
		3. The generating station shall not introduce flicker beyond the limits specified in IEC 61000. Provided that the standards for flicker will come into effect from 1st April 2014.	Submission of Flicker measurement report at PCC
		4. Measurement of harmonic content, DC injection and flicker shall be done at least once in a year in presence of the parties concerned and the indicative date for the same shall be mentioned in the connection agreement.....	Connection Agreement shall clearly mention this clause.
B2	For generating station getting connected on or after completion of 6 months from date of publication of these regulations in the Official Gazette	1. The generating station shall be capable of supplying dynamically varying reactive power support so as to maintain power factor within the limits of 0.95 lagging to 0.95 leading	Plat shall be able to operate power factor and voltage control mode, preferably voltage control mode
		2. The generating units shall be capable of operating in the frequency range of 47.5 Hz to 52 Hz and shall be able to deliver rated output in the frequency range of 49.5 Hz to 50.5 Hz...	Plant shall be able to demonstrate through simulations and verified against test measurements.
		3. The generating station connected to the grid, shall remain connected to the grid when voltage at the interconnection point on any or all phases dips up to the level depicted by the thick lines in the following curve.... 	Plant shall be able to demonstrate through simulations and third party certificate with test reports shall be submitted.
		4. The generating stations with installed capacity of more than 10 MW connected to voltage level of 33 kV and above – a. shall be equipped with the facility to control active power injection in	a. Plant shall be instructed to regulate the generator output as per RLDC/SLDC instruction and shall demonstrate

		accordance with a set point, capable of being revised based on the directions of the State Load Despatch Centre or Regional Load Despatch Centre, as the case may be. b. Shall have governors or frequency controllers of the units at a drop of 3 to 6% and a dead band not exceeding ±0.03 Hz... c. Shall have the operating range of the frequency response and regulation system from 10% to 100% of the maximum Alternating Current active power capacity, corresponding to solar insolation or wind speed, as the case may be; d. Shall be equipped with the facility for controlling the rate of change of power output at a rate not more than ±10% per minute	prior to commence scheduling. Instructions from RLDC/SLDC CR may be issued to generator for testing this. b. - c. Plant shall able to demonstrate the frequency response inn simulation as per standard and shall respond to real time grid event if any after commissioning. Reports shall be submitted for validation of actual response w.r.t simulations d. Plant shall able to demonstrate in simulation, as well as in real time above shall be tested based on real time instructions from RLDC/SLDC.
		5. The generating stations of aggregate capacity of 500 MW and above shall have the provision to receive the signal from the State Load Despatch Centre or Regional Load Despatch Centre, as the case may be, for varying active and reactive power output.	Plant shall have the provision to receive the signal from RLDC/SLDC, shall be tested prior to commissioning.
		6. The standards in respect of the switchyard associated with the generating stations shall be in accordance with the provisions specified in respect of 'Sub-stations' under Part III of these standards.	-
		7. The generating station connected to the grid, shall remain connected to the grid on any or all phases (symmetrical or asymmetrical overvoltage conditions) rises above the specified values given below for specified time. Over voltage (pu) / Minimum time to remain connected (Seconds) 1.30 < V / 0 Sec (Instantaneous trip) 1.30 ≥ V > 1.20 / 0.2 Sec 1.20 ≥ V > 1.10 / 2 Sec V ≤ 1.10 / Continuous	Plant shall be ale to demonstrate in simulations and third-party certificate with test reports shall be submitted.

*PCC-Point of Common Coupling (EHV bus of wind/solar plants.)

MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO.LTD.

CIN NO. U40109MH2005SGC153646

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Maharashtra State Load Dispatch Center
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Pin – 400 708.
Tele: 91-22-27601765 / 1766;
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Email: cesldc@mahasldc.in

The Chief Engineer (STU)
Prakashganga, Corporate Office,
MSETCL, Mumbai.

Ref: MSLDC/TECH/OP/REMC/STU/ No 00512 **Date:** 31 MAR 2023

Sub: - Compliance to CEA Regulations on Technical Standards for Connectivity to the Grid by RE Generators.
_Incorporation of conditions in Grid connectivity & Final Grid Connectivity letters thereof.

