Before the
MAHARASHTRA ELECTRICITY REGULATORY COMMISSION
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Case No. 143 of 2024

Case of UltraTech Cement Ltd. seeking direction, clarification, or permission for hybrid project connectivity that allows for a higher quantum of the two installed capacities (solar and wind) instead of the combined total (solar and wind) capacity.

UltraTech Cement Limited (UTCL) -----Petitioner

V/s

1) Maharashtra State Electricity Transmission Co. Ltd. (MSETCL)/ STU
2) Maharashtra State Electricity Distribution Co. Ltd. (MSEDCL)
3) Maharashtra Energy Development Agency (MEDA)

-----Respondents

Coram

Sanjay Kumar, Chairperson
Anand M. Limaye, Member
Surendra J. Biyani, Member

Appearances:

For Petitioner	:- Mr. Abhishek Munot (Adv.)
For MSETCL/STU	:- Mr. Peeyush Sharma (Rep)
For MSEDCL	:- Mr. Anup Jain (Rep)
For MEDA	:- Mr. Manoj Pise (Rep)

ORDER

Date: 23 June 2025

1. UltraTech Cement Ltd. (UTCL/Petitioner) has filed this Petition on 8 August 2024 under Section 86(1)(c), (e), (k) and Section 181 of the Electricity Act (EA), 2003, read with Regulation 39 of the MERC (Transaction of Business and Fees and Charges) Regulations, 2022, along with Regulations 32 and 33 of the MERC (Transmission Open Access) Regulations 2016 (TOA Regulations 2016), as well as Regulation 100 of the Maharashtra Electricity Grid

Code Regulations 2020 (MEGC Regulations 2020) and Regulations 36 and 37 of the MERC (Distribution Open Access) Regulations 2016 (DOA Regulations) 2016). UTCL is seeking direction, clarification, or declaration and/or permission for hybrid project connectivity for a higher quantum of the two installed capacities (solar and wind) instead of connectivity for the combined total (solar and wind) capacity.

2. **UTCL's main prayers are as follows**:

"(a)Hold, direct (through practice directions or otherwise), clarify/declare and/or permit hybrid projects to seek connectivity for at least a quantum higher of the two (solar and wind) installed capacity as per the design of the project and not basis the combined total (solar and wind) capacity.

(b)Pass appropriate directions to the Respondents to take appropriate steps to forthwith implement direction/ clarification sought by the Petitioner in terms of Prayer (a) above;

(c) Pending the adjudication of the present Petition, direct Respondents not to withhold any connectivity or other approvals of the Petitioner for setting up of hybrid or other renewable projects in Maharashtra.-----"

3. **The Petition states as follows:**

3.1 UTCL is engaged in manufacturing grey cement, white cement, and other allied products, along with ready-mix concrete (RMC). UTCL has two cement manufacturing plants: Awarpur Cement Works and Manikgarh Cement Works. UTCL intends to establish hybrid generation plants to supply energy for consumption in these facilities plants.

3.2 The case is filed seeking connectivity for a higher quantum of the two (solar and wind) installed capacities instead of connectivity for the combined total (solar and wind) capacity. UTCL sought clarification/direction in line with the policy of the Ministry of New and Renewable Energy, Government of India (MNRE), the Central Electricity Regulatory Commission's Regulations (CERC), and the policies followed in other states (Gujarat, Rajasthan, Madhya Pradesh, and Andhra Pradesh).

3.3 Currently, MEDA's single window portal does not permit connectivity based on the higher of the two capacities. The portal only allows requests for connectivity based on the total capacity of both the solar and wind installed capacities. (Example: A hybrid project of 50 MW solar and 40 MW wind is required to take connectivity of 90 MW, and not a quantum lesser than the total of 90 MW.)

3.4 The Grounds of the Petition are as follows:

A. <u>Statutory framework prescribes freedom to seek desired connectivity:</u>

3.5 Under Section 86 of the EA 2003, the Commission is required to facilitate intra-state transmission and promote renewable energy by providing appropriate grid connectivity. According to Section 86(1)(h) read with Section 181, the Commission is also responsible for specifying the State Grid Code.

3.6 Accordingly, the TOA Regulations, 2016, and the MERC State Grid Code Regulations, 2020, have been specified, which deal with the issue of connectivity with the grid.

3.7 In terms of Regulation 15.1 of MEGC Regulations 2020 and Regulation 6.3 of the TOA Regulations 2016, every user, generating company, or requestor must follow the CEA Technical Standards for Connectivity to the Grid, Regulations 2007. These Regulations allow freedom regarding the ability of a user, generating company, or requestor to seek connectivity according to the requirements and design of the project, provided that various technical standards are met**.**

B. **Connectivity for the total cumulative capacity of wind and solar in a hybrid project is not in line with MNRE's National Wind-Solar Hybrid Policy 2018, as well as the Maharashtra Policy 2020.**

3.8 National Wind-Solar Hybrid Policy was issued on 14 May 2018 by the MNRE with the following stated objectives:

(a) Solar and wind power being variable in nature pose certain challenges on grid security and stability.

(b) Studies revealed in India that solar and wind resources are complementary to each other and hybridization would help in minimizing the variability, apart from optimally utilizing infrastructure, including land and transmission system.

(c) Existing wind farms have scope of adding solar PV capacity, and similarly, there may be wind potential in the vicinity of existing solar PV plants.

3.9 In view of the above, it *inter alia* envisages:

(a) Wind turbines and solar PV systems will be configured to operate at the same point of grid connection.

(b) New hybrid projects as well as hybridization of existing projects will be promoted.

(c) No additional connectivity/ transmission capacity charges shall be levied by the respective transmission entity if already granted transmission/ access is being used. Transmission charges may be applicable for additional transmission capacity / access granted as per prevailing regulations.

3.10 It was contemplated that hybrid projects configured to operate at the same point of connection also utilize transmission capacity optimally. This consideration stems from the complementary nature of hybrid projects; that is, where solar generation is expected to be higher, wind generation would be lower, and vice versa. The interplay of such complementary generation would ensure a stable supply of power, enabling these projects to provide firm power. Hybrid projects can utilize significantly less cumulative transmission capacity since wind-solar generation is complementary to each other.

3.11 Therefore, connectivity as sought (lower than the sum total of generation) ought to be granted, being in line with MNRE's National Wind-Solar Hybrid Policy, 2018, since it allows for maximum benefits of hybridisation of the project and efficient use of transmission capacity.

3.12 Since Maharashtra is treating co-located plants at par with non-collocated plants in such a manner by allowing connectivity for only the sum total of generation, this is not in line with MNRE's National Wind-Solar Hybrid Policy 2018.

3.13 GoM's Unconventional Energy Generation Policy 2020 (**GoM RE Policy 2020**) envisages 25,000 MW of renewable energy to be set up in Maharashtra by 2025. It also states that 'Priority will be given to the development of hybrid projects by combining wind and /or solar projects with other conventional / non-conventional energy sources and incorporating storage capacity as required. It further states that renewable energy projects shall be developed based on MNRE's guidelines.

3.14 CERC, vide CERC (Connectivity and General Network Access to the Inter-State Transmission System) Regulations, 2022, allows the grant of open access for a quantum lesser than the installed capacity for hybrid projects.

