



**TARIFF FRAMEWORK FOR PROCUREMENT OF POWER BY DISTRIBUTION  
LICENSEES AND OTHERS FROM WIND-SOLAR HYBRID PROJECTS  
INCLUDING STORAGE, IF ANY, AND OTHER COMMERCIAL ISSUES FOR THE  
STATE OF GUJARAT**



**Gujarat Electricity Regulatory Commission**

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## Abbreviations

|         |   |
|---------|---|
| %       | <b>Percentage</b>                               |
| ABT     | Availability-Based Tariff                       |
| AC      | Alternating Current                             |
| ALMM    | Approved List of Models and Manufacturers       |
| APPC    | Average Pooled Purchase Cost                    |
| CBG     | Competitive Bidding Guidelines                  |
| CDM     | Clean Development Mechanism                     |
| CEA     | Central Electricity Authority                   |
| CER     | Certified Emission Reduction                    |
| CERC    | Central Electricity Regulatory Commission       |
| COD     | Commercial Operation Date                       |
| CPSU    | Central Public Sector Undertaking               |
| CUF     | Capacity Utilization Factor                     |
| DISCOMs | Distribution Companies                          |
| DC      | Direct Current                                  |
| FY      | Financial Year                                  |
| GEDA    | Gujarat Energy Development Agency               |
| GERC    | Gujarat Electricity Regulatory Commission       |
| GETCO   | Gujarat Energy Transmission Corporation Limited |
| GoG     | Government of Gujarat                           |
| GoI     | Government of India                             |
| GUVNL   | Gujarat Urja Vikas Nigam Limited                |
| HPD     | Hybrid Project Developer                        |
| HPG     | Hybrid Project Generator                        |
| HPP     | Hybrid Power Project                            |
| ISTS    | Inter-State Transmission System                 |
| KV      | Kilo Volt                                       |
| kW      | Kilo Watt                                       |
| kWh     | Kilo Watt hours                                 |
| kVARh   | Kilo Volt Ampere Reactive Hour                  |
| M       | Meter   |
| m/s     | meter per second                                |
| MNRE    | Ministry of New and Renewable Energy            |
| MW      | Mega Watt                                       |
| MWh     | Mega Watt hour                                  |



|      |   |
|------|---|
| NEP  | National Electricity Policy             |
| NTP  | National Tariff Policy                  |
| O&M  | Operation and Maintenance               |
| PPA  | Power Purchase Agreement                |
| PSA  | Power Supply Agreement                  |
| PV   | Photovoltaic                            |
| R&D  | Research & Development                  |
| RE   | Renewable Energy                        |
| REC  | Renewable Energy Certificate            |
| RfS  | Request for Selection                   |
| RPO  | Renewable Purchase Obligation           |
| SECI | Solar Energy Corporation of India       |
| SERC | State Electricity Regulatory Commission |
| SLDC | State Load Despatch Centre              |
| T&D  | Transmission & Distribution             |
| V    | Volt                                    |
| WPD  | Wind Power Density                      |
| WTG  | Wind Turbine Generator                  |



**Order No. 01 of 2024**

**IN THE MATTER OF:**

**TARIFF FRAMEWORK FOR PROCUREMENT OF POWER BY DISTRIBUTION LICENSEES  
AND OTHERS FROM WIND-SOLAR HYBRID ENERGY PROJECTS INCLUDING STORAGE, IF  
ANY, AND OTHER COMMERCIAL ISSUES FOR THE STATE OF GUJARAT**

**Date of the Order: 22/02/2024**

**CORAM:**

**Anil Mukim, Chairman  
Mehul M. Gandhi, Member  
S. R. Pandey, Member**





## 1. INTRODUCTION

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### 1.1 Background

In exercise of the powers conferred under Sections 3 (1), 61 (h), 62 (1) (a) and 86 (1) (b) & (e) of the Electricity Act, 2003, National Electricity Policy, 2005, and Tariff Policy, 2016 and all other powers enabling it in this behalf, the Gujarat Electricity Regulatory Commission (GERC or Commission) presents this Order for 'Tariff Framework for Procurement of Power by Distribution Licensees and Others from Wind-Solar Hybrid Power Projects including Storage, if any, for the State of Gujarat'. The provisions of this Order shall be applicable for the Wind-Solar Hybrid Power Projects including Storage, if any, commissioned post 19<sup>th</sup> June 2023 upto the control period specified in this Order.

The Commission previously had issued Order No. 04 of 2021 dated 03<sup>rd</sup> April 2021 for 'Tariff Framework for Procurement of Power by Distribution Licensees and Others from Wind-Solar Hybrid Energy Projects and Other Commercial issues for the State of Gujarat'. The control period of the said Order was up to 31<sup>st</sup> March 2023. The Commission vide Order dated 17<sup>th</sup> March 2023 in Petition No. 2128 of 2022 had extended the control period of the Tariff Order No. 04 of 2021 up to 19<sup>th</sup> June 2023. The said Order provides that it shall be applicable to the project commissioned during the Control Period specified in the Order.

The Commission while framing the discussion paper considered the Policy & Regulatory provisions outlined in the Electricity Act, 2003 and Policies and Rules framed under the Act as well as 'National Wind -Solar Hybrid Power Policy' and subsequent Competitive Bidding Guidelines notified by MNRE.

### 1.2 The Electricity Act, 2003

The following provisions of the Act provide the enabling legal framework for promotion of Renewable Sources of energy by the State Electricity Regulatory Commissions (SERCs):

**Section 3 (1)** of the Act requires the Central Government to formulate, inter alia, the National Electricity Policy in consultation with the Central Electricity Authority (CEA) and State Governments for *inter-alia*, development of the renewable sources of energy. The provision is reproduced as under:



*"The Central Government shall, from time to time, prepare the National Electricity Policy and tariff policy, in consultation with the State Governments and the Authority for development of the power system based on optimal utilisation of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy."*

**Section 61 (h)** of the Electricity Act, 2003 provides as under:

*"61. **Tariff regulations.** The Appropriate Commission shall, subject to the provisions of this Act, specify the terms and conditions for the determination of tariff, and in doing so, shall be guided by the following, namely: -*

*".....*

*(h) the promotion of co-generation and generation of electricity from renewable sources of energy"*

**Section 62 (1) (a)** of the Electricity Act, 2003 provides as under:

*"62. **Determination of Tariff.** - (1) The Appropriate Commission shall determine the tariff in accordance with the provisions of this Act for: -*

*(a) supply of electricity by a generating company to a distribution licensee:*

*Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of an agreement, entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity.*

*....."*

**Section 86 (1) (b) & 86 (1) (e)** of the Electricity Act, 2003 states as under:

**86. Functions of State Commission** - (1) *The State Commission shall discharge the following functions, namely: -*

*".....*





*(b) regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State”*

.....

*(e) Promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee.”*

### **1.3 Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022**

The Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 were notified on 06.06.2022 by Ministry of Power, Govt. of India and its subsequent amendments dated 27.01.2023 & 13.05.2023 to facilitate use of Renewable Energy (RE) by the consumers through Open Access and thereby to further accelerate India's RE programs. The aforesaid Rule provides that the tariff for the supply of green energy by the Distribution Licensee shall be determined separately by the Appropriate Commission based on the Average Pooled Power Purchase Cost of the renewable energy, cross-subsidy charges, if any, and service charges covering the prudent cost of the distribution licensee for providing the green energy.

The Rules provide that consumers who have contracted demand or sanctioned load of Hundred (100) kW or more, either through single connection or through multiple connections aggregating Hundred (100) kW or more located in same electricity division of distribution licensee, shall be eligible to source power through Green Energy Open Access. Further, there shall be no capacity restriction for setting up of RE projects for captive use with respect to consumers' contract demand/ sanctioned load.

The Rules recommends Banking facility for the RE projects set up for captive use and third-party sale and specifies applicability of Open Access Charges, Cross Subsidy Charge, Additional Surcharge and treatment of un-utilized banked energy in case of Open Access transactions under third party and captive use.



The Rules provides that it shall come in force from the date of its Notification i.e. with effect from 06.06.2022.

#### 1.4 National Electricity Policy (NEP)

**Clause 5.2.20** of the NEP stipulates the need for fully exploiting the feasible potential of non-conventional energy sources, as reproduced below:

*“5.2.20 Feasible potential of non-conventional energy resources, mainly small hydro, wind and biomass would also need to be exploited fully to create additional power generation capacity. With a view to increase the overall share of non-conventional energy sources in the electricity mix, efforts will be made to encourage private sector participation through suitable promotional measures.”*

**Clause 5.6.1** stipulates about the need for Technology Development and R&D on non-conventional energy systems, as reproduced below:

“ .....

*Special efforts would be made for research, development demonstration and commercialisation of non-conventional energy systems. Such systems would need to meet international standards, specifications and performance parameters.”*

**Clause 5.12** stipulates several conditions for promotion and harnessing of renewable energy sources. The salient features of the said provisions of NEP are reproduced below:

*5.12.1: Non-conventional sources of energy being the most environment-friendly, there is an urgent need to promote generation of electricity based on such sources of energy. For this purpose, efforts need to be made to reduce the capital cost of projects based on non-conventional and renewable sources of energy. Cost of energy can also be reduced by promoting competition within such projects. At the same time, adequate promotional measures would also have to be taken for development of technologies and a sustained growth of these sources. Progressively, the share of electricity from non-conventional sources would need to be increased as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies.*



## 1.5 Tariff Policy 2016

In compliance with the Section (3) of the Electricity Act, 2003 the Central Government has notified the revised Tariff Policy on 28.01.2016. The Tariff Policy elaborates the role of Regulatory Commissions, the mechanism for promoting renewable source of energy, the time-frame for implementation, etc. The Clause 5.2 of the Tariff Policy is reproduced as under:

“.....

*Provided also that the State Government can notify a policy to encourage investment in the State by allowing setting up of generating plants, including from renewable energy sources out of which a maximum of 35 % of the installed capacity can be procured by the Distribution Licensees of that State for which the tariff may be determined under Section 62 of the Electricity Act, 2003.”*

Clause 6.4 of the Tariff Policy states about various aspects associated with promoting and harnessing renewable sources of energy generation including co-generation from renewable energy sources, which is reproduced below:

“.....

*6.4 – Renewable sources of energy generation including co-generation from renewable energy sources*

*1) Pursuant to provisions of Section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE.*

*Provided that cogeneration from sources other than renewable sources shall not be excluded from the applicability of RPOs.*

*(i) Within the percentage so made applicable, to start with, the SERCs shall also reserve a minimum percentage for purchase of solar energy from the date of notification of this policy which shall be such that it reaches 8% of total consumption of energy, excluding Hydro Power, by March 2022 or as notified by the Central Government from time to time.*



*(ii) Distribution Licensee(s) shall compulsorily procure 100% power produced from all the Waste-to-Energy plants in the State, in the ratio of their procurement of power from all sources including their own, at the tariff determined by the Appropriate Commission under Section 62 of the Act.*

*(iii) It is desirable that purchase of energy from renewable sources of energy takes place more or less in the same proportion in different States. To achieve this objective in the current scenario of large availability of such resources only in certain parts of the country, an appropriate mechanism such as Renewable Energy Certificate (REC) would need to be promoted. Through such a mechanism, the renewable energy based generation companies can sell the electricity to local distribution licensee at the rates for conventional power and can recover the balance cost by selling certificates to other distribution companies and obligated entities enabling the latter to meet their renewable power purchase obligations. The REC mechanism should also have a solar specific REC.*

*(iv) Appropriate Commission may also provide for a suitable regulatory framework for encouraging such other emerging renewable energy technologies by prescribing separate technology based REC multiplier (i.e. granting higher or lower number of RECs to such emerging technologies for the same level of generation). Similarly, considering the change in prices of renewable energy technologies with passage of time, the Appropriate Commission may prescribe vintage based REC multiplier (i.e. granting higher or lower number of RECs for the same level of generation based on year of commissioning of plant).*

*2) States shall endeavour to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.*

*However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003. While determining the tariff from such sources, the Appropriate Commission shall take into account the solar radiation and wind intensity which may differ from area to area to ensure that the benefits are passed on to the consumers.*





3) *The Central Commission should lay down guidelines for pricing intermittent power, especially from renewable energy sources, where such procurement is not through competitive bidding. The tariff stipulated by CERC shall act as a ceiling for that category.*

(4) *In order to incentivize the Distribution Companies to procure power from renewable sources of energy, the Central Government may notify, from time to time, an appropriate bid-based tariff framework for renewable energy, allowing the tariff to be increased progressively in a back-loaded or any other manner in the public interest during the period of PPA, over the life cycle of such a generating plant. Correspondingly, the procurer of such bid-based renewable energy shall comply with the obligations for payment of tariff so determined.*

(5) *In order to promote renewable energy sources, any generating company proposing to establish a coal/lignite based thermal generating station after a specified date shall be required to establish such renewable energy generating capacity or procure and supply renewable energy equivalent to such capacity, as may be prescribed by the Central Government from time to time after due consultation with stakeholders. The renewable energy produced by each generator may be bundled with its thermal generation for the purpose of sale. In case an obligated entity procures this renewable power, then the SERCs will consider the obligated entity to have met the Renewable Purchase Obligation (RPO) to the extent of power bought from such renewable energy generating stations.*

*Provided further that in case any existing coal and lignite based thermal power generating station, with the concurrence of power procurers under the existing Power Purchase Agreements, chooses to set up additional renewable energy generating capacity, the power from such plant shall be allowed to be bundled and tariff of such renewable energy shall be allowed to be pass through by the Appropriate Commission. The Obligated Entities who finally buy such power shall account towards their renewable purchase obligations. Provided also that scheduling and despatch of such conventional and renewable generating plants shall be done separately.*

(6) *In order to further encourage renewable sources of energy, no inter-State transmission charges and losses may be levied till such period as may be notified by the Central Government on transmission of the electricity generated from solar and wind sources of energy through the interstate transmission system for sale.*



*(7) Appropriate Commission may provide regulatory framework to facilitate generation and sale of electricity from renewable energy sources particularly from roof-top solar system by any entity including local authority, Panchayat Institution, user institution, cooperative society, Non-Governmental Organization, franchisee or by Renewable Energy Service Company. The Appropriate Government may also provide complementary policy support for this purpose.*

*Explanation: "Renewable Energy Service Company" means an energy service company which provides renewable energy to the consumers in the form of electricity.*

## **1.6 National Wind-Solar Hybrid Power Policy 2018**

The Ministry of New and Renewable Energy (MNRE) notified the National Wind-Solar Hybrid Policy on 14.05.2018. The Clauses 2.1 & 2.2 of the Policy reads as under:

*"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 efficient utilization of transmission infrastructure and land. It also aims at reducing the variability in renewable power generation and achieving better grid stability".*

*"2.2 Policy also aims to encourage new technologies, methods and way-outs involving combined operation of wind and solar PV Plants."*

The policy seeks to provide support for new hybrid projects as well as hybridisation of existing Wind/Solar Power Projects. The policy also permits for use of battery storage in the hybrid project for optimising the output and further reduces the variability.

The Policy state that 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.

The Policy also state that 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.





## **1.7 MNRE's Guidelines for Tariff Based Competitive Bidding Process for Procurement of Power from Grid Connected Wind Solar Hybrid Projects (No. 238/78/2017-Wind dated 14.10.2020)**

The provisions under the MNRE competitive bidding guidelines and the specific objective of these guidelines are highlighted below.