Ref: 1) CEA (Technical Standards for Connectivity to the Grid) Regulations, 2019.
2) CEA Working Group report dated July`2022 towards compliance of CEA Regulations.
3) WRLDC/ SO-II/027/2023/10 Dt: 10-03-2023.

The CEA (Technical Standards for Connectivity to the Grid) Regulations, 2019 have been notified in the Country. In accordance with the said regulations, compliance is required from RE Generators. To discuss & resolve various issues observed for compliance of these regulations, a Working Group with members from CEA, CTU, POSOCO & SECI was constituted under the Chairmanship of the Member (GO&D), CEA. The said working group has submitted report in July, 2022 and the said report has been implemented w.e.f. Nov'2022. The WG has discussed with RE Developers, OEMs & study agencies prior to finalization of the report. WRLDC, vide letter dated 10.02.2023 has requested all the SLDCs in the WR to implement the CEA regulations with intimation to WRLDC. The copy of letter along with WG report is attached herewith for your reference.

In accordance with the said report, the RE generator shall submit the complete CON-4/technical connection data at least 12 months/1 year prior to the physical interconnection with Grid with the undertaking that the data/RE plant model submitted is accurate and representative of the actual plant response. Further based on the submitted data/RE plant model and the studies carried out the RE generator shall take advance action for implementation of the required corrective measures towards compliance with CEA Regulations on Technical Standards for Connectivity to the Grid, before physical interconnection with Grid, failing which physical interconnection may not be permitted.

Also, per the said regulations, the List of Test/Study Reports required to be submitted by RE Generators in compliance to CEA Regulations on Technical Standards for Connectivity to the Grid is as below:

a. ***Power Quality test***
   - *Harmonic Current Injection at Point of Inter-connection (POI)*
   - *DC Current Injection at POI*
   - *Flicker injection at POI*

b. ***Reactive Capability test***
   - *Reactive power capability (0.95 lag – unity – 0.95 leading) at rated output*

c. ***Voltage ride through Test***
   - *Study analysis to demonstrate ride through capability for balance and unbalanced faults (LVRT & HVRT)*

d. ***Frequency response & operational capability test within specified frequency /voltage band***
   - *Rated output for voltage (0.95pu -1.0 pu – 1.05 pu) and freq. (49.5 Hz – 50.5 Hz)*

- *Frequency Response test*

e. ***Active power control set point***
   - *Analysis to show capability to control active power injection in accordance with a set point*

f. ***Ramping capability test***
   - *Study analysis for rate of change of power output*

The WG report has formulated a procedure for collection & validation of above data wherein CTU in co-ordination with RLDC is responsible for monitoring & review of the compliance. Hence, similar process i.e. STU in co-ordination with MSLDC need to formulated in the State.

The said issue has been discussed in 5th OCC meeting held at MSLDC on dt: 21-03-2023. In the said meeting, OCC has requested STU to take-up the issue with all the RE Generators to whom Grid connectivity has been granted to submit required information/data prior to submission of proposal for 'Final Grid Connectivity' so that same can be jointly validated and if found order, 'Final Grid Connectivity' can be issued by STU and incorporate all conditions in the Grid Connectivity Letter.

In view of above, it is requested to take up the issue with all the proposed RE Developers to whom Grid Connectivity has been issued.

Further, it is requested to incorporate a condition in 'Grid Connectivity Letter' regarding mandatory submission of:

a) Required data/information in the 'Grid Connectivity Letter' being issued for new Projects with timeline for submission of information/data at least 1 year prior to the submission of proposal for 'Final Grid Connectivity'.

b) Various Test Reports (WTG/Invertor level) specified in the Regulations & Working Group Report to MSLDC along with QCA registration process prior to submission of proposal for 'Synchronization Approval'.

Submitted for needful please.

Encl: As above.

(Mahesh Bhagwat)
Chief Engineer,
MSLDC, Airoli.

Copy s.w.r.s to:

- The Director (Operations), MSETCL, Mumbai.
- The Executive Director, MSLDC, Airoli, Navi Mumbai.