3.15 Further, other States such as Gujarat and Rajasthan also allow connectivity/ open access at a lower rate than the total quantum of the hybrid project. Furthermore, other regulators have stated that the requirement for transmission capacity/connectivity can be lower than the total installed capacity of wind or solar generation, which aligns with the MNRE's National Wind-Solar Hybrid Policy. It is noteworthy that even the GoM RE Policy 2020 mandates adherence to MNRE's guidelines.

3.16 UTCL supporting his claim referred to the following states' RE Policies, stating that the requirement for transmission capacity/connectivity can be lower than the total installed capacity of wind or solar generation.

A. Gujarat Renewable Policy, 2023:

B. Rajasthan Renewable Policy 2023:

C. Andhra Pradesh Wind-Solar Hybrid Power Policy, 2018:

3.17 Contrary to the RE Policies, Respondents in Maharashtra have indicated that the cumulative capacity of wind and solar in a hybrid project should be considered for connectivity/open access. This stance occurs despite the absence of any Regulation, Practice Directions, or Procedures mandated by the Commission. Such a perspective from the Respondents undermines the objective of hybrid projects and contradicts MNRE's National Wind-Solar Hybrid Policy since:

(a) There is no difference between a co-located hybrid project and a non-co-located hybrid project if the cumulative capacity of wind and solar capacity in a hybrid project is to be considered for connectivity/ open access.

(b) The developer shall be required to build AC infrastructure for the total capacity of wind and solar, even though evacuation is not intended to exceed the greater individual capacity of wind and solar.

(c) This leads to inefficient and wasted blocking of transmission capacity, since the

cumulative of wind and solar capacity generation is never achieved.

(d) The above is despite the developer installing proper control system (hybridization software/ controller) or any other appropriate control system to restrict the evacuation of electricity to the transmission capacity sought.

4. **MSETCL(STU)'s reply dated 27 September 2024 states as follows:**

Note: It is worth noting that UTCL's prayers are only for the Wind-Solar Hybrid Project, and UTCL has clarified it. Hence, STU's submission to that extent is considered for clarity.

4.1. Connectivity to the InSTS for RE and hybrid projects is governed by the TOA Regulations, 2016.

4.2. Regulation 5.2 of the TOA Regulations, 2016, mandates the filing of separate applications for the grant of Connectivity to InSTS for RE Generators and non-RE Generators, along with the required fee. Regulation 9.2 of the TOA Regulations, 2016 mandates the submission of separate bank guarantees per MW for applications for the grant of connectivity.

4.3. STU had been processing the application for the grant of connectivity to the InSTS system under the "Procedure for Grant of Grid Connectivity to InSTS' framed in accordance with the TOA Regulations, 2016 and approved by the Commission.

4.4. Further, STU has streamlined the processing of grid connectivity applications for renewable energy projects over time in accordance with the GoM's RE Policy, 2020, and the associated methodology, subject to the regulatory framework established by the Commission. UTCL has referred to the policies of various other state governments; however, it has not referenced the GoM's RE Policy, 2020 or the associated methodology. The GoM's RE Policy, 2020 states that until the objectives of the Policy are met, priority will be given to the development of hybrid projects by combining wind and/or solar projects with other conventional or non-conventional energy sources and incorporating storage capacity as required. Such projects will be categorized based on those objectives according to their source.

4.5. In view of the GoM RE Policy, STU has prepared a separate detailed draft "Procedure for grant of connectivity of projects based on RE sources to the InSTS." This is done after considering the relevant provisions of the TOA Regulations, 2016, CERC approved detailed grid connectivity procedure, and the GoM RE Energy Policy 2020.

4.6. Accordingly, STU vide letter dated 23 August 2024 has submitted the draft "Procedure for grant of connectivity of projects based on RE sources to the InSTS System" for the approval of the Commission.

4.7. The connectivity-related issues of RE Hybrid projects and Thermal and RE Hybrid projects are related to Co-located and Multi-located Plants.

4.8. As per MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019, amongst various Hybrid RE projects, projects such as Wind-Solar Hybrid, Solar-Biomass Hybrid, Solar-Co-Generation Hybrid, Solar Thermal Hybrid, etc. are permitted.

4.9. UTCL in the Petition has referred to the National Wind-Solar Hybrid Policy, 2018, various Wind-Solar Policies notified by other states, the MoP Bundling Scheme, 2018 and 2022, along with related amendments. However, CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022 permitted only co-located RE Hybrid Projects.

4.10. Further, CERC, in its recently notified (12 June 2024) CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2024, in continuation with its earlier approach, permitted only co-located RE Hybrid and co-located Solar Thermal Projects.

4.11. The connectivity-related issues raised in the present matter under various eventualities that can possibly exist are summarised as follows:

Particulars	**STU submission**
1. Connectivity to RE Hybrid Projects (Excluding Solar Thermal)	
a) Co-located	Connectivity is being granted to such projects as per the existing procedure or can be granted upon approval of draft detailed "Procedure for grant of connectivity of projects based on Renewable Energy sources to the Intra-State Transmission System".
b) Multi-located	As per its interpretation, connectivity to such projects is not allowed as per the present regulatory provisions. The same can be allowed as and when approved by the Commission through relevant Regulations and/or Orders of the Commission

4.12. UTCL has raised an issue of grid connectivity to a non-co-located plant. The same issue has already been raised by STU as part of its comments/suggestions on the draft MERC (Multi Year Tariff) Regulations, 2024.

4.13. In view of the priority envisaged under the GoM's, RE Policy, 2020 to the development of hybrid projects by combining wind and/or solar projects with other conventional / non-conventional energy sources and subject to the existing regulatory framework, STU has already proposed following relevant clauses related to the present matter in a draft detailed "Procedure for grant of connectivity of projects based on Renewable Energy sources to the InSTS" which is submitted before the Commission.

> *"5.6 The Applicant implementing the Hybrid Renewable Energy Project, including the Round the Clock Hybrid Project, shall be eligible to apply for the Connectivity at one location only in view of the Eligibility criteria for such Hybrid Renewable Energy Project as specified in the Regulations of the Commission.*

Provided that, the Applicants implementing the Hybrid Renewable Energy Project(s)/Renewable Hybrid Generating Station(s) including Round-The-Clock (RTC) Hybrid Project complemented with power from Coal Based Thermal Power Projects, shall be eligible to apply for separate Connectivity for each location based on the same LOA/LOI or PPA, for the capacity of the project not exceeding the quantum of power for which LOA/LOI has been awarded or PPA has been signed, as and when such Hybrid RE Project are allowed at different location through relevant Regulations and/or Orders of the Commission. For this purpose, the locations and capacity at each such location, duly certified by the Renewable Energy Implementing Agency notified by the Government or the distribution licensee, as the case may be, shall be submitted along with the Connectivity applications."

5. **UTCL in its Rejoinder dated 3 December 2024 to MSETCL Reply stated as follows:**

5.1. UTCL further clarifies that the scope of the Petition is restricted to RE-based hybrid projects (specifically solar and wind) and does not extend to solar and thermal hybrid projects, or RE hybrid projects (being solar and wind) and thermal. Therefore, MSETCL's submissions relating to plants other than RE hybrid projects should be ignored.