- a) *To promote competitive procurement of electricity from grid connected wind solar hybrid power projects (hereafter termed as 'Hybrid Power Project'), by distribution licensees, to protect consumer interests.*
- b) *To facilitate transparency and fairness in procurement processes/and to provide for a framework for an Intermediary Procurer as an Aggregator/trader for the inter-state sale-purchase of long-term power.*
- c) *To provide a risk-sharing framework between various stakeholders, involved in the wind solar hybrid power procurement, thereby encouraging investments, enhanced bankability of the Projects and profitability for the investors.*

### **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 Projects having individual size of 50 MW and above at one site with minimum bid capacity of 50 MW, 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. The minimum capacity to be injected at each injection point shall be 50 MW.*

*3.3. Storage may be added to the hybrid power project:*

- a. *to reduce the variability of output power from wind solar hybrid project.*



b. providing higher energy output for a given capacity (bid/ sanctioned capacity) at delivery point, by installing additional capacity of wind and solar power in a wind solar hybrid project.

c. to ensure availability of firm power for a particular period.

3.4. Unless explicitly specified in these Guidelines, the provisions of these Guidelines shall be binding on the Procurer and Intermediary Procurer. The process to be adopted in event of any deviation proposed from these Guidelines is specified in Clause 23 of these Guidelines.

3.5. The power procured from the project may be used for fulfilment of solar and non-solar RPO in the proportion of rated capacity of solar and wind power in the plant respectively.”

**The arrangement for implementation shall be as under:**

- a) SECI will be the nodal agency for implementation of these Guidelines.
- b) The selection of the Hybrid Power Projects will be through a transparent e-bidding process followed by e-reverse auction.
- c) The solar and wind projects may be located at same or different locations.
- d) Storage may be added to the Hybrid power project.
- e) The power procured from the project may be used for fulfilment of solar RPO and non-solar RPO in the proportion of rated capacity of solar and wind power in the plant respectively.
- f) Unless explicitly specified in these Guidelines, the provisions of these Guidelines shall be binding on the Procurer and SECI.
- g) The Intermediary Procurer, i.e. SECI, shall enter into a Power Purchase Agreement (PPA) with the Hybrid Power Generator(s) and also enter into a Power Sale Agreement (PSA) with the distribution licensee(s)/consumer(s). The PSA shall contain the relevant provisions of the PPA on a back-to-back basis. In case SECI is not able to enter into a PSA



*to sell power from projects awarded to distribution licensee(s) or bulk consumers within six months from issue of letter of award, those projects would be cancelled.*

- h) The duration of the PPA period should not be less than 25 years from the Scheduled Commissioning Date (SCD).*
- i) SECI may charge a trading margin of seven paise/kWh from the Buying entity/Procurer for purchase and sale of the hybrid power.*
- j) The bidders may avail fiscal and financial incentives available for such projects as per prevailing conditions and Rules, and the same may be disclosed by the SECI in the Request for Selection (RfS) document.*

### **1.8 Gujarat Renewable Energy Policy 2023**

Government of Gujarat vide G.R. No. REN/e-file/20/2023/0476/B1 dated 4<sup>th</sup> October 2023 has notified Gujarat Renewable Energy Policy 2023. The Gujarat Renewable Energy Policy, 2023, aims to tap the renewable energy potential of State in a maximum possible manner. The policy also aims to (a) attract participation from Industries, MSMEs, Organizations, and Consumers etc. for augmenting clean energy sources in the State, (b) achieve the State's Sustainable Development Goals by rapid transition to clean energy sources, (c) make available quality, reliable and cost competitive renewable power to consumers with conducive policy framework, and (d) achieve 50% of cumulative electric power installed capacity from non-fossil fuel-based energy resources by the year 2030.

The main objectives of the Policy are as under:

- a) To tap the RE potential available in the State.*
- b) Increase the share of RE and ensure energy security to reduce dependency on fossil fuels.*
- c) To supply day time power to Agricultural Consumers.*
- d) To reduce the carbon footprint and hedging the energy cost.*
- e) Promote decentralized RE generation.*
- f) Promote investment, employment & skill enhancement and local manufacturing, Start-Ups, etc. in the RE sector.*



- g) Encourage research and development and deployment of innovative technologies, pilot projects, etc. in the RE sector.*
- h) Promote energy efficiency by creating energy awareness.*

The policy provides that Renewable Energy Projects that are installed and commissioned during the operative period will be eligible for the benefits and incentives outlined in this Policy. Further, the projects commissioned after 19<sup>th</sup> June-2023 under Wind Solar Hybrid Policy, 2018 and before the issuance of the Policy shall be eligible for the benefits under this Policy. These benefits will be applicable for a period of 25 years from the date of commissioning or the lifespan of the RE project, as defined by GERC / MoP / MNRE, whichever is earlier.

The provisions related to hybridization of Wind-Solar Power Projects outlined in the Policy are elaborated below:

#### ***“11. Wind-Solar Hybrid***

- 11.1 Solar and wind energy generations being complementary to each other, ‘hybridization’ of two technologies would help in minimizing the variability apart from optimally utilizing available infrastructure, including land and transmission systems.*
- 11.2 Capacity of one resources (solar or wind) in the hybrid projects shall be as per the National Wind-solar Hybrid Policy notified by MNRE vide letter No. F. No. 238/78/2017-Wind dated 14<sup>th</sup> May 2018 for Wind Solar Hybrid Projects and its amendments from time to time.*
- 11.3 For the purpose of simplicity, wind-solar hybrid power generation plants are divided into two categories:*
  - 11.3.1 Type-A Projects: This category includes the conversion of existing or under-construction standalone wind or solar power plants into hybrid projects. Wind or solar capacity under construction shall be considered based on the registration certificate issued by GEDA or evacuation permission granted by GTECO/STU to the solar or wind RE developers as the case may be, before the issuance of this policy. The installed wind and solar capacity shall be considered based capacity of power purchase agreement (PPA) or wheeling agreement.*





*Only AC integration shall be permitted. The integration of wind and solar components of a wind-solar hybrid projects shall be allowed at the plant end or at the pooling/sending station depending upon the feasibility issued by DISCOM/GETCO in accordance with the connectivity regulations of GERC/CERC, Safety regulations issued by CEA and all other applicable regulations/standards/code. Provided further that a separate set of main and back up ABT Compliant metering systems for the purpose of apportioning of energy shall be installed at the generating terminal/turbine output of each WTG with necessary communications facility to the GEDA/GETCO System and the energy accounting shall be undertaken accordingly. Further suitable control equipment shall be deployed for controlling the power output of the hybrid projects.*

**11.3.2 Hybridization of Type A Projects:** Existing wind power or solar power RE Developers willing to install solar PV plants or wind turbine generators, respectively, at the existing locations to avail benefits under this policy shall be allowed to do so with the following conditions:

- (a) *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 and solar capacity, RE Developers shall undertake such addition or augmentation in the system up to the receiving end sub-station 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.*
- (b) *The solar and wind power generated from the hybrid projects shall be measured separately at the pooling/sending-end sub-station and energy injection at the receiving end sub-station of GETCO/STU shall be worked out on an apportioned basis as per the common meter reading at the receiving end sub-station up to the receiving end sub-station of GETCO/STU.*



(c) *The RE Developers shall approach GETCO/STU to determine the transmission capacity available to evacuate the additional wind and solar power or any augmentation that may be required. GETCO/STU shall provide the relevant data with regards to the transmission capacity utilization on its existing network.*

**11.3.3 Type-B Projects:** *This includes new wind-solar hybrid power generation projects that are not registered with GEDA or for which evacuation permission has not been granted by GETCO/STU until the date of issuance of this policy.*

*Further, in the absence of a common RPO and tariff, only AC integration will be allowed. The integration of wind and solar components of a wind-solar hybrid projects shall be allowed at the plant end or at the pooling / sending station depending upon the feasibility issued by DISCOM/GETCO in accordance with the connectivity regulations of GERC / CERC, Safety regulations issued by CEA and all other applicable regulations / standards / code. Provided further that a separate set of main and back up ABT Compliant metering systems for the purpose of appropriating of energy shall be installed at the generating terminal / turbine output of each WTG with necessary communication facility to the GEDA / GETCO System and the energy accounting shall be undertaken accordingly. Further, suitable control equipment shall be deployed for controlling the power output of the hybrid projects.*

*DC integration shall be contingent on the availability of DC metering standards, which may evolve over time.*

*Under all circumstances, the RE Developer shall lay a dedicated line for the evacuation of power from the pooling/sending-end sub-station of the hybrid project to the receiving-end sub-station of GETCO/STU as per the system study undertaken by GETCO/STU. Energy injection from wind and solar capacity at the receiving end of the GETCO/STU sub-station shall be worked out separately on the basis of the meter reading of the common meter installed at the receiving end of the sub-station and appropriately apportioned as per the respective meter readings of the wind and solar meters.*

**11.4** *Wheeling of energy for captive use or for third party sale shall be allowed on payment of charges as per Clause No. 15 and energy settlement will be as per Clause No. 14 of this policy.*





11.5 *The Distribution Licensees may procure from wind-solar hybrid power projects in accordance with the Clause No. 16 of this Policy.*

.....

The provisions related to Energy Settlement & banking and tariff for purchase of energy from Wind Solar Hybrid projects, outlined in the Policy are elaborated below:

#### ***“14. Energy Settlement and Banking***

14.1 *Energy accounting and banking for all renewable energy projects, including rooftop projects, shall be as per the regulations framed by GERC from time to time in accordance with the Green Energy Open Access Rules 2022 notified by the Ministry of Power, Govt of India. In case of the consumers availing energy banking facility, the settlement of renewable energy against consumer's consumption shall be carried out on billing cycle basis upon payment of applicable banking charges as determined by GERC from time to time. No banking charges shall be applicable on solar power consumed by Residential consumers.*

14.2 *In case the consumer is not availing energy banking facility and consumption is from RE projects registered under REC mechanism, the energy settlement shall be carried out on 15-minute time block basis and no banking charges will be applicable.*

14.3 *Energy banking facility on billing cycle basis shall be allowed upon payment of applicable banking charges, which shall be determined by GERC from time to time in a cost reflective manner taking into account the cost implications for DISCOMs in providing the banking facility. Banking facility will be allowed to the extent of capacity to absorb RE power in the State's grid and RE Project will not have any right to claim any compensation from utilities. However, the SLDC / Distribution companies / Transmission companies will make efforts for enhancing the load management capacity by upgrading/modernization of their infrastructure. The banking charges shall be determined on monthly/quarterly basis as per the details / information of the previous month/quarter.*

14.4 *MoP, GoI Guidelines related to energy storage obligations as amended from time to time will be applicable to the captive and third-party consumers.*



- 14.5 *For net import of power from DISCOMs i.e. energy consumption after providing set off of renewable energy, DISCOM will charge the tariff applicable to respective category of the consumer which shall include fixed or demand charges, energy charges, peak hour charges, other charges or penalties, etc. as applicable to other consumers.*
- 14.6 *Power generated from the RE project shall be utilized within applicable energy settlement period. Any energy that remains unutilized at the end of settlement period shall be treated as inadvertent flow and no payment shall be made by the DISCOM for such energy.*
- 14.7 *Peak hour charges as per the GERC tariff schedule shall be levied on the entire peak hours energy consumption as recorded in the consumer meter i.e. including banked energy.*

The Purchase of Power by DISCOMs from Wind Solar Hybrid Projects related provisions outlined in the Policy are elaborated below:

#### ***“16. Purchase of Power by DISCOMs***

##### ***For RE projects covered under competitive bidding process as per MNRE Guidelines:***

- 16.1 *DISCOM may purchase power from RE projects from time to time to economize overall power purchase costs for the benefit of consumers by following the competitive bidding process in accordance with the guidelines notified by the Government of India from time to time under Section 63 of the Electricity Act. The terms and conditions for the supply of power shall be governed by the provisions of respective Power Purchase Agreement signed between the RE project and DISCOM.*
- 16.2 *In the case of Type-A hybrid projects, the purchase of power from existing wind or solar capacity as the case may be, shall be in accordance with the respective PPAs with DISCOMs, and purchase of power from additional or new wind or solar capacity shall be at the tariff discovered through competitive bidding undertaken by DISCOMs separately for purchase of wind and/or solar power.*

##### ***16.3 For RE Projects exempted from competitive bidding process as per MNRE guidelines:***



### **16.3.1 Purchase from Solar Power Projects**

*DISCOMs may procure power from distributed solar projects up to 4 MW capacity at a pre-fixed levelized tariff as per the mechanism decided by GERC i.e. simple average of tariffs discovered and contracted under the competitive bidding process conducted by GUVNL for solar projects in the preceding 6-month period, i.e., either April to September or October to March, as the case may be, plus 20 paisa/unit, which shall be applicable for the signing of PPAs in subsequent 6-month period and such tariff shall remain fixed for the 25 year term of the PPA.*

*Further, in case generic tariff is determined by GERC for solar project and such tariff is lower than tariff as stated in above para, lower tariff will be applicable for purchase of solar power from such project and the same shall be fixed for entire term of PPA.*

### **16.3.2 Purchase from wind power projects**

*DISCOMs may procure power from small size wind power projects up to 10 MW capacity at a pre-fixed levelized tariff equal to the simple average of tariff discovered and contracted under the competitive bidding process conducted by GUVNL for wind projects in the preceding 6-month period, i.e., either April to September or October to March, as the case may be, which shall be applicable for the signing of PPAs in subsequent 6-month period and such tariff shall remain fixed for the 25 year term of the PPA.*

*Further, in case generic tariff is determined by GERC for wind project and such tariff is lower than tariff as stated in above para, lower tariff will be applicable for purchase of wind power from such project and the same shall be fixed for entire term of PPA.*

*16.3.3. For projects covered under Clause No. 16.3.1 and 16.3.2, if the tariff is not available for preceding 6- month period, then available tariff of latest 6-month tariff shall be considered.*



16.3.4 Purchase of power from the RE project setup under the specific scheme / guideline of State or Central Government, as the case may be, will be governed as per the terms and conditions of respective scheme / guidelines. Further, the tariff for such projects shall be as approved by GERC.”

.....

## **29. Repowering of wind projects**

29.1 With an objective to re-energize the old, small-sized and inefficient wind turbines and replace with bigger and more efficient wind turbines with better technology (improved rotor diameters, larger blades, taller towers and pole lengths, increased hub heights, etc.) so as to optimally utilize the existing land and infrastructure, the repowering of wind turbine generators shall have to be done by the RE developers on or before the completion of 25 years from the date of commissioning of the project or extended term of the agreement.

29.2 The repowering of wind turbine generators shall have to be done by the RE developers within six months from the date of issuance of this policy whose wind turbine generators have either completed the 25 years or about to complete the 25 years from the date of commissioning of the project. The developer whose agreements with GETCO and DISCOM are either extended or expired within one year from the date of issuance of this policy shall be eligible for the repowering.

29.3 If the Wind Project developer fails to repower its wind turbine generator at the expiry of the project's life term of agreement / extended terms of agreement, as the case may be, such RE developer shall have to decommission the wind power project and surrender the connectivity, and if the WTG is set up on leased land, they shall also have to surrender their leasehold rights to Government.

29.4 The life of the repowered project shall be 25 years or the actual life of the turbines, whichever is earlier.

29.5 RE developer shall be allowed for full partial repowering without any ceiling limit during the operation period.





29.6 The repowering of projects shall have to be done under intimation to the beneficiary and with the prior consent of the SNA.

29.7 After completion of repowering RE Developer is required to inform SNA for certification of repowering. Date certified by SNA shall be considered as date of Repowering.