OCC MoM

MAHATRANSCO
Maharashtra State Electricity Transmission Co. Ltd.

MAHARASHTRA STATE ELECTRICITY TRANSMISSION CO.LTD.
CIN NO. U40109MH2005SGC153646

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Fax :91-22-2659 0808
Email: edmsebholding@gmail.com
Website : http://www.mahasldc.in

RIGHT TO INFORMATION

Ref. No. CE/MSLDC/OP/OCC/ No 00822 **Date:** 18 MAY 2023

To,
Members of the OCC as per mailing list.

Sub: Minutes of the 5th Operation Co-ordination Committee (OCC) meeting held on 21.03.2023 at 11:30 hrs through physical & video conferencing mode.

Ref.: 1. MOM Circulated vide MSLDC/TECH/Op/OCC/1598 Dated. 12.09.2022
2. E-mail dtd. 17.01.2023 for agenda request.

Dear Sir/Madam,

In reference to the above subject, the 5th Operation Co-ordination Committee (OCC) meeting was held on 21.03.2023 at 11:30 hrs through physical & video conferencing mode.

The Minutes of the said meeting are attached herewith for ready reference.

Yours sincerely,

Encl: As above.

(Girish Pantoji)
Superintending Engineer, SLDC
(Member Convener of OCC)

Copy s.w.rs. to:
The Director (Operations), MSETCL, Prakashganga, Mumbai.

is the poor visibility of RE generation. Thus, for further improvement of RE Forecasting and for better grid operations, complete visibility of RE Generation is utmost important. In view of the same, MSLDC is submitting list of RE generators having poor/zero visibility at MSLDC on fortnightly basis to MSEDCL since last 3-4 years. Further, MSEDCL having maximum contracted capacity and nodal agency for issuance of Open Access or NoC, action from MSEDCL is envisaged. However, compliance in this matter is not yet received from MSEDCL.

The Superintending Engineer (RE), MSEDCL, informed that they are acting on the list provided by MSLDC and the payment of such RE Generator is kept on hold till the visibility is not established.

The Chairman of OCC enquired about the reasons for non-availability of visibility & whether all RE PSS are integrated with MSLDC SCADA system. The Superintending Engineer (SCADA), MSLDC informed that synchronization permission is not issued to new RE PSS until real time visibility at MSLDC is established. Further, all the RE PSS are integrated with MSLDC SCADA system. The major issue of non-availability of real time generation is due to issues in communication links.

The Chairman of OCC requested the Superintending Engineer (SCADA), MSLDC, to study various types of communication links and identify specific type of communication so that MSLDC, through STU can make efforts to bring in uniformity and reliability in communication service provisioning by RE Generators. He further requested the Superintending Engineer (RE), MSEDCL, to share the communications made with defaulting RE Generators wherein action of holding payment is taken.

With due deliberations, OCC took a note of the same.

4.9. Item No. 4.9: Compliance of the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2019:

The Executive Engineer (REMC-Operation) I/c, MSLDC, informed that the CEA (Technical Standards for Connectivity to the Grid) Regulations, 2019 have been notified in the Country. In accordance with the said regulations, compliance is required from RE Generators. To discuss & resolve various issues observed for compliance of these regulations, a Working Group (WG) comprising of members from CEA, CTU, POSOCO & SECI was constituted under the Chairmanship of the Member (GO&D), CEA. The said working group has submitted report in July, 2022 and the said report has been implemented w.e.f. Nov'2022. The WG has discussed with RE Developers, OEMs & study agencies prior to finalization of the report. As per the WG report, CTU in co-ordination with RLDC is going to monitor & review the compliance. Hence, similar process i.e. STU in co-ordination with MSLDC need to be formulated in the State.

Detailed discussions were held in the meeting. The Chief Engineer (STU) requested the Chief Engineer (MSLDC), to give letter in the said matter so that appropriate conditions can be added in the STU's Grid Connectivity & STU's Final Grid Connectivity Letter.