5.2. UTCL does not rely on the Ministry of Power's scheme for flexibility in the generation and scheduling of thermal and hydro power stations through bundling with renewable energy and storage power, as it is not applicable to the present Petition. Therefore, MSETCL's submissions in this regard need to be ignored.

5.3. MSETCL's assertion that UTCL has not referenced the Maharashtra Renewable Energy Policy, 2020 statement is incorrect. UTCL has, in fact, relied on the same.

5.4. MSETCL, in its submission, has not addressed the issue raised by UTCL regarding the quantum of connectivity in the case of a hybrid project comprising solar and wind energy plants. UTCL argues that the higher capacity of either solar or wind power of the project should be considered the minimum capacity for granting connectivity in a hybrid power plant.

5.5. MSETCL's statement that no connectivity can be granted to non-co-located RE-based Hybrid Projects is incorrect and contrary to the statutory framework.

5.6. UTCL clarifies that it is not seeking an amendment to the regulations, as wrongly alleged by MSETCL. As evident from UTCL's prayers, it is merely seeking a clarification or declaration that connectivity be granted for a quantum that is higher than the installed capacity of solar and wind projects.

5.7. There is no express restriction regarding the applicable regulations of the Commission in (a) permitting hybrid projects to seek connectivity for at least a quantum higher than the installed capacity of either solar or wind, as per the project's design, rather than based on the combined total capacity of solar and wind. (b) Extending the above dispensation to non-co-located hybrids projects.

5.8. MSETCL has not provided a copy of the draft Procedure for the grant of connectivity of projects based on Renewable Energy sources to the Intra-State Transmission System. Hence, UTCL is unable to provide its views on the said draft.

5.9. MSETCL's submission that this MERC (Terms and Conditions for Determination of Renewable Energy Tariff) Regulations, 2019 permits only co-located hybrid generation is denied as being erroneous. This Regulation is not applicable to UTCL as it does not fulfil the requirements specified in the Regulations. Also, the CERC Regulations referred to by MSETCL are not applicable to UTCL.

5.10. In terms of the provisions of the Electricity Act, 2003, connectivity cannot be denied to non-co-located hybrid projects (i.e. Sections 9 and 10 read with Section 73 of the EA). A generator has the right to obtain connectivity to the grid so long as technical standards for connectivity are met (as prescribed under Section 73 by the Central Electricity Authority). There is also no express restriction in terms of the applicable regulations of this Commission.

5.11. MSETCL has not provided copies of the comments submitted on the draft MERC (Multi-Year Tariff) Regulations, 2024, for non-co-located energy storage systems.

6. **MSEDCL Reply dated 9 December 2024 states as follows:**

Maintainability of the Petition:

6.1. It is a settled principle of law that regulatory powers must be exercised within the framework of established laws. UTCL's reliance on specific cases to justify overreach of regulatory authority is therefore misplaced.

6.2. UTCL's contention qua the power of this Commission to remove difficulties is intended to address minor procedural issues and cannot be used to substantively alter or create new regulatory norms.

6.3. UTCL's interpretation of Section 86(1)(b) is overly broad. The commission's regulatory powers must be exercised in accordance with the principles of natural justice and existing statutory provisions. Creating new regulatory norms through individual Petitions disrupts the legislative process. The inherent powers are intended to address procedural gaps, not to substantively alter regulatory frameworks or create new policies.

6.4. The interests of industries and open access customers must be balanced within the regulatory framework established by the legislature. UTCL's proposal to bundle thermal and hybrid power requires legislative endorsement, not a regulatory directive through an individual Petition.

6.5. The appropriate process for any changes or new regulations involves public consultations, discussions with industry experts, and approval from the legislative bodies, ensuring that all implications, both short-term and long-term, are thoroughly evaluated and addressed. This ensures the regulations are comprehensive, equitable, and sustainable.

<u>Connectivity Issue:</u>

6.6. In spite of the existence of various policies and schemes referred to by UTCL, CERC in its CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022 permitted only co-located RE Hybrid. However, in the present Petition, the UTCL has raised an issue of grid connectivity to non-co-located plant. STU has already raised the issue, i.e., treatment of connectivity in case of non-co-located Energy Storage Systems as part of its comments/suggestions on the draft MERC (Multi-Year Tariff) Regulations, 2024, for the kind consideration of the Commission.

6.7. Furthermore, STU, in its reply, has raised the connectivity-related issue under various eventualities that could possibly exist; for this, the Commission should consider. STU has also proposed relevant clauses related to the present matter in a draft "Procedure for grant of connectivity of projects based on Renewable Energy sources to the InSTS to the Commission for further approval.

6.8. STU vide Letter dated 23.08.2024 has submitted the draft 'Procedure for grant of connectivity of projects based on Renewable Energy sources to the Intra-State Transmission System' for approval to the Commission.

6.9. Therefore, MSEDCL requested the Commission to dismiss the present Petition as being not maintainable in law qua the prayers as sought and further prayers address the issue only by adopting the proper procedure for promulgation of new regulations.

7. **At the E hearing through video conferencing held on 10 December 2024:**

7.1. The Advocate for UTCL reiterated its submission as made out in the Petition and Replies/Rejoinder and further stated that

(i) UTCL's case is to consider the higher capacity of Solar or Wind Power of the project to be considered while granting the grid connectivity for a Solar-Wind hybrid power plant.

(ii) However, MSETCL in its reply has not addressed the issue raised by UTCL.

(iii) MSETCL has wrongly assumed that the scope of the present petition related to Solar Thermal Project.

(iv) Hence, MSETCL's submission relating to Solar Thermal Project ought to be ignored.

7.2. The Advocate for MSEDCL stated that it has filed its submission in the matter and no further additions are required.

7.3. The Advocate for MSETCL stated that it has filed its submission in the matter and has no further additions to add.

7.4. The representative of MEDA stated that they have no submission on the matter.

7.5. The Commission directed the parties to file the submissions within 7 days, if any.

8. As per the Commission's directives at the hearing, UTCL filed a written submission on 4 February 2025, reiterating the submissions from the Petition and Reply, and therefore, for brevity, they are not reiterated here.

Commission's Analysis and Rulings

9. UTCL is a cement manufacturing company that seeks to establish captive hybrid projects (i.e., wind and solar) in the State of Maharashtra to meet the load of its manufacturing plants. Through the present Petition, UTCL has approached the Commission seeking appropriate practice directions to clarify or permit hybrid projects to seek connectivity for at least a higher quantum of the two (solar and wind) installed capacities as per the project's design and not based on the combined total (solar and wind) capacity. In support of its prayer, UTCL referred to the GoM RE Policy and other state RE Policies.

10. The submission of MSETCL/STU and MSEDCL is that grid connectivity is being granted as per the prevailing Rules and Regulations.

11. Also, MSETCL has prepared the Draft Procedure for the grant of connectivity of projects based on RE sources to the InSTS. The procedure is prepared in accordance with the relevant provisions of the TOA Regulations, 2016, the CERC-approved detailed grid connectivity procedure, and the GoM RE Energy Policy, 2020.