29.8 Repowering of Wind Projects selling power to DISCOM:

i. In case Wind project is selling power to DISCOM under the PPA (under a preferential tariff, REC mechanism, or competitive bidding route), then such wind power generator shall continue to supply generation from the existing capacity prior to repowering as per the terms and conditions of the existing PPA.

ii. The generation corresponding to the existing capacity prior to repowering shall be equivalent to the average generation during the last three years prior to the repowering of the wind project, excluding the year in which repowering was undertaken.

iii. The additional generation capacity due to repowering may be procured by DISCOM as per Clause No. 16 of this policy, taking into account the RPO requirement and tariff discovered through the competitive bidding process, as may be decided from time to time. However, it will not be binding for the DISCOM to purchase additional power as a result of repowering of wind project and RE developer shall have option to sell power or use for self consumption.

29.9 Repowering of Wind Projects setup under wheeling arrangement:

i. The consumption of existing wind generation quantum shall be governed by the existing wheeling and transmission agreement.

ii. Existing generation quantum shall be determined based on average generation in the previous 3 financial years prior to repowering, excluding the year in which repowering was undertaken. The wheeling of additional generation over and above the existing generation quantum will be governed as per the provisions of this policy.

iii. The Wheeling Agreement shall have to be modified or amended to give effect of the same.



*iv. If the incremental capacity post-repowering is offered to concern DISCOM, the same may be procured by DISCOM in accordance with Clause No. 16 of this policy.*

*29.10 For existing wind projects completing 25 years of life from the date of CoD, the extensions in connectivity by STU and land lease extensions by GEDA shall be granted only upon repowering of the existing wind turbine generators. Additional wind capacity due to repowering will be governed by Clause No. 29.6 and 29.7, as applicable.*

*29.11 The dismantling and de-commissioning of existing RE projects, land acquisition, augmentation of the transmission system up to the GETCO (STU) Sub-Station, renewal of leases, renewal of consents, etc. shall be at the cost, risk, and responsibility of the RE developer.*

*29.12 The wind projects undergoing repowering shall be exempted from the obligations under the existing PPA for non-availability of generation during the period of execution of such repowering, subject to a maximum period of four months. Similarly, in the case of repowering by wind power project set up under wheeling arrangement, the wind project shall be allowed to purchase power from the grid during the period of execution of repowering upon payment of tariff to concerned DISCOM as applicable to respective consumer category.*

*29.13 The 'Gujarat Repowering of Wind Projects Policy 2018' notified vide G.R. dated May 21, 2018 stand superseded."*

### **1.9 GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.**

The Commission has notified the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024. While notifying the present tariff framework, the Commission has also considered the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024. The GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 stipulates various provisions related to grant of Open Access from Green Energy Generating Projects for consumption of green energy for captive use as well as purchase of green energy from third party generators including provisions related to energy banking facility, banking charges, energy settlement mechanism, applicability of various open access charges, etc.





### 1.10 Renewable Purchase Obligation in Gujarat

The GERC (Procurement of Energy from Renewable Sources), (Third Amendment) Regulations, 2022 dated 08.04.2022, specify the Renewable Purchase Obligation (RPO) targets till FY 2024-25 and beyond as below:

| Year    | Minimum Quantum of Purchase (in %) from Renewable Energy Sources (in terms of energy in kWh) |       |   |  |           |
|---------|--|-------|---|--|-----------|
|         | Wind   | Solar | Hydro Power Purchase Obligation (HPO) (%) | Others (Biomass, Bagasse, Hydro and MSW) (%) | Total (%) |
| 2017-18 | 7.75   | 1.75  |   | 0.50   | 10.00     |
| 2018-19 | 7.95   | 4.25  |   | 0.50   | 17.02     |
| 2019-20 | 8.05   | 5.50  |   | 0.75   | 14.30     |
| 2020-21 | 8.15   | 6.75  |   | 0.75   | 15.65     |
| 2021-22 | 8.25   | 8.00  |   | 0.75   | 17.00     |
| 2022-23 | 8.25   | 8.00  |   | 0.75   | 17.00     |
| 2023-24 | 8.40   | 9.50  | 0.05                                      | 0.75   | 18.70     |
| 2024-25 | 8.55   | 11.25 | 0.10                                      | 0.80   | 20.70     |

Source: GERC (Procurement of Energy from Renewable Sources) (Third Amendment) Regulations, 2022

As per the RPO regulation, the obligated entities have the obligation to purchase electricity (in kWh) from specified RE sources. The said purchase shall be at a defined minimum percentage of the total consumption of its consumers including T&D losses during a year.

This renewable purchase obligation applies to:

- distribution licensees; and
- any other captive and open-access users consuming electricity (i) generated from conventional captive generating plant having capacity of 5 MW and above for their own use and/or (ii) procured from conventional generation through open access and third party sale.

The aforesaid Regulations also provides that the targets specified for Obligated Entities for FY 2024-25 shall be continued beyond for FY 2025-26 and onwards unless specified by the Commission separately.

Further, this Regulation recognises the certificates issued within the scope of Central Electricity Regulatory Commission's (CERC) Renewable Energy Certificate (REC) as the valid



instruments for the discharge of the mandatory obligations set out in these Regulations for the obligated entities to purchase electricity from renewable energy sources termed as Renewable Energy Certificates (REC).

### **1.11 Discussion Paper on Tariff Framework for Wind – Solar Hybrid Project including Storage, if any and other Commercial Issues**

The Commission considered the MNRE Policy and Guidelines related to Wind-Solar Hybrid Power Projects along with the MoP's Electricity (Promoting Renewable Energy through Green Energy Open Access Rules 2022 & its subsequent amendments. The Commission has considered the provisions of Gujarat Wind Solar Hybrid Policy 2018 notified by Government of Gujarat along with the competitive discovered tariffs for purchase of energy from Wind-Solar Hybrid Projects during the control period of previous tariff order, while proposing the tariff framework for the next control period in the Discussion Paper.

Accordingly, the Discussion Paper was published by the Commission and uploaded on the Commission's website [www.gercin.org](http://www.gercin.org) in downloadable format on 17<sup>th</sup> June 2023, inviting comments/objections/suggestions from stakeholders by 03<sup>rd</sup> July 2023.

A list of stakeholders communicated their views on the Discussion Paper is given at **Annexure I**.

### **1.12 Public Hearing**

The Commission has examined the suggestions/comments/objections received on the discussion paper. The Commission fixed the date for public hearing on the proposed Tariff framework for Wind-Solar Hybrid Projects on 10<sup>th</sup> July 2023 at the Commission's Office, Gandhinagar.

A list of stakeholders participated in the public hearing and presented their comments/objections/suggestions is given at **Annexure-II**.

The main comments and views expressed by the stakeholders through their written/oral submissions and the Commission's views thereon have been summarized in the following paragraphs. It may be noted that all the suggestions given by the stakeholders have been



considered and the Commission has attempted to elaborate all the suggestions as well as the Commission's decisions on each suggestion. However, in case any suggestion is not specifically elaborated, it does not mean that the same has not been considered. Wherever possible, the comments and suggestions have been summarised clause-wise, along with the Commission's analysis and ruling on the same.





## 2. COMMENTS AND SUGGESTIONS ON PROPOSED TARIFF FRAMEWORK AND COMMISSION'S VIEWS

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### 2.1 Clause 3.1: Tariff Framework

#### 2.1.1 Proposed in Discussion Paper

The Ministry of New and Renewable Energy has notified Competitive Bidding Guidelines for Procurement of Power from grid connected Wind Solar Hybrid Projects on 14.10.2020. The Commission has already directed the Distribution Licensees to procure power from Solar and Wind Projects through Competitive Bidding Process under Section 63 of the Act by following Competitive Bidding Process followed by SECI/MNRE etc.

The Control Period under Order No. 04 of 2021 was expired on 31<sup>st</sup> March 2023. The Commission vide Order dated 17<sup>th</sup> March 2023 in Petition No. 2128 of 2022 has extended the control period of the aforesaid Tariff Order up to 19<sup>th</sup> June 2023.

In the discussion paper, the Commission had proposed following tariff framework for the existing/new Wind Solar Hybrid Projects that are above/ below the threshold limit specified in Competitive Bidding Guidelines published by MNRE.

#### **Projects above threshold limit**

##### **For Type – A (Existing projects):**

In case the existing Wind /Solar Project which presently are tied up with GUVNL/DISCOM under long term PPA at feed-in tariff / preferential tariff are allowed to be converted into hybrid by adding new solar/wind capacity, with mutual consent between developer & GUVNL/DISCOM. The tariff for newly converted hybrid projects above the threshold limit for participation in bidding shall be discovered through tariff based competitive bidding under Section 63 of the Act.

Captive owner itself or in case of third-party sale, both the seller and suppliers with mutual discussion are eligible to convert existing project into the Hybrid Project. In case the developer intends to convert existing solar/ wind captive/third party project into hybrid power by adding new solar/wind capacity for the purpose of captive use or third party





sale, then the developer has to (i) registered Hybrid Power Project as afresh with GEDA, (ii) need to execute fresh transmission and wheeling agreement with GETCO and/or (iii) shall pay the OA charges & losses and banking facility and charges as specified in the discussion paper.

### **For Type-B (New Projects)**

The tariff for the new hybrid projects above threshold limit shall be discovered as per tariff based competitive bidding guidelines issued by MoP under Section 63 of the Act. The Commission may adopt such tariff.

Projects set up under OA regime for captive use or third party sale shall have to pay the Open Access charges and transmission losses and wheeling loss specified in the discussion paper.

### **Tariff framework for the Project below threshold limit**

Threshold limit means for Wind-Solar and Storage, if any, Hybrid Project shall be 50 MW or as may be specified by Ministry of Power, Government of India and/or Commission from time to time.

There could be cases of Wind Solar Hybrid Power Projects below the threshold limit of eligibility (50 MW) for participating in Competitive bidding. The threshold limit is consisting of new capacity and existing capacity of Wind/Solar Hybrid Project. The Commission proposes to determine the tariff for the Wind Solar and Storage, if any, Hybrid Projects falling below the threshold limit of eligibility for participating in the competitive bidding process as given below.

Tariff for Wind Solar and Storage, if any, Hybrid Power Projects falling below the threshold limit of eligibility shall be considered equal to the weighted average tariff (of Wind, Solar & Wind-Solar and Storage, if any, Hybrid) available as on 1<sup>st</sup> April or 1<sup>st</sup> October depending on commissioning date of the project and adopted by the Commission.

### **2.1.2 Suggestions/Objections of the Stakeholders**

IWTMA & InWEA submitted that in case of conversion of existing solar/ wind projects into Hybrid project, the newly added/ additional capacity/ should be considered to be treated as



per the provisions of new Wind Solar Hybrid Tariff Order. Additionally, the existing capacity should be governed as per relevant tariff order at the time of commissioning of those projects.

**GUVNL** submitted that in the existing Renewable Power Purchase Obligation (RPO) Regulation of the Commission, separate purchase obligation is specified for Wind, Solar and other RE category. Therefore, in the scenario of separate RPO and tariff for compliance of RPO by obligated entities, it is imperative for the licensee to conduct separate bidding process for wind and solar or undertake segregation of wind and solar energy to comply separate RPO specified by the Commission for wind and solar respectively. As per the provisions of guidelines issued by MNRE, the threshold limit for purchase of power from Wind Power Projects and Solar Power Project is 25 MW and 5 MW respectively. Therefore, the threshold limit for participating in competitive bidding for purchase of solar and wind power from the Wind-Solar and Storage, if any, Hybrid Projects shall be 5 MW and 25 MW respectively instead of 50 MW.

**BA Prerna Renewables Pvt. Limited** requested that the tariff for Wind Solar Hybrid Projects below threshold limit may not be decided based on tariff discovery of large hybrid projects (>50MW). The same should be discovered separately on the facts and figures of Small-Scale Hybrid Projects. Additionally, an incentive of around 50 paisa per unit above the weighted average tariff discovered during the competitive bidding during the previous six (6) months should be provided.

**Ultratech Cement** submitted that it might specifically be mentioned in the final tariff framework that there would not be any capacity limit for setting up the captive projects in order to avoid any ambiguity at later stage.

### **2.1.3 Analysis and Commission's Ruling**

The Commission has carefully gone through the submissions made by the stakeholders and provisions outlined in the Gujarat Renewable Energy Policy 2023. The Policy provides for conversion of existing standalone Wind or Solar plants into hybrid projects (Type-A). Similarly, the policy allows setting up New Wind Solar Hybrid Projects (Type B) as per the capacity ratio of solar and wind technology as specified in guidelines issued by MNRE. The Commission also notes that the Tariff Based Competitive Bidding guidelines for Procurement



of Power from Grid Connected Wind-Solar Hybrid Projects notified by MNRE (No. 238/78/2017-Wind dated 14.10.2020) stipulates threshold limit of 50 MW for Wind Solar Hybrid Projects to participate in competitive bidding process. The Commission also recognize that the existing standalone Solar or Wind projects may have contractual obligation under the long term PPA tied up with GUVNL/DISCOM.

After considering above aspects, the Commission decided to specify following tariff framework for Existing (Type A) and New (Type B) projects:

### **Tariff Framework for Type A (Existing Project)**

In the case of existing standalone Wind or Solar Projects which are commissioned prior to 20.06.2023, the purchase of power from such existing Wind or Solar capacity as the case may be, shall be in accordance with the respective PPAs with GUVNL/DISCOMs and purchase of power from additional / new Wind or Solar capacity commissioned after 19.06.2023 shall be at the tariff discovered through competitive bidding undertaken by DISCOMs separately for purchase of Wind and/or Solar power subject to approval of the Commission.

### **Regulatory Framework for Projects under Open Access Regime (Type A)**

In case of conversion of existing Wind or Solar capacity (i.e. commissioned prior to 20.06.2023) set up for captive use or third party sale, into Hybrid Power Project by adding new Solar or Wind capacity, the existing Wind/Solar projects set up for captive use/third party sale, shall be governed by the provisions of existing Regulations/Orders/Wheeling agreement prevailing at the time of commissioning of such existing Wind/Solar Capacity with regard to transmission and/or wheeling charges and losses, Cross Subsidy Surcharge, Additional Surcharge, if any, Banking facility and charges, etc. for the existing wind / solar capacity. The new / additional Wind or Solar capacity commissioned after 19.06.2023, as a part of Hybrid Projects shall be governed by Regulatory Framework specified by the Commission in this Tariff Order read with GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

Provided that such projects shall have to register with GEDA as a fresh for Wind-Solar Hybrid projects and also obtain necessary commissioning certificate with consideration of the



provisions of this Order read with the provisions of Green Energy Open Access Regulations, 2024 notified by the Commission and MoP Rules in this regard.