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Tele: 91-22-27601765 / 1766; Fax: 91-22-27601769 Email: cesldc@mahasldc.in

Ref: MSLDC/TECH/OP/REMC/CEA/1018 **Date: 15.06.2023**

NOTIFICATION
to all the Wind & Solar Generators and RE Developers

Sub: Compliance of the CEA (Technical standards for Connectivity to the Grid) (Amendment) Regulations, 2019 dated 06.02.2019.
...Submission of test/study reports & information by RE Generators thereof.

Ref: 1. The CEA (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019.
2. T.O. Circular No. MSLDC/TECH/OP/REMC/LVRT/1582 dated 07.09.2020.
3. WRLDC Letter No. WRLDC/SO-II/027/2023/10 dated 10.02.2023.

With reference to the above subject, it is to state that the CEA has notified CEA (Technical Standards for Connectivity to the Grid), Regulations, 2007 amended in 2019. In accordance with the said regulations, all the RE Generators are mandated to comply with various provisions. Accordingly, this office, vide circular cited u/r. 2, has appealed all the RE Generators in the State to submit compliance of these regulations.

The CEA had constituted a Working Group (WG) under the chairman ship of the Member (GO&D), CEA, having members from CEA, CTU, POSOCO & SECI for discussing various issues observed during compliance of these regulations. The said WG has submitted a report in July' 2022, based on detailed discussions with various Stake holders viz. RE Developers, Study agencies, OEMs, etc. The WG report has explanation for assessment of compliance, procedure & timelines and list of test/study reports. The copy of said WG Report is attached herewith as **ANNEXURE – 1** for ready reference. Further, it has been specified that the said WG report shall come in to effect from three months of issuance of the WG report. Thus, the recommendations of the said report have become effective from Nov' 2022.

In view of the same, all the RE Generators are requested to adhere to the procedure specified in the said WG report and submit study/test reports in compliance with the said CEA regulations, in the prescribed formats in the WG report to MSLDC.

All the upcoming RE generators are requested to carry out testing and submit compliance report in prescribed format to MSLDC prior to submission of application for seeking Synchronization permission from MSLDC. All the RE generators are requested to note that in the absence of compliance towards CEA regulations, the proposal for synchronization shall not be processed by MSLDC.

Further, all the existing RE generators are requested to arrange to carry out testing/study towards compliance and submit the required data immediately.

Please note that any non-compliance in this respect shall be communicated to the appropriate Commission and action as per the Regulation No. 12 (3) of the CEA (Technical Standards for Connectivity to the Grid) (Amendment) Regulations, 2019, shall be initiated.

All the QCAs are requested to inform the generators connected to the PSS to which they are representing so as to smoothen the implementation process.

All the Distribution Licensees procuring power from Intra-State Wind & Solar Generators and granting Open Access to their embedded consumers for contracting power through Wind & Solar Generators are requested to pass on necessary instructions to such generators for compliance to the said CEA Regulations & Hon'ble MERC (State Grid Code) Regulations, 2020.

The Chief Engineer STU) is requested to incorporate a condition of submission of test reports & information specified in the WG Report in the 'Grid Connectivity Letter' issued to RE Generators and arrange for joint verification (STU & MSLDC) of the data prior to the issuance of 'Final Grid Connectivity' Letter by STU.

The said circular along with common database of available information has been uploaded on MSLDC Website: www.mahasldc.in on 'News & Announcements' page under 'Wind & Solar DSM' Menu (https://mahasldc.in/home.php/news-announcements/).

Please treat the matter as **MOST URGENT.**

Encl: As above.

(Mahesh Bhagwat)
Chief Engineer
MSLDC

Copy s.w.r.s. to:
- The Director (Operations), Prakashganga, MSETCL, Mumbai.
- The Member Secretary, WRPC, Andheri, Mumbai.
- The Executive Director, MSLDC, Airoli, Navi Mumbai.
- The Executive Director, WRLDC, Andheri, Mumbai.

Copy f.w.c.to:
- The Chief Engineer (STU), Prakashganga, MSETCL, Mumbai.

Copy to:
- All the QCAs in the State.
- All the Distribution Licensees in the State.

Mailing List:
- All Wind & Solar Generators in the State.