12. The Commission also notes that MSEDCL has also raised the issue of maintainability of the Petition stating that relief cannot be granted through this Petition, and that public consultation is required.

13. **Based on submissions of the Parties and issues raised, the following issues needs to be addressed in this matter:**

Issue I: Maintainability of the Petition;

Issue II: Provisions of the various Polices and their Applicability to this matter;

Issue III: To issue appropriate practice directions to clarify/declare, and/or permit hybrid projects to seek connectivity for at least a quantum higher of the two (solar and wind) installed capacity as per the design of the project and not based on the combined total (solar and wind) capacity.

The Commission has dealt with the above issues in the following part of the Order:

14. ***Issue I: Maintainability of the Petition:***

14.1. The contention of MSEDCL is that UTCL, through this Petition, is seeking to establish Regulations and policies, which is not the correct legal recourse. Regulation and policy formulation require the issuance of public notice, a hearing for all stakeholders, and related compliance measures. Hence, the prayers for policy formulation cannot be accomplished through individual Petitions. UTCL's contention qua the power of the Commission to remove difficulties is intended to address minor procedural issues. It cannot be used to alter or create new regulatory norms in a substantive manner.

14.2. On the other hand, the argument of UTCL is that it is not seeking any amendment to the Regulations. The prevailing Regulations are silent on the issue at hand, and the Commission has the power to provide necessary clarification

14.3. In this regard, it is imperative to note the Prayers of UTCL in the instant case as follows:

> *"(a) Hold, direct (through practice directions or otherwise), clarify / declare and/or permit hybrid projects to seek connectivity for at least a quantum higher of the two (solar and wind) installed capacity as per the design of the project and not basis the combined total (solar and wind) capacity.*
>
> *(b) Pass appropriate directions to the Respondents to take appropriate steps to forthwith implement direction/ clarification sought by the Petitioner in terms of Prayer (a) above;*

14.4. From the above prayer, it is clear that UTCL is not seeking any amendment in the existing Regulations through an Order in the present Petition. UTCL is seeking practice direction/clarification or permit hybrid projects to seek connectivity for at least a quantum higher of the two (solar and wind) installed capacity instead of the combined total (solar and wind) capacity. *Furthermore, amendments to the existing Regulations and the issuance of new Regulations must* follow a public consultation process, considering the suggestions and comments of stakeholders before finalising the amended Regulations or new Regulations.

14.5. That being the case, the Commission does not find any merit in the objection raised by MSEDCL regarding the maintainability of the present Petition.

15. ***Issue II: Provisions of the various Policies and their Applicability to this matter:***

15.1. UTCL relies on the following policy documents for seeking appropriate practice directions to clarify/permit hybrid projects to seek connectivity for at least a quantum higher of the two (solar and wind) installed capacity as per the design of the project, and not based on the combined total (solar and wind) capacity.:

A) MNRE National Wind-Solar Hybrid Policy 2018 dated 14.5.2018.

B) GOM Unconventional Energy Generation Policy-2020 dated 31.12.2020

C) CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022) dated 7.6.2022.

D) Gujarat Renewable Policy, 2023:

E) Rajasthan Renewable Policy 2023:

F) Andhra Pradesh Wind-Solar Hybrid Power Policy, 2018

15.2. Considering the aforementioned, it is necessary to examine the policies' provisions in terms of their objectives, basis, and applicability in the present case in order to address the issues raised by UTCL.

A) MNRE National Wind-Solar Hybrid Policy 2018 dated 14.5.2018.

15.3. The broad provisions of the MNRE National Wind-Solar Hybrid Policy 2018 in respect of the Grid connectivity are as follows:

" 1. INTRODUCTI ON

1.2 Solar and wind power being variable in nature pose certain challenges on grid security and stability. Studies revealed that in India solar and wind resources are complementary to each other and hybridization of these two technologies would help in minimizing the variability apart from optimally utilizing the infrastructure including land and transmission system.

1.3 Superimposition of wind and solar resource maps shows that there are large areas where both wind and solar have high to moderate potential.

1.4 The existing wind farms have scope of adding solar PV capacity and similarly there may be wind potential in the vicinity of existing solar PV plant.

1.5 Suitable policy interventions are therefore, required not only for new wind-solar hybrid plants but also for encouraging hybridization of existing wind and solar plants.

1.6 To smoothen the wind solar hybrid power further, appropriate capacity of battery storage may also be added to the project.

2. AIMS AND OBJECTIVE

2.1 The main objective of the Policy is to provide a framework for promotion of large grid connected wind-solar PV hybrid system for optimal and efficient utilization of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability.------

4.3 The second important aspect would be related to ***the sizing – which would depend on the resource characteristics. In order to achieve the benefits of hybrid plant in terms of optimal and efficient utilization of transmission infrastructure and better grid stability by reducing the variability in renewable power generation, in the locations where the wind power density is quite good, the size of the solar PVs capacity to be added as the solar-hybrid component could be relatively smaller. On the other hand, in case of the sites where the wind power density is relatively lower or moderate, the component of the solar PV capacity could be relatively on a higher sid****e.*

However, a wind-solar plant will be recognized as hybrid plant if the rated power capacity of one resource is at least 25% of the rated power capacity of other resource.

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6. REGULATORY REQUIREMENTS

The Central Electricity Authority and CERC shall formulate necessary standards and regulations including metering methodology and standards, forecasting and scheduling regulations, REC mechanism, grant of connectivity and sharing of transmission lines, etc. for wind-solar hybrid systems.---"

15.4. The perusal of the MNRE National Wind-Solar Hybrid Policy 2018 shows that the objective of the Policy is to provide a framework for the promotion of large grid-connected wind-solar PV hybrid systems for optimal and efficient utilization of transmission infrastructure and land. Furthermore, implementing the Policy requires the establishment of necessary standards and regulations. Additionally, the sizing of the plants needs to be decided.

15.5. The Commission notes that the main prayer of UTCL is to consider connectivity for at least a quantum higher than the two (solar and wind) installed capacities. However, it is worth noting that the said Policy never addresses the consideration of connectivity for at least a quantum higher than the two (solar and wind) installed capacities. On the contrary, the Policy provides that to enhance the wind-solar hybrid power further, an appropriate capacity of battery storage may also be added to the project.

B) GOM Unconventional Energy Generation Policy-2020 dated 31.12.2020

15.6. The objective of the GOM Policy is to establish a framework by the State Government to supplement the requirements of the Unconventional Energy Policy of the Central Government. Projects will be established in accordance with the provisions of the EA 20023 and the rules and regulations made under it, along with any improvements made from time to time.

15.7. The Policy also states that 'Priority will be given to the development of hybrid projects by combining wind and/or solar projects with other conventional/non-conventional energy sources and incorporating storage capacity as required. Such projects will be categorised according to their source**.**

15.8. Upon examining the GOM Policy, the Commission notes that the UTCL is relying on it, which does not provide any specific conditions for grid connectivity for Wind-Solar Hybrid Projects as claimed by UTCL.

C) CERC (Connectivity and General Network Access to the Inter-State Transmission System) Regulations, 2022, dated 7 June 2022.