With respect to existing Wind or Solar Power Projects which are commissioned prior to the effective date of this Order i.e. 20.06.2023, it is required to see and verify the completion date of normative useful life of the project and applicability of provisions for newly added solar/wind capacity at the end of normative useful life of the existing wind/solar capacity. Further, it is also necessary to consider the terms of agreement for transmission and/or wheeling executed between the parties for existing wind/solar capacity. It is also required to consider that the Gujarat Renewable Energy Policy 2023 provides that the repowering of wind projects shall have to be done on or before completion of normative useful life of 20/25 years from the date of commissioning of the project. The wind projects developers who do not go for repowering, shall have to de-commissioned the wind power projects after completion of normative useful life of 20/25 years and shall have to surrender the connectivity and if the Wind Turbine Generators is set up on lease land, they shall have to surrender their leasehold rights to the Government. Thus, it is mandatory for wind power projects developer to go for re-powering of wind generator on or before the completion of 20/25 years' normative useful life for seeking further extension of terms of wheeling/transmission agreement. Failure to it, no extension for transmission and / or wheeling Agreement for such projects is permitted and such wind generator has to be de-commissioned. Hence, it is necessary for the project developer who desire to convert its standalone Wind or Solar Project into Hybrid Project to comply with aforesaid provisions. Similarly, the solar power project is having normative useful life of 25 years as per the Order of the Commission. Therefore, hybridisation of existing Wind or Solar Projects are subject to aforesaid provisions related to normative useful life of the project. The consideration of above aspects is explained as under:

**Illustration:**

If the wind generating plant is commissioned, say on 10.02.2013, the normative useful life of such plant, say 25 years, will be completed on 09.02.2038. Thereafter, such wind projects shall have to undergo for repowering before seeking any extension of Transmission and /or Wheeling Agreement. Thus, the existing agreement for Transmission and / or Wheeling, if any, executed by the project developer for captive use or third party sale, shall be continued only





for the period upto 09.02.2038. If such existing wind generating project desire to convert its project in to Wind-Solar Hybrid Projects, say on 01.03.2024 i.e. under the control period of this Order, by installation of additional/new solar capacity, the Hybrid status of such projects as per existing Order / Regulations read with Agreements for transmission and/ or wheeling with the licensee shall be available only for the period from 01.03.2024 to 09.02.2038. Thereafter, the said project shall be qualified only as standalone solar project for the period from 10.02.2038 to 28.02.2049 and shall be governed by the provisions of relevant Regulations and/or Orders of the Commission during which the solar plant was commissioned, i.e. shall be governed as per the provisions of this Order. While granting registration of the Hybrid project and issuing commissioning certificate, the GEDA, GETCO and /or DISCOM shall ensure to record / mention such aspects in the registration certificate / commissioning certificate and other relevant documents related to conversion of existing wind/solar project as hybrid project.

### **Tariff Framework for Type B (New Projects)**

The tariff for the new Wind-Solar Hybrid Projects above threshold limit shall be discovered as per tariff based competitive bidding guidelines issued by MoP, Government of India under Section 63 of the Electricity Act 2003. The Commission may adopt such tariff discovered through transparent competitive bidding process after following due process of law.

### **Regulatory Framework for Projects under Open Access Regime (Type B)**

The Wind-Solar Hybrid Projects set up under Open Access Regime for captive use or third party sale, shall be governed by the Regulatory Framework specified in this Order and have to pay transmission charges & losses, wheeling charges & losses, Cross Subsidy Surcharge, Additional Surcharge, if any, Banking Charges etc as applicable for Green Energy Open Access transaction as specified by the Commission in its Green Energy Open Access Regulations, 2024 read with MoP's GEOA Rules and Tariff Regulations notified by the Commission.

### **Tariff framework for the Project below Threshold Limit**



### **Type A (Existing Project)**

In case addition of new Wind or Solar capacity by the developer is below the threshold limit eligible to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE:

Tariff for purchase of power by DISCOM from newly added Wind or Solar projects falling below the threshold limit of eligibility to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE, shall be considered as lowest of the weighted average tariff of Solar or Wind, as the case may be, available as on 1<sup>st</sup> April, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (October to March) or available as on 1<sup>st</sup> October, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (April to September), depending on commissioning date of newly added Wind or Solar project capacity subject to adoption of discovered tariff by the Commission.

In case weighted average tariff is not available for particular 6 months' period then latest weighted average tariff available for 6 months' period shall be considered.

### **Type B (New Wind-Solar Hybrid Project)**

Tariff for Wind Solar and Storage, if any, Hybrid Power Projects falling below the threshold limit of eligibility to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE, shall be considered as lowest of the Weighted Average Tariff (of Wind, Solar, Wind-Solar and Storage, if any, Hybrid Power Project) available as on 1<sup>st</sup> April, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (October to March) or available as on 1<sup>st</sup> October, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (April to September), depending on commissioning date of the project subject to adoption of discovered tariff by the Commission.

In case weighted average tariff is not available for particular 6 months' period then latest weighted average tariff available for 6 months' period shall be considered.



## 2.2 Clause 3.5.1: Control Period

### 2.2.1 Proposed in Discussion Paper

The Commission proposes that the control period of the tariff framework for the new Tariff Order shall be effective from 20<sup>th</sup> June 2023 to 31<sup>st</sup> March 2026..

### 2.2.2 Suggestions/Objections of the Stakeholders

**Continuum Green Energy India Pvt. Limited** requested to make the control period of the new Tariff Order be effective prospectively i.e. from the date of issuance of Order. The objector stated that it is settled principal of law that the applicability of new Regulations/Order generally made prospectively. The objector requested the Commission to extend the control period of the previous Tariff Order till GoG notify new Wind Solar Hybrid Policy and GERC notifies Green Energy Open Access Regulations.

**BA Prerna Renewables Pvt. Limited, the Chamber of Commerce and Industry Kutch, Distributed Solar Power Association**, echoed similar concern as above and requested to consider commencement of this Tariff Order/Regulation from the date of its issuance in the gazette and extend the control period of the earlier Tariff/Regulation of 2018 till the issuance of New Tariff Order/Regulations.

Whereas **GUVNL** along with other stakeholders like **InWEA, Aditya Birla GP, Cleanmax Enviro Energy Solutions, First Energy Pvt. Limited** supported the proposal of specifying control period from 20<sup>th</sup> June 2023. GUVNL requested the Commission to omit the phrase 'prospective period' referred in the introduction part of the Discussion Paper. InWEA and other stakeholders stated that the longer control period has its own advantages such as (i) Developer gets clarity on the applicable charges and provisions to be applicable on the upcoming project, (ii) provide a clarity/confidence to investor for investment in a large size project. (iii) Government Agencies, i.e., GETCO/ Discom can also make plan for development of infrastructure accordingly. In view of above, the stakeholders requested the Commission for specifying longer control period of at least 5 years i.e. up to March 31, 2028.



### 2.2.3 Analysis and Commission's Ruling

The Commission has carefully gone through the comments received from various stakeholders and noted that some of the stakeholders are in favour of making the control period of new tariff framework effective from 20<sup>th</sup> June 2023 i.e., from the expiry date of the control period of previous Tariff Order notified by the Commission. Whereas others are of the opinion that the control period shall be made effective from the date of issuance of the Tariff Order. GUVNL, the bulk power procurer on behalf of DISCOM had supported the proposal of applicability of control period for tariff framework of new Tariff Order w.e.f. 20<sup>th</sup> June 2023.

The Commission has noted that the Ministry of Power had notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 6<sup>th</sup> June 2022 outlining the policy and regulatory provisions for promotion of renewable sources of energy through Open Access. Further, the MoP Rules are effective from the date of its Notification. The Commission also notes that the Wind-Solar Hybrid Tariff Order dated 03.04.2021 was having extended control period only up to 19.06.2023 and thereafter no extension in control period of earlier order is granted and also specified in the discussion paper that the new Order shall be effective from 20.06.2023. Therefore, the projects commissioned under the control period of previous Order were eligible to get the benefit of the said order, which was effective at relevant time. The Commission has also noticed that the Government of Gujarat has notified the Gujarat Renewable Energy Policy 2023 on 04.10.2023, wherein the benefits under the new policy for the Wind-Solar Hybrid Projects are made applicable for the Wind-Solar Hybrid Projects commissioned after 19<sup>th</sup> June 2023.

Considering above aspects and to give effect to the provision of Green Energy Open Access Rules 2022 notified by Ministry of Power under the Electricity Act, 2003 and specifically when there was no tariff order of the Commission as well as Government of Gujarat Policy effective from 20.06.2023 with regard to Wind-Solar Hybrid Project tariff framework, the Commission found it more appropriate to adopt the policy and regulatory provisions outlined in MoP Green Energy Open Access Rules, 2022 and defined the Control Period of new tariff order to be made effective from 20.06.2023 in the discussion paper also. Further, as suggested by some of the stakeholders to provide longer control period, the Commission decides to define the Control Period of this tariff framework effective from 20.06.2023 to 31.03.2027. The projects which





are commissioned during aforesaid Control Period shall be governed by the provisions MoP Green Energy Open Access Rules, 2022, read with provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and this Order of the Commission and eligible for the benefits stipulated in this Order. Further, Wind-Solar Hybrid Projects commissioned during the Control Period of this Order shall be liable to pay applicable Open Access charges and provisions related to banking facility, energy accounting etc and shall be governed by this Order read with GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

## **2.3 Clause 3.5.4: Eligible Unit**

### **2.3.1 Proposed in Discussion Paper**

Any Individual, Company or Body Corporate or Association or Body of Individuals, whether incorporated or not, or Artificial Juridical Person, shall be eligible for setting up of new Wind-Solar and Storage, if any, Hybrid Projects or shall be eligible to add Wind/Solar capacity in existing Solar/Wind Power Projects respectively, either for the purpose of captive use and/or for selling of electricity in accordance with the Electricity Act, 2003, Rules and Regulations framed thereunder as amended from time to time. The wind and solar generation and storage, if any, may be metered separately at the pooling/sending end Sub-Station.

In the discussion paper, it is provided that for simplicity purpose, the Wind-Solar Hybrid Power generation plants shall be divided into two categories:

#### **(i) Type-A Projects**

This category shall include conversion of existing/under-construction Wind or Solar Power Plants into Hybrid Projects. Wind/Solar capacity under construction projects shall be considered based on the Registration Certificate issued by GEDA/evacuation permission granted by GETCO to the Solar/Wind Project Developers. The installed Wind/Solar Capacity shall be considered based on Power Purchase Agreement (PPA)/Bulk Transmission Agreement/Wheeling Agreement capacity.



## **(ii) Type-B Projects**

This shall include New Wind-Solar Hybrid Power Generation Projects that are not registered with GEDA or evacuation permission is not granted by GETCO/DISCOMs as on the effective date of this Order. The Wind-Solar Hybrid Power Projects to be commissioned under PPAs signed during the new control period will be eligible to sell power to distribution licensees of Gujarat at the tariff framework approved by the Commission under this order.

### **2.3.2 Suggestions/Objections of the Stakeholders**

**Adani Green Energy Limited** requested the Commission to clarify the framework for operation of Wind Solar Hybrid Projects set up in Gujarat and connected to ISTS network for sale of power to the consumers located within the State of Gujarat and/or outside the State of Gujarat. It is requested that the State Nodal Agencies need to be sensitised for immediate registration of such ISTS connected hybrid projects in Gujarat supplying power to consumers in Gujarat and/or outside.

### **2.3.3 Analysis and Commission's Ruling**

The Commission clarify that the tariff framework for New Tariff Order specified in the discussion paper is for the Wind Solar Hybrid Projects set up in the State of Gujarat for sale of power to GUVNL /DISCOMs under Section 63 of the Electricity Act and the Wind Solar Hybrid Projects set up in Gujarat under Open Access regime for captive use/third party sale and connected to Intra-State Transmission and /or Distribution network of State.

The Wind Solar Hybrid Power Plants located in State of Gujarat / outside of State of Gujarat and connected to ISTS network and supplying power to consumers connected with Intra-State Transmission and / or Distribution System of State, shall be governed by CERC Open Access Regulations as well as GERC Green Energy Open Access Regulations, depending upon the drawl voltage level of consumer. Gujarat Energy Development Agency (GEDA) shall be the nodal agency for registration of such projects set up in Gujarat.

Whereas, in case of Wind-Solar Hybrid Power Project connected with ISTS network and supplying power to consumers directly connected with ISTS network but not connected with



Intra-State Transmission and /or Distribution System of State, shall be governed by CERC Open Access Regulations.

## **2.4 Clause 3.5.5: Forecasting and Scheduling for Wind Solar Hybrid Power**

### **2.4.1 Proposed in Discussion Paper**

The Wind-Solar Hybrid Projects shall require to follow the provisions as prescribed under the GERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019 notified on 19<sup>th</sup> January, 2019 and its amendments issued from time to time.

### **2.4.2 Suggestions/Objections of the Stakeholders**

**Adani Green Energy Limited** requested for clarity on applicability of DSM Regulation on the connectivity of the project with the grid, especially the ISTS projects intended for sale of power within the State of Gujarat /outside the State.

**State Load Despatch Centre (SLDC)** of Gujarat submitted that they have filed a petition before the Commission, requesting for amendment of GERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019 and procedure on Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation and the same may be considered by the Commission.

### **2.4.3 Analysis and Commission's Ruling**

The Commission would like to clarify that the Wind-Solar Hybrid Projects connected with State Grid shall require to follow the provisions as prescribed under the GERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019 notified on 19.01.2019 and its amendments issued from time to time.

In case of ISTS connected Wind Solar Hybrid Projects (including Inter-State RE projects located in Gujarat & directly connected to ISTS network and supplying power to consumer in Gujarat / outside of Gujarat) energy accounting for deviation shall be as per the CERC Regulations.



Provided further that if Wind-Solar Hybrid Generating Project is situated in the State of Gujarat and connected with Inter-State grid through State grid and selling power outside/ inside the State, the energy accounting for deviation settlement shall be carried out wherein the deviation charges shall be either (A) Reference Rate or (B) Normal Rate of Charges for deviation, whichever is higher, as per the provision of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

Explanation: Reference Rate and Normal Rate of Charges shall have the meaning as defined in CERC DSM Regulations from time to time.

Provided that in case of Wind-Solar Hybrid Power projects set up for captive consumption/ sale to third party, the minimum number of time blocks, which shall not be more than 12 time-blocks, for which the consumer shall not change the quantum of power consumed through Green Energy Open Access so as to avoid variations in demand to be met by the distribution licensee.

The Commission has also noted that SLDC has filed Petition No. 2061 of 2022 seeking amendment of the GERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019, which is pending for decision. The Commission will look into the matter and take appropriate decision in this regard.

## **2.5 Clause 3.5.8: Metering point and Interconnection Point**

### **2.5.1 Proposed in Discussion Paper**

The metering and interconnectivity shall be as under:

- a) The metering and interconnectivity shall be as under: Energy generation from wind /solar capacity shall be measured separately at the pooling/sending end sub-station on 15 /5-minute time block by installing four Quadrant ABT compliant meters by the project developers. The project developers shall also have to install Remote Terminal Unit (RTU) and communications facilitated for transferring the real time data to SLDC for its monitoring purpose. Further, four quadrant ABT compliant meter shall be installed on each wind turbine/solar projects. All the meters will be tested in NABL laboratory and duly sealed by DICOMS. Meters shall be installed in presence of





DISCOM/GETCO at the time of commissioning the Wind/Solar project and sign on such documents. The meters shall be AMR compatible so that data can be fetched at GEDA, DISCOM and SLDC remotely.

- b) For the purpose of commercial settlement and energy accounting, the metering point shall be at the receiving end sub-stations of GETCO. The injection of energy from wind/solar capacity shall be worked out separately at the receiving end of GETCO Sub-Stations on the basis of meter reading of common meter installed at receiving end sub-stations appropriately apportioned as per the respective meter reading (active and reactive) of wind and solar ABT (four quadrant) meters installed at respective wind and solar project separately.
- c) In case of Type-A projects (Existing Projects), the metering/injection point shall continue as per existing agreement with GETCO /DISCOM.
- d) In case of Type-B Projects (New Projects) that are AC or DC integrated, the metering point shall be at the receiving end of GETCO Sub-Station. Developer shall have to install the ABT (four quadrant) Main & Check meter at their own cost duly tested sealed and installed in presence of DISCOMs' representatives.
- e) Developer shall install such meters at receiving end of GETCO sub-station as well as at Wind and Solar PV System Installations in view of the different tariff and RPO. In case of common hybrid tariff and common RPO, a single meter as per above specification for both wind and solar system shall suffice.
- f) For Type-A Projects (Existing Projects), both Wind and Solar PV Systems shall use separate set of internal electrical lines and equipment and connect to the pooling/sending-end substations of the Hybrid Projects. The projects shall be mandatorily metered separately. Developers shall have to install ABT (four quadrant) meters at Wind and Solar PV System Installation as well as receiving end of the GETCO Sub-Station at their own cost duly tested sealed and installed in presence of DISCOM.