15.9. Regarding the Connectivity, the CERC Regulations provide as follows:

"3. Application for Grant of Connectivity and GNA

3.1. Applications for grant of Connectivity or grant of GNA, as the case may be, shall be made online to the Nodal Agency and shall be digitally signed by the Applicant.

3.2. Each application for grant of Connectivity shall be accompanied by an application fee of Rs.5 lakh along with applicable taxes.

3.3. Each application for grant of GNA shall be accompanied by an application fee of Rs.5 lakh along with applicable taxes.------

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*5. **Application for Grant of Connectivity***

5.1 An Applicant, which is a generating station including REGS, shall apply for grant of Connectivity to the Nodal Agency for the quantum equal to the installed capacity of the generating station:

Provided that if such an Applicant already has Connectivity to intra State transmission system for part of its installed capacity, it may apply for Connectivity to the ISTS for a quantum not exceeding the balance of the installed capacity;

***Provided further that if such an Applicant is a Renewable Hybrid Generating Station or REGS with storage, it may apply for grant of Connectivity for a quantum less than or equal to the installed capacity**."*

15.10. The perusal of the above Regulations shows that the application has to be made to the nodal agency. Furthermore, for each application, a fee has to be paid. It also stipulates that only an Applicant, Renewable Hybrid Generating Station, or REGS with storage may apply for a grant of Connectivity for a quantum less than or equal to the installed capacity. Hence, it is a conditional provision and is similar to the prayer of the Petitioner.

15.11. Furthermore, these Regulations do not consider connectivity for at least a greater quantum of the two (solar and wind) installed capacities as claimed by UTCL.

D) Gujarat Renewable Policy, 2023:

15.12. The objective of the Gujarat Renewable Policy, 2023 is to harness the renewable energy potential available in the state. The policy also stipulates that the capacity of a single resource (solar or wind) in the hybrid projects shall comply with the National Wind-Solar Hybrid Policy notified by MNRE via letter no. F. No. 238/78/2017-Wind dated 14 May 2018 for Wind Solar Hybrid Projects and its amendments from time to time.

15.13. Further it provides that for Type A category of projects (conversion of existing or under construction standalone wind or solar power plants into hybrid projects) the total power injection (combined wind and solar) into the grid after hybridization shall not be more than the transmission capacity or grid connectivity allowed or sanctioned by GETCO / STU for this purpose. In the event that addition or augmentation of the existing evacuation system is required as per the system study undertaken by GETCO / STU due to the addition of wind or solar capacity, RE developers shall undertake such addition or augmentation in the system up to the receiving end substation of GETCO / STU at their own cost. However, the primary focus of this policy is to optimize the utilization of existing transmission infrastructure, technologies and design approaches towards minimum augmentation are encouraged.

15.14. Furter, the Policy Provides that

"Clause 15.3 In case of Hybrid projects set up for Captive use or third party sale, the RE ***Developer/ consumer shall be required to seek sanction / allocation of transmission capacity at least for the installed capacity of the wind or solar capacity****, whichever is higher. The transmission losses shall be applicable on energy feed-in basis as applicable to any other wind or solar project. However, RE developer / consumer may seek higher sanction / allocation of transmission capacity if required."*

20.1 Grid stability and security are of prime importance. Since the infirm nature of renewable energy may endanger grid security, adequate protection measures are necessary.

15.15. The above provisions are only applicable to the Hybrid projects set up for captive use or third-party sale. Additionally, the policy mentions grid security and its importance, which needs to be taken into account. Furthermore, this policy is silent regarding its applicability to co-located and non-co-located plants.

15.16. The policy only applies to Gujrat State based on its requirement and the availability of RE power and the transmission network. Therefore, it cannot be applied to UTCL in its current form without any study of Maharashtra transmission system.

E) Rajasthan Renewable Policy 2023:

15.17. The Policy provides as follows:

"Clause 13.1- The State will promote setting up of Wind-Solar Hybrid Power Projects for optimal and efficient utilization of infrastructure and land, and to achieve better grid stability, under the following categories:

a) Sale of Power to DISCOMs at tariff discovered through transparent bidding process.

b) Captive Use and Sale to Third Party within and outside state through open access/ Power Exchange.

c) The Maximum permissible capacity of individual Hybrid plant for captive use within the State will be limited to "Contract demand" of the consumer as per RERC Regulations. The Generating plant capacity for 3rd Party sale can be any capacity, however the consumer of the State will be allowed to take power from such plant up to the contract demand only

Clause 13.2 - The sizing of the wind/solar capacity would be assessed by the developer on the basis of local resource characteristics. However, a wind-solar power plant will be recognized as hybrid plant if the rated power capacity of one resource (wind/ solar) is at least 25% of the rated power capacity of other resource (solar/ wind)."

15.18. The Policy also mentions that RERC will undertake studies in Renewable Energy for further policy interventions, such as estimating the impact of promoting solar rooftop capacity addition

on the grid and the state power utilities, as well as assessing various implementation models for setting up EV charging stations etc.

15.19. Thus, the aforementioned Policy does not take into account connectivity for at least a quantum higher than the two (solar and wind) installed capacities, as claimed by UTCL.

F) Andhra Pradesh Wind-Solar Hybrid Power Policy, 2018

15.20. The Policy states that the solar and wind power potential in AP is concentrated in the Rayalaseema belt, and studies reveal that their generation profiles are complementary to each other. A hybrid wind-solar project can help in the optimal utilization of transmission infrastructure. Furthermore, under the AP Wind Power Policy-2015, it is proposed to promote solar and wind hybrid power projects to enable better utilization of common infrastructure and related facilities. The existing wind farms may have the capacity to add solar PV, and similarly, there may be wind potential in the vicinity of existing solar PV plants. The Government of AP is keen to encourage wind-solar hybrid projects to harness the combined potential of these clean energy sources optimally and contribute to the grid stability.

15.21. Further provisions of the Policy referred by UTCL are as follows:

"Section 4: Under the category of wind-solar hybrid power plants, Wind turbine generators and Solar PV systems will be configured to operate at the same point of grid connection. There can be different approaches towards integrating wind and solar depending upon the size of each of the source integrated and the technology type.

In Case of Wind -Solar Hybrid Project(s), both Wind and Solar project(s) should ***connect to grid in the same region at 132 kV and above either through individual or common pooling station. Such project(s) must give the common scheduling and forecasting for the Wind and Solar Project(s) and further at any point of time should not exceed the RE capacity allocated jointly between Wind and Solar Project****(s),*

Section 5- a) Wind-Solar Hybrid- AC integration

In this configuration, the AC output of both the wind and solar system is integrated either at LT side or at HT side. In the later case, both systems use separate step up transformer and HT output of both the systems is connected to common AC Busbar or at interconnection point. Suitable control equipment is deployed for controlling the power output of hybrid system.

15.22. Furthermore, the Andhra Pradesh Wind-Solar Hybrid Policy does not account for connectivity for at least a greater quantum of the two (solar and wind) installed capacities, as claimed by UTCL.

15.23. Upon reviewing the aforementioned regulations and various state RE policies, it is clear that the design of the Hybrid Project, based on site conditions, must be finalized prior to granting transmission connectivity. Furthermore, grid connectivity will be approved in accordance with the safe operation, integrity, and reliability of the grid, as outlined in the CEA (Technical Standards for Connectivity to the Grid), Regulations, 2007, and the MERC State Grid Code. Therefore, it is the applicant's responsibility to plan, design, construct, ensure reliability, provide protection, and maintain the safe operation of their own equipment, in line with the

regulations governing construction, operation, maintenance, connectivity, and other statutory requirements provisions.

15.24. In view of the above, the Commission does not find any merit in UTCL's submission that other State Policies take into account connectivity for at least a greater quantum of the two (solar and wind) installed capacity.

16. ***Issue III: To issue appropriate practice directions to clarify/declare and/or permit hybrid projects to seek connectivity for at least a quantum higher of the two (solar and wind) installed capacity as per the design of the project, and not based on the combined total (solar and wind) capacity***

16.1. The Commission notes that the prayer of UTCL to issue appropriate practice directions to clarify, declare, or permit hybrid projects to seek connectivity for at least a higher quantum of the two (solar and wind) installed capacities, rather than the combined total (solar and wind) capacity, is related to the transmission line capacity, design of the Wind Solar Hybrid Project, generation patterns of wind and solar, geographical area, and existing loading of the lines, etc. Furthermore, UTCL is seeking it for both co-located and non-co-located project plants.

16.2. The argument of UTCL is that granting connectivity for the Wind Solar Hybrid Project at a quantum higher than two will be helpful for the following counts:

(i) For the same infrastructure in terms of MW , more energy can be injected into the grid as wind and solar will inject at the same interconnection in the STU grid.

(ii) It leads to better utilisation of the Transmission Infrastructure.

(iii) More Transmission charges will be received by STU as more energy in terms of Mus will be injected at the same point of grid connectivity.

(iv) Enabling more MW of installed capacity for the same transmission infrastructure.

16.3. It is worth noting that UTCL, before approaching the Commission through this Petition, has approached the MSETCL and MEDA with the same issues. Additionally, discussions have taken place between them. However, the issues remain unresolved; consequently, UTCL has approached the Commission. Furthermore, UTCL's claims are not supported by studies, facts, past data, etc..

16.4. Further, the Unconventional Energy Generation Policy 2020, issued by GoM on 31 December 2020, states that until the objectives of this policy are met, priority will be given to the development of hybrid projects by combining wind and/or solar projects with other conventional or non-conventional energy sources and incorporating storage capacity as required.

16.5. It is imperative to note that STU ,as a compliance with the Order dated 19 September 2019 in Case No. 235 of 2019, has delayed the formulation of the RE Grid Connectivity procedure. Therefore, the Commission, vide letter dated 17 October 2024, has directed STU to formulate a revised RE Grid connectivity plan after consulting with stakeholders. The relevant para. of the letter dated 17 October 2024 are as under:

"This is with reference to the above captioned subject the Commission vide Order dated 19 September 2019 in Case No. 235 of 2019 directed STU to formulate the revised procedure grant of Grid connectivity to projects based on Renewable Energy Sources to Intra- State Transmission System by following a transparent process after considering the comments from the stakeholders. ***However, while submitting the revised procedure to the Commission, it is observed that STU has not followed the transparent process and has not sought comments from stakeholders. It is also observed that STU has submitted the revised procedure with a delay and after a lapse of more than five years.***

In view of the above, I am directed to inform you that Maharashtra State Transmission Utility (STU) to formulate the Revised Procedure for grant of Grid connectivity to projects based on Renewable Energy Sources to Intra State Transmission System by following a transparent process after considering the comments from the stakeholders and after considering the relevant provisions of MERC TOA Regulations 2016 and its Amendments , CERC's approved detailed grid connectivity procedure, Government of Maharashtra's Renewable Energy Policy and other relevant Commission's Regulations/orders, within one months.

After considering comments from Stakeholders, STU may publish the Revised Procedure on its website and submit it to the Commission, within one month, thereafter.

***The Commission cautioned STU for the delay in submitting the procedure and to exercise caution in the future while submitting procedures to the Commission*.**"

16.6. Thereafter, STU formulated the Revised RE Grid Connectivity Procedure, dated 7 January 2025, after consulting with stakeholders. The relevant provisions related to the Hybrid RE project connectivity to the STU's revised procedure are as follows:

"3. Eligibility

3.1 A Renewable Energy Power project having a capacity of 5 MW or more with or without storage based on any of the following:

Category A - Renewable Energy Power Projects (Excluding those projects covered under Category B & Category C below):

a) Solar PV or Solar Thermal based on technologies approved by MNRE;

b) Wind Power Project commissioned using new or re-powered wind turbine generators;

c) Hybrid Renewable Energy project based on RE technologies such as Wind-Solar Hybrid, Solar-Biomass Hybrid, Solar-Co-Generation Hybrid, Solar Thermal Hybrid, and any other combination of RE technologies approved to be considered under this procedure;

Note:

'Hybrid Renewable Energy Project' means a Renewable Energy Project that uses a combination of Renewable Energy technologies approved by MNRE for

electricity generation, configured to operate at the same point of grid connection:

Provided that the rated capacity of one resource is at least 25% of the rated capacity of other resource;

d) *Small Hydro Power Project commissioned and located at a site approved by the State Nodal Agency/State Government using new plant and machinery and with installed capacity of 25 MW or less at a single location;*

e) *Biomass Gasifier, Biogas-based and Bagasse Project based on technologies approved by MNRE and approved to be considered under this procedure;*

f) *Waste to Energy Project based on technologies approved by MNRE;*

g) *Renewable Energy Power Projects set up under the "Policy for development of Pumped Storage Projects (PSPs), PSPs cum LIS and co-located PSP-Solar/Other and Renewable Energy Hybrid Projects through Public-Private Partnership" issued by the Government of Maharashtra;*

h) *Any other Renewable Energy Power Projects approved by the Competent Authority.*

***Category B - Renewable Energy Power Projects set up under "Mukhyamantri Saur Krushi Vahini Yojana 2.0" issued by the Government of Maharashtra, including subsequent amendment/initiatives**:*

a) *Solar PV based on technologies approved by MNRE;*

b) *Any other renewable energy projects approved by the Competent Authority.*

Category C - Renewable Energy power projects set up under "Maharashtra Green Hydrogen Policy -2023" issued by the Government of Maharashtra:

a) *For the co-located RE Generation Plant and Green Hydrogen Production Plant;*

b) *For the co-located RE Generation & Green Hydrogen Derivative Production Plant;*

c) *Any other renewable energy projects approved by the Competent Authority.*

3.2 Applicants covered under Regulation 5 of the MERC TOA Regulations and relevant Orders issued by the MERC for projects based on Renewable Energy Sources, as applicable from time to time.

3.3 This procedure shall be applicable to the concerned agencies, such as Maharashtra State Electricity Transmission Company Ltd. (MSETCL), Transmission Licensees, Distribution Licensees, Maharashtra State Load Despatch Centre, Solar Park Developer, Wind Park Developer, Renewable Power Park Developer, all types of RE Power Project Developer etc.

……..