- g) Internal connectivity between solar and wind capacity prior to pooling/sending end substation shall be allowed for Type B Projects (New Projects) once a common RPO and hybrid tariff are present. Energy metering and communication facility shall be provided by the project developer's hybrid power projects in accordance with the following Regulations/Codes/Orders and their subsequent amendments:
- i. Central Electricity Authority (Installation and Operation of meters) Regulations 2014 and its subsequent amendments
  - ii. Gujarat Electricity Grid Code 2013 and its subsequent amendments
  - iii. GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments
  - iv. GERC Distribution Code 2004 and its subsequent amendments

For purpose of Energy Accounting, all projects shall have to provide ABT compliant (four quadrant) meters at generators and if the power is to be wheeled to consumers' premises, then ABT cum Tariff compatible meter is to be installed at the consumers' premises also. GEDA/GETCO/DISCOMs shall ensure the energy accounting of Active and Reactive energy of the Wind/Solar and/or Hybrid for each consumer/customer. Energy Accounting be done by SLDC.

### 2.5.2 Suggestions/Objections of the Stakeholders

**KPI Global Infra Limited** suggested that under the scheme of Wind Solar Hybrid Project, Wind and Solar System might be connected at same or different interconnection point at pooling/sending end Sub-Station, which may be allowed.

**BA Prerna Renewables Pvt. Limited** suggested to consider exempting the projects being developed for captive users and third-party consumers from the requirement of installation of separate metering arrangement for Wind/Solar PV system at pooling end /sending end Sub-station. This will enable increase in the installation of renewable energy projects in the State.

**Adani Green Energy Limited** submitted that ISTS connected projects being setup in the State of Gujarat need to have a separate provision for administering the connectivity and metering of Solar Wind Hybrid Project and assure that necessary Guideline/ Regulation issued by CERC/CEA is followed.



**SLDC** suggested that Wind/Solar Generator/GEDA/DISCOM/GETCO should ensure that the generator end data and GETCO Sub-Station end data should be available on every Tuesday for the previous week to SLDC through such AMR compatible meters. In case of non-availability of AMR, it will be responsibility of Wind-Solar Generator/GEDA/DSICOM/GETCO to send ABT meter data in encrypted mode to SLDC with other mode of communication as per SLDC procedure & requirement.

**GUVNL** suggested to modify the provision in the para 3.5.8 (d) clarifying that in the absence of common RPO and hybrid tariff, the internal connectivity between solar and wind capacity prior to pooling/sending end sub-station shall not be permitted. Further, addition of wind/solar capacity in the existing solar/wind projects or installation of new wind-solar capacity as a part of hybrid project, the injection of power from wind-solar capacity of the hybrid project shall be at common inter-connection point at pooling/sending end Sub-Station.

### **2.5.3 Analysis and Commission's Ruling**

The Commission finds no merit in the suggestion of KPI Global Infra Limited for allowing wind and solar capacities to be connected at different inter-connection points at the pooling/sending end Sub-Station. Further, the Commission is also not in favour of exempting the separate metering requirement for Wind and Solar PV capacity as proposed by other objector as the Commission has specified separate purchase obligation for Wind and Solar and captive users are also defined as obligated entities under the RPO Regulations notified by the Commission.

The Commission agree with the suggestion of SLDC on the para 3.5.8 (a) of the discussion paper, the meters shall be AMR compatible so that data can be fetched at GEDA, DISCOM and SLDC level remotely. In case of non-availability of AMR, it will be responsibility of Wind-Solar Hybrid Generator /DISCOM/GETCO to send ABT meter data in encrypted mode to SLDC.

The suggestion of GUVNL is addressed in the para 3.5.8 (e) and (f) of the discussion paper. For Type - A Projects (Existing Projects), both Wind and Solar PV Systems shall have to use separate set of internal electrical lines and equipment and connect to the pooling/sending-end Sub-Stations of the Hybrid Projects. Internal connectivity between solar and wind



capacity prior to pooling/sending end Sub-Station shall be allowed for Type B Projects (New Projects) once a common RPO is prescribed by the Commission.

The Commission clarifies that in case of Wind-Solar Hybrid project connected with Inter-State Transmission System (ISTS) network through state network, the provisions related to metering point and interconnection point shall be governed by the provisions of Intra-State Generator provided in this Order. While in case of the Wind Solar Hybrid projects directly connected to ISTS network shall be governed by the provisions of CERC Regulations.

## **2.6 Clause 3.6: Wind-Solar Hybrid System & Power Evacuation**

### **2.6.1 Proposed in Discussion Paper**

#### **1. Hybridization of Type-A Projects (Existing Projects):**

Existing Wind Power or Solar Power Projects Developers, willing to install Solar PV Plant or Wind Turbine Generators respectively, at the existing location, shall be allowed to do so with following conditions:

- i. The total power injection (combined wind and solar) into the grid shall not be more than the transmission capacity/grid connectivity allowed/sanctioned by GETCO for this purpose. In case, addition/augmentation in the existing evacuation system is required as per the system study undertaken by GETCO due to addition of Wind-Solar and Storage capacity, if any, Developers shall undertake such addition/augmentation in the system up to the receiving end sub-station of GETCO at their own cost. However, the primary focus is to optimize the utilization of existing transmission infrastructure and technologies, and design approaches towards minimum augmentation is encouraged.
- ii. The additional solar/wind power from the Hybrid Project may be allowed to wheel power for captive use or for sale of power to a third-party or sale to DISCOMs. For transmission and wheeling of power, the applicable charges and losses shall be as specified in this Order.
- iii. The Developers shall approach GETCO for determining the transmission capacity available to evacuate the additional wind/ solar power or any augmentation that may be required. GETCO shall provide the relevant data about the transmission capacity utilization on its existing network.





## 2 Type-B Projects (New Projects)

- i. The Developers of Hybrid Projects shall establish the evacuation line at their own cost up to the receiving end Sub-Station of GETCO.
- ii. The Developer has option for wheeling of wind and solar power for their captive use or third-party sale or sale of power to the DISCOMs. For transmission and wheeling of power, the applicable charges and losses shall be as specified in this Order.
- iii. Hybrid Project Developer shall approach GETCO for evacuation system planning up to the receiving station.

For both Type - A and Type - B Hybrid Projects, the Developer shall ensure for capacity allocation/sanction of transmission capacity at least equal to installed capacity of wind or solar project, whichever is higher. In case, total injection of power from Hybrid Project exceeds such allocated/sanctioned transmission capacity shall be avoided /restricted by providing necessary protection system so that such incident may not affect real time grid management to grid operators. Further, in the above case such additional power generated from allocated /sanctioned capacity shall be considered as inadvertent flow of power and shall not be considered for commercial settlement.

Wind-Solar and Storage, if any, Hybrid Power Generation System, or the Hybrid Project, means the system of combined generation of Wind and Solar Power and Storage, if any, at existing or new Solar/Wind Power Projects with storage capacity, if any, (or) collocated where injection of wind or solar power is at the interconnection point of the pooling substation of existing windfarms/ sending-end sub-station of existing solar power installations with or without energy storage system.

Under the scheme of wind-solar hybrid power generation, wind and solar PV systems shall be connected at the same interconnection point at pooling/sending-end sub-station. 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, it is desired that:



- i. At the locations of having good wind power potential, the Solar PV capacity to be added as the Solar-Hybrid component could be relatively smaller.
- ii. Similarly, 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 side. Evacuation capacity for the purpose of connectivity and injection of power shall be worked out as follows:

#### **A. For Type-A Projects (Existing Projects)**

- a) Open Access is already granted to the extent of rated capacity of transmission line/Sub-Station of GETCO and injection of power from additional wind/solar capacity to be set up, is restricted up to already granted rated capacity of transmission line/ substation of GETCO. The same shall be allowed without applicability of transmission charges on such additional capacity. However, the transmission losses and wheeling charges/losses shall be made applicable to such capacity as applicable to any other solar or wind project as the case may be. In case total hybrid generation exceeds the transmission capacity limit, it shall be considered as inadvertent injection of power for which no payment or credit shall be given or under any exigency, which requires curtailment of generation, the generation from additional/new wind/solar capacity shall be curtailed first.
- b) There is capacity margin in the existing transmission system/ sub-station of GETCO after taking into account open access already granted to the existing wind/solar project or any augmentation and strengthening of transmission system after receiving-end sub-station is undertaken by GETCO for allocation/sanction of transmission capacity for allowing additional wind/ solar capacity, the transmission charges and losses, and wheeling charges and losses shall be applicable on such additional sanctioned/allocated capacity as applicable to any other Solar/ Wind Project as the case may be. However, if any augmentation in the existing transmission system is required due to addition of such solar /wind capacity, up to receiving end substation of GETCO, the Developers at its own cost shall undertake the same.



## **B. For Type-B Projects (New Projects)**

The Developer of Hybrid Project shall establish a dedicated line at its own cost for evacuation of power up to receiving end sub-station of GETCO as per system study undertaken by GETCO where the Project Developer desires to inject power in the State Grid. From there onwards, GETCO shall ensure transmission system and connectivity.

Transmission charges shall be applicable based on sanctioned/ allocated transmission capacity. However, Developer shall ensure that power injection shall never increase beyond sanctioned/allocated transmission capacity. In case total hybrid generation exceeds the transmission capacity limit, it shall be considered as inadvertent injection of power for which no payment or credit shall be given. Transmission charges and losses, and wheeling charges and losses shall be applicable as applicable to any other open access for wind and solar projects.

### **2.6.2 Suggestions/Objections of the Stakeholders**

**BA Prerna Renewable Pvt. Limited** suggested that the condition of allocation / sanction of transmission capacity at least equal to installed capacity of wind or solar capacity of Hybrid plant, whichever is higher would lead to more inefficiency / under-utilization / sub-optimum utilization of the transmission infrastructure as for supplying higher generation / capacity and utilization factor, higher installation of wind / solar capacity is inevitable. The objector requested for specifying the payment of transmission charges on kWh supplied rather than MW basis.

**Adani Renewable Energy Limited** submitted that the new Hybrid power projects are likely to come up with storage facilities or designed in way to have storage facilities in future. For such projects, the installed solar and wind capacities will be higher to charge the storage capacities. Therefore, requirement of having sanctioned transmission at least equal to higher of installed capacity of solar or wind will lead to non-optimal utilization and wastage of transmission capacity. It is submitted that MNRE wind solar hybrid guidelines also do not have such restriction on sanction of transmission capacity. For any excess generation which may occur at some point of time when both solar and wind generation may peak simultaneously and generation is more than transmission capacity allotted, it should be the responsibility of



Wind-Solar Hybrid Developer to back down/clip the excess generation by providing necessary protection system in-terms of curtailing generation beyond the allowed evacuation capacity and hence injection of excess generations gets restricted. The suitable provisions for the same are already covered in the draft.

**GETCO suggested** to modify the para 3.6(i) of the discussion paper by inclusion of following additional points:

*GETCO/STU will check strengthen scheme required for the same on the request of such applicant. If such developer agrees to create required strengthening elements of intra state scheme at their cost, GETCO/STU may grant additional evacuation at same substation subject to implementation of required strengthening scheme element by hybrid developer at matching timeframe. By granting approval for strengthening of substation by GETCO/STU for additional evacuation at particular substation shall not be ground for getting any extension in SCoD of the project or relaxation from liquidated damage payable or any other consequences under the PPA/contract including termination of PPA/contract.*

Similarly, modifications are suggested to para 3.6(ii) to include following additional points:

*The developer shall select the location to evacuate the additional wind/solar power or any augmentation that may be required on the basis of data provided by GETCO/STU on their website for all the possible location where hybrid capacity will be identified. GETCO/STU shall check strengthening scheme required for the same on the request of developer. If such developer agrees to create required strengthen element of intra state scheme at their cost, GETCO/STU may allow additional evacuation at the same substation subject to implementation of required strengthening scheme by hybrid developer at matching timeframe. This shall not be ground for getting any extension in SCOD of the project or relaxation in any term of the PPA /contract. The developer of the hybrid project may develop dedicated transmission line of power evacuation capacity as specified. In case the developer not able to utilize the dedicated transmission line and bays, it may share with other developers with a view of optimum utilization of transmission system.*





### 2.6.3 Analysis and Commission's Ruling

The Commission has carefully gone through the submission made by GETCO and other stakeholders. The Commission do not find merit in the submission of the stakeholder for not imposing the condition of having sanctioned/allocated transmission capacity at least equal to higher of installed capacity of solar or wind from the point of view of grid safety and economic operation of the grid.

With regard to GETCO's submission regarding conversion of existing Wind/Solar projects into hybrid projects involving strengthening / augmentation of transmission infrastructure and Sub-Station should not be considered as a ground for getting any extension in SCOD of the project or relaxation in any term of the PPA /contract, the Commission is of the opinion that if conversion of existing Wind/Solar projects into hybrid projects involves strengthening/augmentation of transmission infrastructure and Sub-Station, such aspects shall be governed by the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 read with provisions of Transmission and / or wheeling Agreement and / or Power Purchase Agreement with Distribution licensee, and provision of this Order.

As far as the objection/suggestion of the GETCO that even though there is no evacuation margin or facility available at given existing sub-station of GETCO, the project developer may be allow to carryout strengthening work at its cost as may be required by GETCO subject to condition that there shall not be extension in SCoD or change in tariff is concerned, the Commission note that the aspects related to grant of connectivity and approval for evacuation of power from the Power Project shall be governed by the provisions of procedure/guideline issued by the GETCO with approval of the Commission, which needs to be strictly followed. Further, system study is required to be undertaken by GETCO prior to grant of connectivity and evacuation facility through the concerned network. Moreover, the aforesaid aspects are applicable for grant of Open Access for all RE based power projects as well as conventional power projects. Thus, the aforesaid suggestion is premature and therefore cannot be considered in the present proceedings.

In view of above, the Commission decides to retain the power evacuation related provisions as proposed in the discussion paper with above observations of the Commission.



## 2.7 Clause 3.8: Transmission and Wheeling Charges

### 2.7.1 Proposed in Discussion Paper

The Commission has proposed following norms for wheeling of power from Wind Solar Hybrid Projects for third party sale/captive use during the control period.

#### Third Party Sale

- a. In case of injection of the electricity at 66 KV level or above and drawl of electricity up to 66 KV level, the transmission of energy from the injection point to drawl place shall be allowed by paying transmission charges and losses determined by the Commission.
- b. In case of injection of energy at 66 KV level and drawl of energy at 11 KV voltage level in such case, wheeling of Power for third party sale from Hybrid power projects shall be allowed on payment of transmission charges applicable on sanctioned / allocated transmission capacity, transmission losses on energy feed basis, wheeling charges and losses on the energy fed into grid as measured at receiving Sub-Station of GETCO, as applicable to normal open access consumer.
- c. The Cross Subsidy Surcharge and Additional Surcharge is applicable to the consumer, as per the provisions of the Green Energy Open Access Rules and its subsequent amendments thereto notified by Ministry of Power, Govt. of India read with GERC (Green Energy Open Access) Regulations and as amended from time to time.