5.1 An Applicant, which is Renewable Energy Generating Station/ RE Developer shall apply for grant of Grid Connectivity to the InSTS to the STU for the quantum equal to the installed capacity of the generating station:

Provided that if such an Applicant is a Hybrid Renewable Energy Project or Hybrid Renewable Energy Project with storage, it may apply for grant of Grid Connectivity at least for the quantum equal to the installed capacity of the wind or solar capacity, whichever is higher or upto the total installed capacity*.*

……

5.6 The Applicant implementing the Hybrid Renewable Energy Project with storage including the Round the Clock Hybrid Project with storage, shall be eligible to apply for the Grid Connectivity at one location only in view of the Eligibility criteria for such Hybrid Renewable Energy Project as specified in the Regulations of the Commission:

Provided that the Applicants implementing the Hybrid Renewable Energy Project(s) with storage/Renewable Hybrid Generating Station(s) including Round-The-Clock (RTC) Hybrid Project with storage, shall be eligible to apply for separate Grid Connectivity for each location based on the same LOA or PPA or PSA, for the capacity of the project not exceeding the quantum of power for which LOA has been awarded or PPA or PSA has been signed, as and when such Hybrid Renewable Energy Project are allowed at different location through relevant Regulations and/or Orders of the MERC. For this purpose, the locations and capacity at each such location, duly certified by the Renewable Energy Implementing Agency notified by the Government or the distribution licensee, as the case may be, shall be submitted along with the Grid Connectivity applications.

[Emphasis Added]

16.7. From the above STU's Revised procedure, the Commission notes that:

(a) Renewable Energy Generating Station/ RE Developer shall apply for grant of Grid Connectivity to the InSTS to the STU for the quantum equal to the installed capacity of the generating station.

(b) Hybrid Renewable Energy Project or Hybrid Renewable Energy Project with storage, may apply for grant of Grid Connectivity at least for the quantum equal to the installed capacity of the wind or solar capacity, whichever is higher or upto the total installed capacity.

(c) The Applicant implementing the Hybrid Renewable Energy Project with storage including the Round the Clock Hybrid Project with storage, shall be eligible to apply for the Grid Connectivity at one location only.

16.8. The Commission notes that the above STU's Revised Procedure provides that a Hybrid Renewable Energy Project or Hybrid Renewable Energy Project with storage may apply for a grant of Grid Connectivity for at least the quantum equal to the installed capacity of either the wind or solar capacity, whichever is higher, or up to the total installed capacity at one location only.

16.9. Considering the foregoing, the Commission believes that the above STU's Revised Procedure addresses the connectivity issues raised by UTCL, namely the hybrid projects' connectivity for at least a quantum higher than the two (solar and wind) installed capacities according to the

project design, rather than based on the combined total (solar and wind) capacity at one location, i.e., a co-located plant only.

16.10. Regarding Hybrid RE Grid connectivity at multiple locations/non-co-locations, the Commission notes that this issue was raised by one of the Stakeholders before STU during the public consultation of the Draft STU's Revised Procedure. (The comments of Stakeholders and STU's remarks on the Draft STU Revised Procedure of Grid Connectivity are available on the MSETCL website at https://www.mahatransco.in/information/details/maharashtra_stu.) On this issue, STU's comments on the Draft STU Revised Procedure for connectivity are as follows:

> *"As per Hon'ble MERC Regulations,* ***Hybrid RE projects configured to operate at the same point of grid connection are allowed****.* ***Inclusion of 'non-co-located RE Generation Plant and Green Hydrogen Production Plant' and 'non-co-located RE Generation & Green Hydrogen Derivative Production Plant' in RE Procedure is subject to revision in the Regulations of the Hon'ble Commission.".***

16.11. The Commission further notes that while finalising the Revised RE Grid connectivity procedure, the issue of Hybrid RE Grid connectivity at multiple locations/non-co-located locations was raised by one of the stakeholders during the public consultation of the Draft Procedure. However, STU has only commented that the inclusion of 'non-co-located RE Generation Plant and Green Hydrogen Production Plant' and 'non-co-located RE Generation & Green Hydrogen Derivative Production Plant' in the RE Procedure is subject to revision in the Commission's Regulations, and it has not studied the issue in detail. This comment from STU is vague and lacks merit. STU, as a nodal agency, should have elaborated on the issues involved in non-co-location plants.

16.12. It is also imperative to note that the Ministry of Power (MoP) issued the Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Solar Hybrid Projects on 21 August 2023. The relevant provisions of the MoP Guidelines are as follows:

> *"1.1 It has been established that* ***combining different sources of renewable energy reduces their individual variability and gives better output. It also results in more efficient utilization of transmission infrastructure and land resource****.* ***It is common knowledge that wind is better during morning and evening or night, complementing solar energy which peaks during daytime.*** *Hybrid projects backed by storage facility can further enhance the quality of RE power.*
>
> *1.2. MNRE issued Wind-Solar Hybrid Policy on 14.05.2018 (and issued amendment on 13.08.2018) with the objective to provide a framework for promotion of large grid connected wind-solar PV hybrid system for optimal and efficient utilization of transmission infrastructure and land, reducing the variability in renewable power generation and achieving better grid stability.*
>
> *1.3 Section 63 of Electricity Act, 2003 promotes competition in the electricity sector and provides for adoption of the tariff by the Appropriate Commission if the same has been determined through transparent process of bidding in accordance with the guidelines*

issued by the Central Government. The National Tariff Policy notified on 28 January 2016 also encourages the procurement of renewable power through competitive bidding to discover market-based tariff.

……

3.APPLICABILITY OF GUIDELINES

3.1. These Guidelines are being issued under the provisions of Section 63 of the Electricity Act, 2003 for long term procurement of electricity through competitive bidding process, ***by Procurer(s), from Hybrid Power Projects having (a) bid capacity of 10 MW and above for projects connected to intra-state transmission system****; and (b) bid capacity of 50 MW and above for projects connected to inter-state transmission system, subject to the condition that the rated power capacity of one resource (wind or solar) shall be at least 33% of the total contracted capacity.*

3.2. The solar and wind projects of the hybrid project may be located at same or different locations.

16.13. The above guidelines emphasise that combining different sources of renewable energy reduces their individual variability and provides better output. Furthermore, it states that the solar and wind components of the hybrid project may be located together or at separate locations.

16.14. In addition, the Central Electricity Authority (**CEA**) has prepared/notified the (Technical Standards for Connectivity to the Grid) Regulations, 2007, as amended from time to time, on the grid connectivity aspects, and it has played a significant role in these issues.