#### Wheeling of power for Captive Use

- a. In case of injection of energy is at or above 66 KV voltage level and drawl of such energy up to 66 KV voltage level in such case, normal transmission charges and losses shall be applicable.
- b. In case of injection at 66 KV and drawl at 11 KV voltage level, wheeling of electricity generated from the Hybrid Project to desired location(s) within the State shall be allowed on payment of transmission charges and transmission losses as applicable to normal open access consumer and wheeling charges and distribution losses of the energy fed to the grid at the receiving end sub-station of GETCO, as applicable to normal Open Access Consumers.



Provided that the entity consuming energy generated from Hybrid project for captive consumption shall require to establish/prove on annual basis that the ownership in Captive Generating Plant and consumption of such energy shall fulfil the necessary conditions stipulated in Electricity Rules, 2005 with the Distribution licensee in whose area consumer consumed energy generated from hybrid power projects. Failure to fulfil the aforesaid two conditions, such captive consumption lose the status of captive plant and it shall be qualified as supply to third party by generator and the benefits granted to captive consumption shall be withdrawn for that Financial Year and it attracts the applicability of the Cross-Subsidy Surcharge and Additional Surcharge applicable to normal Open Access Consumer prevailing at relevant time as per this Order.

The captive consumers shall provide the details of ownership in the captive generating plant and generation as well as consumption of energy from captive generating plant to the distribution licensee in whose area of supply captive consumer is situated. The Distribution Licensee shall verify the status of the captive consumers on annual basis. In case of failure to the status of captive generating plant and captive use of energy by the consumer, the action may be initiated as stated above.

### **Wheeling of power to more than one location**

Hybrid Project Developers, who desire to wheel electricity to more than one location for captive use/third-party sale, shall pay 5 paise per unit on energy fed in the grid as measured at receiving end sub-station of GETCO, to the concerned DISCOM in whose area power is consumed in addition to above mentioned transmission charges and losses, as applicable.

Provided that in all above cases, total injection of power from the Hybrid Project exceeds such allocated/sanctioned transmission capacity, such power shall be considered as inadvertent flow of power and shall not be considered for any commercial settlement.

### **2.7.2 Suggestions/Objections of the Stakeholders**

**Continuum Green Energy India Pvt. Limited** submitted that 50% concession in transmission charges for Wind Solar Hybrid Projects, who are selling energy through third party route, shall be provided so that such Wind Solar Hybrid projects shall be able to compete



with WSH captive projects, which will ultimately lead to competition and efficiency in the WSH Projects.

**KPI Global Infra Limited** submitted that in case of injection of energy at 66 KV and drawl at 11 KV for third party sale shall be allowed on payment of transmission charges applicable on sanctioned/allocated transmission capacity, transmission losses on energy feed basis, 50% wheeling charges on energy credited to the recipient end, 50% of wheeling losses on energy feed into the grid measured on receiving end substation of GETCO. The stakeholder further submitted that the Cross Subsidy Surcharge & Additional Surcharge either NIL or 50% of as applicable to normal OA consumers should be applicable in case hybrid projects. For captive project wheeling charges and wheeling losses should be NIL.

**IWTMA** suggested for levy of transmission charges on Energy fed to the grid basis i.e. in terms of Rs. /Unit basis instead of allotted capacity basis, exemption of 50% on wheeling charges and losses should be continued in the next control period.

**InWEA** submitted that Cross Subsidy Surcharge and Additional Surcharge should be kept, 50% of as applicable to normal Open Access Consumers for third party sale.

**Cleanmax Enviro Energy Solution Pvt. Limited** submitted that as all the regulatory promotional and concessional benefits have been proposed to be removed from the generation and consumption of renewable energy in the State and every service is at full charges, the concession of 50% in the Cross Subsidy Surcharge may be balancing act to enable state power utilities to avail complimentary RPO benefits. It is submitted that to balance the complimentary benefits drawn by the State Power Utilities by way of fulfilment of the complimentary RPO from the renewable energy generation /consumption by the non-obligated entities under open access a part of the benefit may be granted to the generation / consumption of renewable energy in the State by virtue of rebate in the Cross-Subsidy Surcharges for the power consumed under third party.

The stakeholder submitted that in line with the recommendation of FoR, the Wheeling charges shall be payable on the basis of contracted Capacity/Scheduled Load or actual power flow whichever is higher. For Open Access for a part of a day, the wheeling charges shall be payable on prorata basis.





**Aditya Birla Renewables Limited** submitted that open access permission equivalent to total capacity of Wind + Solar Hybrid Project, for examples, for 20 MW Hybrid project (20 MW Wind & 20 MW Solar), OA permission should be allowed to 40 MW and accordingly, consumer will pay OA charges.

**First Energy Pvt. Limited** submitted that the discussion paper has not provided any concession on payment of system charges/losses in case the power is supplied from a Hybrid power plant to the Open Access consumer i.e. third-party consumer or captive user. This is departure from previous control period where only 50% of wheeling charges and wheeling losses, were payable in case of power supply from a hybrid power plant to a third-party open access consumer and/ or captive user.

**O2 power requested** to remove additional 5 paisa/kWh charges in case supply of power to more than one location. In addition, they requested to provide 50% concession on wheeling charges and loss for supply of power for captive consumption in the State of Gujarat.

**Vena Energy** submitted that OA charges recommended under MoP's Green Energy OA Rules 2022 should be levied in case of third-party sale/captive use.

### **2.7.3 Analysis and Commission's Ruling**

The Commission has gone through the suggestion received from various stakeholders. The Commission also notes that State Government has notified Renewable Energy Policy, 2023. Further, the Commission also notes that Ministry of Power has notified Green Energy Open Access Rules, 2022. The Commission has notified Green Energy Open Access Regulations, 2024. The Commission considers that for the promotion of Green Energy projects, the benefits be granted in such a manner that it should not result in burden to the end consumer. The Commission has to strike balance between the captive / third party generator supplying/ using electricity in the license area of DISCOM and its impact on the business of the distribution licensees.

In view of this, the Commission do not find any merit for allowing concessional transmission / wheeling chargers and losses as it will burden other consumers. However, the Commission decides to allow concessional Cross Subsidy Surcharge and Additional Surcharge, if any, for a



specific Open Access Transaction which result in benefit of both the RE generator and the distribution utility. Accordingly, the Commission decides to modify the relevant clause of this order as under:

### **Third Party Sale**

- a. In case of injection of the electricity at 66 KV level or above and drawl of electricity up to 66 KV level, the transmission of energy from the injection point to drawl place shall be allowed by paying transmission charges applicable on sanctioned/allocated transmission capacity and transmission losses as determined by the Commission from time to time, as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time.

In case of injection of energy at 66 KV level and drawl of energy at 11 KV voltage level in such case, wheeling of Power for third party sale from Hybrid power projects shall be allowed on payment of transmission charges applicable on sanctioned/allocated transmission capacity, transmission losses on energy feed basis, wheeling charges and losses on the energy fed into grid as measured at receiving Sub-Station of GETCO, as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time.

- b. The Commission decides to promote the third-party sale/consumption of renewable / green energy by allowing 25% concession in the Cross Subsidy Surcharge and Additional Surcharge, if any, wherein the RE generator and consumer does not claim RE attribute and allow distribution licensee to avail the same for RPO compliance.
- c. No concession in the Cross Subsidy Surcharge shall be allowed to the RE generator who are selling power under third party sale and utilizing RE attribute for RPO compliance of the consumer or the projects are registered under REC mechanism. They shall be liable to pay 100% Cross Subsidy Surcharge and Additional Surcharge, if any, as



determined by the Commission read with the provisions of GERC Green Energy Open Access Regulations.

- d. The provisions related to Cross Subsidy Surcharge and Additional Surcharge shall be governed as per the MOP Rules and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time.

### **Wheeling of power for Captive Use**

- a. In case of injection of energy is at or above 66 KV voltage level and drawl of such energy up to 66 KV voltage level, in such case the transmission of energy from the injection point to drawl place shall be allowed by paying transmission charges on sanctioned / allocated transmission capacity and transmission losses determined by the Commission from time to time as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time.
- b. In case of injection at 66 KV and drawl at 11 KV voltage level, wheeling of electricity generated from the Hybrid Project to desired location(s) within the State shall be allowed on payment of transmission charges applicable on sanctioned/allocated transmission capacity and transmission losses, wheeling charges and losses of the energy fed to the grid at the receiving end Sub-Station of GETCO, as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time.

Provided further that the person consuming energy generated from Hybrid project for captive consumption shall require to provide the details of ownership in the captive generating plant and generation as well as consumption of energy from captive generating plant to the distribution licensee in whose area of supply the captive consumer is situated, on annual basis, in accordance with the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 to ensure that the necessary conditions stipulated in Electricity Rules, 2005 read with provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 is fulfilled by such captive generating plant and consumption by



captive users. Failure to fulfil the aforesaid conditions, such consumption shall lose the status of captive consumption and it shall be qualified as supply by third party by generator and the benefits granted to captive consumption shall be withdrawn for that Financial Year and it shall attract the applicability of the Cross-Subsidy Surcharge and Additional Surcharge, if any, as applicable to third party green energy open access transaction as per provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time along with delayed payment surcharge thereon.

On receiving of documents/evidence from the captive consumer by the distribution licensee, the distribution licensee shall verify the same in compliance of provisions of Act, Rules and Regulations for captive status of the generator and consumption of energy from such plant and refer the matter to the Commission in case non-compliance of captive status by the generator/captive consumer and also claim the recovery of charges payable by such consumer on account of not fulfilling of captive generating plant status by the generator or captive consumer.

The Commission shall verify the fact and take the final decision regarding continuation of the captive status of the plant and consumption of energy from such plant as captive consumption for the respective financial year.

The various provisions related to Captive Generating Plant (CGP) and consumption of energy from such plant as stipulated in the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 shall be applicable for Wind-Solar Hybrid Power Project.

### **Wheeling of power to more than one locations**

Wind-Solar Hybrid Project Developers, who desire to wheel electricity to more than one location for captive use/third-party sale, shall be allowed on payment of 5 paise per unit on energy fed into the grid as measured at receiving end Sub-Station of GETCO to the concerned DISCOM in whose area power is consumed in addition to above mentioned transmission charges & losses and Wheeling charges & losses, as applicable.





Provided that in all above cases, total injection of power from the Hybrid Project exceeds such allocated/sanctioned transmission capacity, such power shall be considered as inadvertent flow of power and shall not be considered for any commercial settlement.

## **2.8 Verification of Status of Captive Plant**

### **2.8.1 Proposed in Discussion Paper**

“..... The captive consumers shall provide the details of ownership in the captive generating plant and generation as well as consumption of energy from captive generating plant to the distribution licensee in whose area of supply captive consumer is situated. The Distribution Licensee shall verify the status of the captive consumers on annual basis. In case of failure to the status of captive generating plant and captive use of energy by the consumer, the action may be initiated as stated above...”

### **2.8.2 Suggestions/Objections of the Stakeholders**

**IWTMA** submitted that the Captive status to be checked by GERC and DISCOM as per the Electricity Rules, 2005. The stakeholder further requested that a deadline for verification of captive status should be fixed and requested to issue clarification in case of difference of opinion between DISCOM and Captive Owner, to approach GERC in such case to adjudicate the matter.

**InWEA** submitted that their Commission could keep a deadline for verification of captive status and kindly provide provision in case of difference of opinion between DISCOM and Captive Owner, to approach GERC in such case to adjudicate the matter.

### **2.8.3 Analysis and Commission's Ruling**

The Commission would like to clarify that the distribution licensee shall collect the data and monitor the ownership in the captive generating plant and generation as well as consumption of energy from captive generating plant as provided in the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

The manner of verification of Captive Status of Captive Generating plant and consumption, timelines for verifications, consequences of default, providing payment security mechanism



against applicable Cross Subsidy Surcharge and Additional Surcharge, if applicable, etc. shall be governed as per the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

## 2.9 Clause 3.9: Banking of Surplus Energy

### 2.9.1 Proposed in Discussion Paper

Like Wind & Solar technology, as a promotional measure, the Commission endeavour to continue to extend the banking facility to Wind Solar and Storage, if any, Hybrid Power Projects set up under OA regime for captive transaction or third-party, transaction whatever may be the case. The settlement of energy from the hybrid projects shall be allowed on the billing cycle basis. The settlement of energy in case of Hybrid power projects set up under OA regime shall be allowed on peak and off-peak hours' basis.

As per Ministry of Power, Green Energy Open Access Rules 2022, banking is permitted on billing cycle basis on payment of charges to compensate additional cost, if any to the distribution licensee. Banking charges shall be applicable as per provisions under MoP's Green Energy Open Access Rules 2022 read with GERC Green Energy Open Access Regulations in force and as amended from time to time. Further, the permitted quantum of banked energy by the Green Energy Open Access Consumers shall be at least thirty percent of the total monthly consumption of the electricity from the distribution licensee by the consumer.

### 2.9.2 Suggestions/Objections of the Stakeholders

**Continuum Green Energy India Pvt. Limited** requested 12 months banking should be given by the Commission by considering Wind profile in the State and peak seasons.

**Drashta Power Consultant Pvt. Limited** submitted that definition of banking of energy should be added to tariff framework. It should be only surplus energy generated and not utilized during each 15 minutes' time blocks and not the total generated energy. The stakeholder requested not to keep restriction on total energy banked.



**IWTMA and InWEA submitted** to adopt the methodology suggested by FoR and allow the energy banked during off-peak TOD slots to draw during peak TOD slot by paying additional 2% banking charges.

**GUVNL** suggested to incorporate enabling provisions in the Order providing option to consumers to avail banking facility so as to reduce strain on DISCOMs to some extent. It is imperative that settlement of energy in case of Wind as well as Solar capacity set up under Open Access is to be allowed on peak and off-peak hour basis so as to minimize imbalance in generation and consumption and to ensure smooth grid operation. GUVNL requested to stipulate banking charge methodology for determination of banking charge in the Order itself to ensure adequate recovery of cost incurred by DISCOMs towards arranging storage/flexible generation to entail banking facility for the consumers availing Open Access from Wind-Solar Hybrid Projects.

**BA Prerna Renewables Pvt. Limited** requested to provide clarity on the working of the banking charges. They suggested that the banking charges should be applicable only on the units consumed by the developer rather than the entire banked energy.

**Indian Development and Environment Agency** suggested that permission for banking in the hybrid policy should not be based on electricity consumption but rather on generation by the renewable energy source, that is supplying the consumer and 30% to 40% of the total generation of the hybrid generation tied up with the consumer should be permitted for banking, regardless of DISCOM consumption.

**Ultratech Cement Limited** suggested that the terms 'Banking Cycle' and 'Banked Energy' be define clearly.

### 2.9.3 Analysis and Commission's Ruling

The Commission decides that the provisions related to Energy Banking facility & banking charges, methodology for settlement of banked energy and treatment for un-utilised banked energy at the end of banking period etc., shall be governed by the MoP's Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules 2022 and GERC's Green Energy



Open Access Regulations, 2024 and its subsequent amendments, if any. Accordingly, necessary modifications are made in the Order.

## **2.10 Clause 3.10 Energy Accounting**

### **2.10.1. Proposed in Discussion Paper**

The discussion paper proposed following Energy Accounting related provisions for captive as well as third party open access transactions.