16.15. Furthermore, CERC has proposed Draft Regulations (Connectivity and General Network Access to the inter-State Transmission System) (Fourth Amendment) Regulations, 2025 (CERC Draft Regulations on connectivity and GNA Regulations 2025) on 3 March 2025, wherein it proposed the concept of Solar Hours and Non-Solar Hours for Renewable Hybrid Energy System (RHGS). The relevant para. of CERC Draft Regulations on connectivity and the GNA Regulations 2025 are as follows:

" 2. Amendment to Regulation 2.1 of the Principal Regulations:

2.1. A new Clause (q-i) shall be inserted after Clause (q) of Regulation 2.1 of the Principal Regulations as under:

"(q-i)" Entities with Restricted Access" ***means REGS or ESS whose injection scheduling rights are restricted for solar hours or non-solar hours*** *in accordance with Regulation 5.11 and Annexure-IV of these regulations;"*

2.2. A new Clause (ai-i) shall be inserted after Clause (ai) of Regulation 2.1 of the Principal Regulations as under:

"(ai-i)" Restricted Access" means restricted scheduling rights for solar hours or non-solar hours of the day for entities covered under Regulation 5.11 of these Regulations*;"*

2.3. Following new Clauses, namely, Clause (ak-i), Clause (ak-ii) shall be added after Clause (ak) of Regulation 2.1 of the Principal Regulations as under: "

(ak-i) "Solar hours" means the time blocks of the day as declared by NLDC on each Saturday for the subsequent week starting from Monday to Sunday every week for each State based on anticipated solar insolation;

(ak-ii) "Non-Solar hours" *means the time blocks other than 'Solar hours' of the same day;*

……..

5. New Regulation 5.11

5.1. A new Regulation 5.11 shall be added after Regulation 5.10 of the Principal Regulations, as under:

"5.11 Entities with Restricted Access

(a) An REGS (with or without ESS) based on Wind source or ESS may seek Connectivity with restricted access (non-solar hours) at a terminal bay of an ISTS substation*:*

(i) Through a separate dedicated transmission system, or

(ii) Which is already allocated to another REGS or Renewable Power Park, with restricted access (solar hours),

Example: An REGS (Wind - 400 MW, ESS - 200 MW) may seek Connectivity of 600 MW with restricted access rights, where injection scheduling rights during solar hours shall be Nil and injection scheduling rights during non-solar hours shall be 600 MW

(b) The In principle or final grant of Connectivity intimated to an REGS (with or without ESS) based on solar source or an RHGS with a combination of solar source with another source including ESS (including cases where GNA is effective) shall be converted as an entity with restricted access (corresponding to non-solar capacity during non-solar hours) within a period of one week after the expiry of three months from date of effectiveness of this Regulation:

Examples:

(i) If an REGS based on a Solar source has been granted Connectivity of 1000 MW, such entity shall have restricted injection scheduling rights for 1000 MW in Solar hours and shall have no injection scheduling rights during NonSolar hours. However, it may draw power during non-solar hours.

(ii) If an RHGS (Solar - 700 MW, Wind - 400 MW, ESS – 200 MW) having Connectivity of 1000 MW shall have restricted access rights, where injection scheduling rights during solar hours shall be for 1000 MW and injection scheduling rights during non-solar hours shall be 600MW (400 MW Wind + 200 MW ESS).

(iii) If an RHGS (Solar - 600 MW, Wind - 500 MW, ESS - 160 MW) has Connectivity of 700 MW, if converted under restricted access, injection scheduling rights during non-solar hours shall be for 660 MW (500+160 MW) leaving 40 MW (700-(500+160)) for conversion under restricted access and the same shall not be considered for such conversion since it is less than 50 MW.

(c) REGS (with or without ESS) based on a solar source or an RHGS with a combination of solar source with another source, including ESS seeking Connectivity under Regulation 4.1 of these regulations, shall be considered for grant of Connectivity as an entity with restricted access:

16.16. The CERC, in its Draft Regulations on connectivity and the GNA Regulations 2025, has proposed the concept of restricted access for Solar and Non-Solar Hours, which is crucial in deciding the present issue of Hybrid grid connectivity for Renewable Energy.

16.17. It is a fact that the Power sector, as well as Transmission, is dynamic and continues to change based on various factors such as Generation Potential, Load Density, Urbanization of Area, Geographical Location of Generation Plants and Transmission Lines, New Projects, Brownfield projects, potential of RE, etc. Furthermore, co-located generating plants and non-co-located plants have different technical requirements. Hence, the Commission notes that before considering the issue of Hybrid RE grid connectivity at multiple locations/non-co-locations, as claimed by the Petitioner, a detailed feasibility /preparedness study of the issues of multi-location/non-co-location connectivity for RE Hybrid needs to be carried out.

16.18. The implementation of Hybrid RE connectivity at multiple locations or non-co-locations at the state level could be explored. However, as highlighted by MSETCL, the existing regulations do not support such integrated operations between RE generators and non-RE generators. There is a substantial difference in the treatment of Hybrid RE connectivity at multiple locations or non-co-locations regarding scheduling, Open Access permissions, Open Access billing, banking, energy billing, DSM accounting, and MoD operations. In the current regulatory framework, there is no concept of Hybrid grid connectivity at multiple locations or non-co-locations. To accommodate such power, major regulatory changes would be required in Open Access Regulations, DSM Regulations, Grid Code Regulations, and RE Tariff Regulations etc.

16.19. The Commission notes that under the State Grid Code Regulations, the Grid Co-ordination Committee (GCC) has been constituted, which, inter alia, has been entrusted with the function of proposing amendments to these Regulations. Grid Code Regulations specify the following functions of the GCC:

i. Facilitating the implementation of these Regulations and procedures developed under these Regulations;

ii. Assessing and recommending remedial measures for issues that arise during the implementation of these Regulations and procedures developed under these Regulations;

Provided that, the GCC shall formulate suitable procedures, code of operation, manual and guidelines or revise such procedures/guidelines/manuals/code under these

Regulations by undertaking stakeholder consultation and shall submit the same to the Commission.

iii. Review of the MEGC, in accordance with the provisions of these Regulations, and propose amendments, if any, to the Commission;

iv. Other matters as may be directed by the Commission from time to time.

16.20. Furthermore, GCC has a broader representation of key stakeholders in the State, including generating companies, Transmission Licensees, Distribution Licensees, STU, and MSLDC.

16.21. In view of the above, the Commission deems it appropriate to direct GCC to undertake a detailed study to explore the implementation of Renewable Energy Hybrid Grid connectivity at multiple locations and non-co-locations in the State. GCC shall undertake deliberations with the stakeholders in the State such as Generating Companies, Distribution Licensees, RE generators, STU, MEDA etc. on various aspects such as metering, connectivity, scheduling, energy accounting and settlement, DSM accounting, transmission and wheeling charges etc. and submit a draft framework to the Commission covering all relevant aspects including the implementation aspects. GCC shall submit the said draft framework to the Commission within six months of this Order, which may be considered by the Commission for initiating the amendments to the existing Regulations or for notifying new Regulations if required.

17. **Hence, the following Order.**

ORDER

1. **The Petition in Case No. 143 of 2024 is partly allowed.**
2. **Grid Co-ordination Committee is directed to undertake a detailed study for exploring the implementation of Renewable Energy Hybrid Grid connectivity at multiple locations/ non-co-locations in the State.**
3. **GCC shall submit the said draft framework to the Commission within six months of this Order, which may be considered by the Commission for initiating amendments to the existing Regulations or for notifying new Regulations, if required.**

Sd/-	Sd/-	Sd/-
(Surendra J. Biyani)	**(Anand M. Limaye)**	**(Sanjay Kumar)**
Member	**Member**	**Chairperson**

(Dr. Rajendra G. Ambekar)
Secretary