- 1) **Case 2 (a):** The project which are not registered under REC mechanism and availing banking facility, the energy accounting shall be carried out by energy injection worked out at the receiving end Sub-Station of GETCO, shall be set-off against the consumption during the consumers' billing cycle.
  - i. For net import of power, DISCOM shall charge applicable tariff of respective category to the Consumer including fixed/ demand charge, energy charges, peak charge, other charges/ penalty etc. as applicable to other Consumers.
  - ii. Surplus power available, after giving set-off, at the end of billing cycle shall not be entitled for any compensation.
  - iii. No carry forward of surplus energy, if any, available at the end of billing cycle.
  - iv. The surplus energy, if any, available at the end of billing cycle, is eligible for REC. The distribution licensees shall certify the same as per MoP's Green Energy Open Access Rules 2022 and its subsequent amendments thereto.
  - v. The consumer/project developers shall require to pay banking charges as specified in the Green Energy Open Access Rules notified by the Ministry of Power, Government of India read with provisions of GERC (Green Energy Open Access) Rules in force and as amended from time to time.
  - vi. The consumer/project developers not desired to utilise the green energy attributes (RE) component for fulfilment of RPO, the distribution licensee shall have considered such consumed energy of the consumers as fulfilment of its different types of RPO based on such energy consumed.





vii. The consumer who utilises RE (Green Energy) component for fulfilment of its RPO percentage, in such case, consumption of RE (Green Energy) be qualified as fulfilment of RPO.

2) **Case 2 (b):** For hybrid projects registered under REC mechanism and supply power within the State, the Energy accounting shall be based on a 15-minute time block-basis.

i. For net import of power, the DISCOM shall charge applicable tariff of respective category to the Consumer including fixed/ demand charge, energy charges, peak charge, time of use charges, other charges/ penalty, etc. as applicable to other Consumers as per tariff orders of the Commission.

ii. Surplus power, after giving set off, shall not be eligible for any compensation.

### 3) **For Type-A Projects (Existing Projects)**

The energy accounting for consumption of power for captive use/third party sale from existing wind/solar project shall be governed by existing Regulations/Orders/Wheeling Agreement prevalent at the time of commissioning of the plant. If these provisions are different, the above provisions shall be applicable only for wheeling of power from new/additional wind/solar capacity, as a part of Hybrid Projects.

#### 2.10.2. Suggestions/Objections of the Stakeholders

**Continuum Green Energy India Pvt. Limited** submitted that the surplus power after set off should be compensated at Rs 1.75/kWh.

**BA Prerna Renewables Pvt. Limited** submitted that as the surplus energy at the end of billing cycle is eligible for REC, the same must be accrued to the developer rather than distribution licensee.

**GVNVL** submitted that as per the provisions of CERC REC Regulations it is pre-requisite to register the project under REC mechanism with the Central Nodal Agency to avail Renewable Energy Certificate (REC). Hence the distribution licensee is not authorized to certify Renewable Energy Certificate. Further, it is pointed out that the provision at Para No. 3.10 (1) (iv) which provides for grant of RE certificate for surplus energy available at the end of billing



cycle, is contrary to the provisions of Clause No. 3.10 (2) - Case 2 (b) as to avail RE certificate projects have to registered under REC mechanism and therefore the settlement of energy on billing cycle basis is not applicable.

### **2.10.3. Analysis and Commission's Ruling**

The Commission has gone through the suggestions/comments received from the stakeholders with regard to Energy Accounting methodology proposed in the discussion paper. The Commission decides that the provisions related to Energy Accounting, Treatment of Banked Surplus Energy remained surplus after banking period consumption etc for Wind-Solar Hybrid Power project shall be governed as per the provisions of MoP's Green Energy Open Access Rules 2022 and its subsequent amendments thereto and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time. Accordingly, necessary modifications are made in the Order.

#### **In case of Type-A Projects (Existing Projects),**

In case of conversion of existing Wind or Solar capacity, (i.e. commissioned prior to 20.06.2023) set up for captive use or third party sale, into Hybrid Power Project by adding new Solar or Wind capacity, the provisions related to transmission and/or wheeling charges and losses, Cross Subsidy Surcharge, Additional Surcharge, if any, Banking facility and charges, energy accounting etc. for consumption of energy from existing wind / solar capacity shall be governed by existing Regulations/Orders/wheeling agreement prevalent at the time of commissioning of the existing Wind/Solar Plant. The new / additional Wind or Solar capacity commissioned after 19.06.2023, as a part of Hybrid Projects shall be governed by Regulatory Framework specified by the Commission in this Tariff Order read with GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

### **2.11 Clause 3.13: CDM Benefits**

#### **2.11.1 Proposed in Discussion Paper**

It is proposed that the sharing of CDM benefits or any other benefit such as carbon credit or any other benefits under CDM or any other mechanism under any provisions from any source providing such benefits to the Solar-Wind Hybrid Power Project for which it shall qualify to



receive such benefit may apply to the concerned authority to avail/receive the benefit for the project. The benefits which shall be receivable or received shall be shared with the procurer of power and/or licensee as under:

- (i) 100% of the gross proceeds on account of such CDM benefit or any other benefit such as carbon credit or any such benefit or any other mechanism from any source or agency to be retained by the project Developer in the first year after the date of commercial operation of the generating station.
- (ii) In the second year, the share from above benefits of the beneficiaries like power procurer/licensee shall be 10% which shall be progressively increased by 10% every year till it reaches 50% where after the proceeds shall be shared in equal proportion by the Generating Company and the beneficiaries like power procurer/licensee.”
- (iii) In case of PPA signed under competitive bidding process, the sharing of benefits received by the Hybrid project shall be as per terms and conditions of bid documents read with the PPA.

### 2.11.2 Suggestions/Objections of the Stakeholders

**IWTMA and InWEA** submitted that the sharing of CDM benefit, if any, shall be applicable only after the sale proceeds from CERs are received by Project Developer and not from date of commissioning. The stakeholders requested to clarify that the sharing of CDM benefit, if any, shall be applicable only after considering transaction costs borne by the CDM project proponent. It is requested to continue earlier provision of allowing developer to claim 100% CDM benefits for projects commissioned under Competitive Bidding Process.

**GUVNL** requested that in respect of existing Wind/Solar Capacity, the sharing of CDM benefit shall allow to be governed as per the terms of the respective Power Purchase Agreement.

**BA Prerna Renewables Pvt. Limited** submitted that the developers are building in the benefit from CDM or such other mechanism in their tariff working to be competitive and providing competitive tariff to the bidding agency. Accordingly, such benefit should only be retained by the developer and not the bidding agency.



**Aditya Birla Group** submitted that Sharing of CDM benefits or any other such benefits clause should not be applicable for Captive/Third party OA Hybrid project.

**Ultratech Cement Limited** submitted that sharing of CDM benefit shall not be applicable on Captive/Group Captive Open Access Projects in which Generating Company/Captive Consumer/Consumer have choice to use CDM benefits of the project as per their internal Arrangement/Contracts/PPA signed between Generating Company and Consumer.

**Vena Energy** submitted that the Commission may specifically mention in the applicability of this provision on the projects which are meant to supply power to DISCOM or licensee, to avoid any ambiguity at later stage.

### **2.11.3 Analysis and Commission's Ruling**

Commission is of the opinion that in case of Wind-Solar Hybrid Projects selling power to distribution licensee under the PPA, the CDM benefits or any other benefit such as Carbon Credit or any other benefits under CDM or any other mechanism under any provision from any source providing such benefits to the Solar-Wind Hybrid Power Project developer is an additional benefit over and above the cost incurred in the project and the same should be share with the distribution licensee as proposed in the discussion paper. In case of PPA signed under competitive bidding process, the sharing of benefits received by the Hybrid project shall be as per terms and conditions of bid documents read with the PPA. Sharing of CDM benefits or any other benefit in case of Wind Solar Hybrid Project set up for captive use/third party sale, shall be governed by terms and conditions of respective agreements between the parties. The Commission decides to retain the CDM benefit sharing mechanism as proposed in the discussion paper.

## **2.12 Clause 3.10: Security Deposit**

### **2.12.1 Proposed in Discussion Paper**

The Hybrid Power Developer setting up project shall be required to provide Bank Guarantee @ ₹ 15 lakhs per MW to GETCO based on allotment of transmission capacity and in case the developer fails to commission the Hybrid capacity within the time period mentioned hereunder, GETCO shall encash the Bank Guarantee.





The Developer shall commission new Hybrid capacity at least 10% of the allotted capacity within one month of charging of evacuation line, failing which the Developer shall be liable to pay long term transmission charges for 10% of allotted capacity till such 10% of allotted capacity is commissioned.

| <b>Sr. No.</b> | <b>Hybrid Capacity in MW</b> | <b>Period for commissioning the entire evacuation line along with bays and metering system</b> |
|----------------|------------------------------|--|
| 1.             | 1 MW to 100 MW               | 1.5 years from date of allotment of transmission capacity                                      |
| 2.             | 101 MW to 200 MW             | 2 years from date of allotment of transmission capacity  |
| 3.             | 201 MW to 400 MW             | 2.5 years from date of allotment of transmission capacity                                      |
| 4.             | 401 MW to 600 MW             | 3.5 years from date of allotment of transmission capacity                                      |

Provided that with prior approval of the Commission, GETCO shall issue extension on case to case basis to the Developers if they fail to commission the entire evacuation line along with bays and metering system within the stipulated time period due to unforeseen reasons.

In case of State level bid, the Commission shall approve the bid/PPA documents when the same shall be submitted before Commission for its approval. Long-term transmission charges are applicable as decided by the Commission in the GETCO's Tariff Order from time to time.

### **2.12.2 Suggestions/Objections of the Stakeholders**

**KPI Global Infra Limited** submitted that the Bank guarantee should be kept at Rs. 5 lakh/MW based on allocated capacity.

**IWTMA and In WEA** submitted that no project developer willfully delays the project, considering its own interest. Hence, it is requested the Commission to propose the Bank Guarantee as Rs. 5 lakhs per MW.

**BA Prerna Renewables Pvt. Limited** submitted that the proposed rate of bank guarantee is substantially higher even if they compare the same with the standalone wind or standalone



solar projects. It is requested to consider for reducing the value of the security deposit to align with such other projects.

**Adani Green Energy Limited** requested to align the bank guarantee as per CERC GNA Regulations, where the same is capped at Rs. 2 lakhs per MW.

**Aditya Birla Group** submitted that GETCO should allow extension at least by 6 months to developer in case it fail to commission the project in stipulated time after analysis the project progress. In case, there is no progress then GETCO can encash the BG.

**First Energy Pvt. Limited** submitted that under the previous Tariff Order, security deposit was charged at the rate of Rs. 3 lakh MW, which has now been substantially increased to Rs. 15 lakhs/ MW. It is requested to reconsider the same.

**GETCO** proposed that developer shall commission new Hybrid capacity at least 10% of the allotted capacity within one month of charging of evacuation line. Developer shall require to open the Letter of Credit of above capacity before charging of the line as a security deposit for payment of such charges. Further, developer shall Commission at least 50% of the allocated capacity within six months of charging of evacuation line, failing which, the Developer shall be liable to pay long term transmission charges for 50% of allotted capacity till such 50% of allocated capacity is commissioned. Developer shall require to open the Letter of Credit of above capacity before expiry of six months from charging of the line as a security deposit for payment of such charges.

Further, developer shall commission 100% of the allocated capacity within One year of charging of evacuation line, failing which, the Developer shall be liable to pay long term transmission charges for 100% of allotted capacity till such 100% of allocated capacity is commissioned. Developer shall require to open the letter of credit of above capacity before expiry of one year from charging of the line as a security deposit for payment of such charges. Balance/entire capacity shall be required to be commissioned within two years of the charging of evacuation line, failing which STU shall cancel the capacity allotment to the extent of capacity not commissioned and the developer shall have no claim on such capacity. GETCO proposes the period for commissioning the entire evacuation line along with bays and metering system as below:



| <b>Sr. No.</b> | <b>Voltage Class of Connectivity</b> | <b>Period for commissioning the entire evacuation line along with bays and metering system (from the date of issuance of Estimate)</b> |
|----------------|--------------------------------------|--|
| 1.             | 66 kV                                | 1.5 years from date of allotment of transmission capacity  |
| 2.             | 132 kV                               | 2 years from date of allotment of transmission capacity  |
| 3.             | 220 kV                               | 2.5 years from date of allotment of transmission capacity  |
| 4.             | 400 kV                               | 3.5 years from date of allotment of transmission capacity  |

### 2.12.3 Analysis and Commission's Ruling

The Commission has gone through the submission of GETCO and other stakeholders. The Commission noted the provisions under Gujarat Renewable Energy Policy 2023 notified on 04.10.2023 and decides to modify the Clause No. 3.10 of Discussion Paper as below:

The Hybrid Power Project Developer shall be required to provide Bank Guarantee @ ₹ 10 lakhs per MW to GETCO based on allotment of transmission capacity and in case the Developer fails to commission the Hybrid capacity within the time-period mentioned hereunder, GETCO shall encash the Bank Guarantee.

| <b>Sr. No.</b> | <b>RE capacity in MW</b> | <b>Period for commissioning the entire evacuation line along with bays and metering system</b> |
|----------------|--------------------------|--|
| 1.             | 1MW to 100 MW            | 12 months from the date of allotment of transmission capacity                                  |
| 2.             | >100 MW to 200 MW        | 15 months from the date of allotment of transmission capacity                                  |
| 3.             | >200 MW to 400 MW        | 18 months from the date of allotment of transmission capacity                                  |
| 4.             | >400 MW to 1000 MW       | 24months from the date of allotment of transmission capacity                                   |

The Wind-Solar Hybrid Project Developer shall ensure and prove that the Evacuation System consist of Transmission and /or Distribution System shall be ready prior to SCOD or aforesaid timeframe, whichever is earlier. Failure to it, the project developer is not eligible to get any waiver in Liquidated Damages payable by it, in terms of respective Agreement/ PPA.

The Wind-Solar Hybrid Power Project Developer shall commission the project for at least 10% of the allotted capacity within one month of charging the evacuation line or as per timeframe stipulated table above, whichever is earlier, failing which, the Developer shall be liable to pay long-term transmission charges for 10% of the allotted capacity until such 10% of the allotted capacity is commissioned.



The balance 90% capacity shall require to be commissioned within one year of charging of evacuation line or as per timeframe stipulated above, whichever is earlier, failing which STU shall cancel the connectivity and Open Access granted, to the extent of capacity not commissioned and the RE developer shall have no claim on such capacity and pay relinquishment charges as determined by the Commission. Further, STU shall include such cancelled capacity in the list of spare available capacity for RE integration to be published on their website for prospective consumers.

If the Wind-Solar Hybrid Project Developer (as Generator / Consumer/ Licensee) fails to Commission the entire allocated evacuation system along with bays and metering System within stipulated time-period due to unforeseen reasons, they may approach to the Commission seeking for extension of time period.

In case of Wind-Solar Hybrid Project set up under competitive bidding route, in that case the aforesaid provision shall be governed by the provisions of approved bid documents /PPA.

### **2.13 Clause 3.15 & 3.16: Integration of Wind Solar Hybrid Project and Battery Energy Storage to the grid commissioning of Hybrid Project**

#### **2.13.1 Proposed in Discussion Paper**

After following the procedure of integration of Hybrid Project with grid, the commissioning of Hybrid Projects shall be followed. “Commissioning” with respect to the Hybrid project shall be certified by the GEDA in the presence of GETCO and distribution licensee representative. GEDA should ensure that all equipment as per MNRE approved list of Solar panel manufacturers and WTG manufacturers of rated capacity and as per Indian Standards on Renewable Energy notified by BIS has been installed and energy has flown into the grid and recorded in the energy meters installed at project site and witnessing of such generation of electricity by representative authorised by DISCOM/GETCO. GEDA shall co-ordinate with DISCOMs/GETCO for fixing date of commissioning of plant and visit and decide the same. The representatives of GEDA, GETCO and distribution licensees shall sign on the commissioning of project. Non-signing of documents of commissioning of Hybrid Projects by any of the representative of above entity is not qualify for commissioning of the project. The commissioning certificate





consists of the details of the Wind Turbine and Solar modules and inverter details. Moreover, GEDA shall also ensure about the solar modules, details of RFID, modules.

Further, it shall also ensure that generation data from the hybrid project shall also transferred in the real time basis through RTU to SLDC.

### 2.13.2 Suggestions/Objections of the Stakeholders

**IWTMA & InWEA** submitted that for further better implementation of the project, the stakeholders requested to define a definite time period (in days) post application for commissioning so that such visits can be done within a limited timeline as per prudent business practice.

**02 Power** requested for specifying timeline for visit of GEDA/GETCO/DISCOM for commissioning of project to avoid delay.

**SLDC** proposed following list of documents to be submitted to SLDC for first time charging:

- Covering letter
- Name of pooling station, installed capacity, connected GETCO/Transmission utilities substation.
- Proposed date of synchronization of renewable pooling station with Intra State Grid.
- Details of contact person, Name, designation mobile no, email for day to day as well as commercial communication purpose.
- Details of first-time grid connection charge to be paid online at SLDC.
- DISCOM name for allocation of power / type of contact in detail.
- GEDA registration application for installation for renewable generator / pooling station regarding specific under which policy generator installed.
- Approval obtained from various statutory agencies.
- COD letter of GEDA.

### 2.13.3 Analysis and Commission's Ruling



The Commission accepts the proposal of the developers for specifying the definite timeline for visit of GEDA/GETCO/DISCOM for commissioning of project to avoid delay. GEDA, GETCO and / or DISCOM should complete the necessary formalities for commissioning of plant within fifteen (15) days from the date of receipt of application for commissioning of plant from the developer/generator.

The Commission also accept the list of documents proposed to be submitted to SLDC for first time charging. Accordingly, necessary modifications are made in the Order.

## **2.14 Additional points:**

### **2.14.1 Suggestions/Objections of the Stakeholders**

Some of the stakeholders requested to clarify regarding payment of Electricity Duty on electricity generated and consumed for self-consumption/sale to third-party within the State.

### **2.14.2 Analysis and Commission's Ruling**

Levy of Electricity Duty on consumption of electricity comes under the purview of Government of Gujarat. Therefore, Commission prefers to not give any direction on the same.

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### **3. TARIFF FRAMEWORK, GENERAL PRINCIPLES AND OTHER COMMERCIAL CONSIDERATIONS**

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Having considered all the comments from the stakeholders, the Commission hereby issues the final Tariff Framework for Wind-Solar Hybrid Power Projects including Storage, if any, effective from 20.06.2023, as under:

#### **3.1 Tariff Framework**

##### **Tariff Framework for Type A (Existing Project)**

In the case of existing standalone Wind or Solar Projects which are commissioned prior to 20.06.2023, the purchase of power from such existing Wind or Solar capacity, as the case may be, shall be in accordance with the respective PPAs with GUVNL/DISCOMs and purchase of power from additional / new Wind or Solar capacity commissioned after 19.06.2023, shall be at the tariff discovered through competitive bidding undertaken by DISCOMs separately for purchase of Wind and/or Solar power subject to approval of the Commission.

##### **Regulatory Framework for Projects under Open Access Regime (Type A)**

In case of conversion of existing Wind or Solar capacity, (i.e. commissioned prior to 20.06.2023) set up for captive use or third party sale into Hybrid Power Project by adding new Solar or Wind capacity, the existing Wind/Solar projects set up for captive use/third party sale, shall be governed by the provisions of existing Regulations/Orders/Wheeling agreement prevailing at the time of commissioning of such existing Wind/Solar Capacity with regard to transmission and/or wheeling charges and losses, Cross Subsidy Surcharge, Additional Surcharge, if any, Banking facility and charges, etc. for the existing wind / solar capacity. The new / additional Wind or Solar capacity commissioned after 19.06.2023, as a part of Hybrid Projects, shall be governed by Regulatory Framework specified by the Commission in this Tariff Order read with GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

Provided that such projects shall have to register with GEDA as a fresh for Wind-Solar Hybrid projects and also to obtain necessary commissioning certificate with consideration of the provisions of this Order readwith the provisions of Green Energy Open Access Regulations, 2024 notified by the Commission and MoP Rules in this regard.



With respect to existing Wind or Solar Power Projects which are commissioned prior to the effective date of this Order i.e. 20.06.2023, it is required to see and verify the completion date of normative useful life of the project and applicability of provisions for newly added solar/wind capacity at the end of normative useful life of the existing wind/solar capacity. Further, it is also necessary to consider the terms of agreement for Transmission and/or Wheeling executed between the parties for existing wind/solar capacity. It is also required to consider that the Gujarat Renewable Energy Policy 2023 provides that the repowering of wind projects shall have to be done on or before completion of normative useful life of 20/25 years from the date of commissioning of the project. The wind projects developers who do not go for repowering, shall have to de-commissioned the wind power projects after completion of normative useful life of 20/25 years and shall have to surrender the connectivity and if the Wind Turbine Generators is set up on lease land, they shall have to surrender their leasehold rights to the Government. Thus, it is mandatory for wind power projects developer to go for re-powering of wind generator on or before the completion of 20/25 years' normative useful life for seeking further extension of terms of wheeling/transmission agreement. Failure to it, no extension for transmission and / or wheeling Agreement for such projects is permitted and such wind generator has to be de-commissioned. Hence, it is necessary for the project developer who desire to convert its standalone Wind or Solar Project into Hybrid Project to comply with aforesaid provisions. Similarly, the solar power project is having normative useful life of 25 years as per the Order of the Commission. Therefore, hybridisation of existing Wind or Solar Projects are subject to aforesaid provisions related to normative useful life of the project. The consideration of above aspects is explained as under:

### **Illustration:**

If the wind generating plant is commissioned, say on 10.02.2013, the normative useful life of such plant, say 25 years, will be completed on 09.02.2038. Thereafter, such wind projects shall have to undergo for repowering before seeking any extension of Transmission and /or Wheeling agreement. Thus, the existing agreement for Transmission and / or Wheeling, if any, executed by the project developer for captive use or third-party sale, shall be continued only for the period upto 9.02.2038. If such existing wind generating project desire to convert its project into Wind-Solar Hybrid Projects, say on 01.03.2024 i.e. under the control period of this





Order, by installation of additional/new solar capacity, the Hybrid status of such projects as per existing Order / Regulations read with Agreements for Transmission and/ or Wheeling with the licensee shall be available only for the period from 01.03.2024 to 09.02.2038. Thereafter, the said project shall be qualified only as standalone solar project for the period from 10.02.2038 to 28.02.2049 and shall be governed by the provisions of relevant Regulations and/or Orders of the Commission during which the solar plant was commissioned, i.e. shall be governed as per the provisions of this Order. While granting registration of the Hybrid project and issuing commissioning certificate, the GEDA, GETCO and /or DISCOM shall ensure to record / mention such aspects in the registration certificate / commissioning certificate and other relevant documents related to conversion of existing wind/solar project as hybrid projects.

### **Tariff Framework for Type B (New Projects)**

The tariff for the new Wind-Solar Hybrid Projects above threshold limit eligible to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE, shall be discovered as per tariff based competitive bidding guidelines issued by MoP, Government of India under Section 63 of the Electricity Act 2003. The Commission may adopt such tariff discovered through transparent competitive bidding process after following due process of law.

### **Regulatory Framework for Projects under Open Access Regime (Type B)**

The Wind-Solar Hybrid Projects set up under Open Access Regime for captive use or third party sale, shall be governed by the Regulatory Framework specified in this Order and have to pay transmission charges & losses, wheeling charges & losses, Cross Subsidy Surcharge, Additional Surcharge, if any, Banking Charges etc. as applicable for Green Energy Open Access transaction as specified by the Commission in its Green Energy Open Access Regulations, 2024 read with MoP GEOA Rules and Tariff Regulations notified by the Commission.

### **Tariff framework for the Project below Threshold Limit**

#### **Type A (Existing Project)**



Type A (Existing project): In case addition of new Wind or Solar capacity by the developer is below the threshold limit eligible to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE:

Tariff for purchase of power by DISCOM from newly added Wind or Solar projects falling below the threshold limit of eligibility to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE, shall be considered as lowest of the weighted average tariff of Solar or Wind, as the case may be, available as on 1<sup>st</sup> April, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (October to March) or available as on 1<sup>st</sup> October, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (April to September), depending on commissioning date of newly added Wind or Solar project capacity subject to adoption of discovered tariff by the Commission.

In case weighted average tariff is not available for particular 6 months' period then latest weighted average tariff available for 6 months' period shall be considered.

#### **Type B (New Wind-Solar Hybrid Project)**

Tariff for Wind Solar and Storage, if any, Hybrid Power Projects falling below the threshold limit of eligibility to participate in competitive bidding specified in the tariff based competitive bidding guidelines notified by the MNRE, shall be considered as lowest of the Weighted Average Tariff (of Wind, Solar, Wind-Solar and Storage, if any, Hybrid Power Project) available as on 1<sup>st</sup> April, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (October to March) or available as on 1<sup>st</sup> October, as discovered in the competitive bidding undertaken by GUVNL/Distribution Licensees and SECI during previous six months (April to September), depending on commissioning date of the project subject to adoption of discovered tariff by the Commission.

In case weighted average tariff is not available for particular 6 months' period then latest weighted average tariff available for 6 months' period shall be considered.



## 3.2 General Principles

### 3.2.1. Control period:

The Commission has noted that the Ministry of Power had notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 6<sup>th</sup> June 2022 outlining the policy and regulatory provisions for promotion of renewable sources of energy through Open Access. Further, the MoP Rules is effective from the date of its Notification. The Commission also notes that the Wind-Solar Hybrid Tariff Order dated 03.04.2021 was having extended control period only upto 19.06.2023 and thereafter no extension in control period of earlier order is granted and also specified in the discussion paper that the new Order shall be effective from 20.06.2023. Therefore, the projects commissioned under the control period of previous Order were eligible to get the benefit of the said order, which was effective at relevant time. The Commission has also noticed that the Government of Gujarat has notified the Gujarat Renewable Energy Policy 2023 on 04.10.2023, wherein the benefits under the new Policy for the Wind-Solar Hybrid Projects are made applicable for the Wind-Solar Hybrid Projects commissioned after 19<sup>th</sup> June 2023.

Considering above aspects and to give effect to the provisions of Green Energy Open Access Rules 2022 notified by Ministry of Power under the Electricity Act, 2003 and specifically when there was no tariff order of the Commission as well as Government of Gujarat Policy effective from 20.06.2023 with regard to Wind-Solar Hybrid Project tariff framework, the Commission found it more appropriate to adopt the policy and regulatory provisions outlined in MoP Green Energy Open Access Rules, 2022 and defined the Control Period of new tariff order to be made effective from 20.06.2023 in the discussion paper also. Further, as suggested by some of the stakeholders to provide longer control period, the Commission decides to define the Control Period of this tariff framework effective from 20.06.2023 to 31.03.2027. The projects which are commissioned during aforesaid Control Period shall be governed by the provisions MoP Green Energy Open Access Rules, 2022, read with provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and this Order of the Commission and eligible for the benefits stipulated in this Order. Further, Wind-Solar Hybrid Projects commissioned during the Control Period of this Order shall be liable to pay applicable Open Access charges and provisions related to banking facility, energy accounting etc and shall be



governed by this Order read with GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

### **3.2.2. Useful life of plant:**

The Useful Life for the Wind Solar Hybrid Power Projects to be commissioned during control period of this Order shall be considered as 25 years from date of commissioning.

### **3.2.3. Tariff period:**

The tariff period for the tariff framework approved by the Commission for Procurement of electricity from Wind-Solar Hybrid Power Projects by the distribution licenses in the State shall be 25 years.

### **3.2.4. Eligible Unit:**

Any individual, Company or Body Corporate or Association or Body of Individuals, whether incorporated or not, or Artificial Juridical Person, shall be eligible for setting up of new Wind-Solar and Storage, if any, Hybrid Projects or shall be eligible to add Wind/Solar capacity in existing Solar/Wind Power Projects respectively, either for the purpose of captive use and/or for selling of electricity, in accordance with the provisions of the Electricity Act, 2003, Rules and Regulations framed thereunder as amended from time to time. The wind and solar generation and storage, if any, may be metered separately at the pooling/sending end Sub-Station.

The choice of capacity mix between Wind and Solar and Storage, if any, shall be the discretion of the Developer or as per the individual schemes as notified by the State or Central Government from time to time. However, at the locations of having good wind power potential, the Solar PV capacity to be added as the Solar-Hybrid component could be relatively smaller. Similarly, in case of the sites where the Wind Power Density (WPD) is relatively lower or moderate, the component of the Solar PV capacity could be relatively on a higher side. The ratio of different technology mix of Wind-Solar and Storage, if any, percentage as a part of Hybrid Project shall be in accordance with the Notification of MNRE, GoI in this regard.





**For simplicity purpose, Wind-Solar Hybrid Power Generation Plants shall be divided into two categories:**

**(i) Type-A Projects**

This category shall include conversion of already commissioned Wind or Solar Power Plants i.e. commissioned prior to 20.06.2023 into Hybrid Projects by addition of new Solar or Wind capacity, as case may be. The Wind or Solar capacity commissioned prior to 20.06.2023 shall be considered as existing capacity eligible to convert in Wind-Solar Hybrid project under Type-A category. The Wind or Solar Capacity commissioned prior to 20.06.2023 shall be considered based on Power Purchase Agreement (PPA)/Bulk Power Transmission Agreement (BPTA) and /or Wheeling Agreement capacity with GETCO/ DISCOMs.

**(ii) Type-B Projects**

This shall include new Wind-Solar and Storage, if any, Hybrid Power Generation Projects which are not commissioned as on effective date of this Order i.e. as on 20.06.2023. The Wind-Solar Hybrid Power Projects commissioned under PPAs signed during the Control Period of this Order will be eligible to sell power to distribution licensees of Gujarat at the tariff framework approved by the Commission under this Order. Similarly, Wind-Solar Hybrid Power Projects commissioned during the Control Period of this Order will be eligible for wheeling of power for Captive use/ Third Party sale as per the tariff framework approved by the Commission under this Order.

The Wind Solar Hybrid Power Plants located in State of Gujarat / outside of State of Gujarat and connected to ISTS network and supplying power to consumers connected with Intra-State Transmission and / or Distribution System of State, shall be governed by CERC Open Access Regulations as well as GERC Green Energy Open Access Regulations, depending upon the drawl voltage level of consumer. Gujarat Energy Development Agency (GEDA) shall be the nodal agency for registration of such projects set up in Gujarat.

Whereas, in case of Wind-Solar Hybrid Power Project connected with ISTS network and supplying power to consumers directly connected with ISTS network but not connected with Intra-State Transmission and /or Distribution System of State, shall be governed by CERC Open Access Regulations.



### **3.2.5. Forecasting and Scheduling for Wind Solar Hybrid Power Project:**

The Wind-Solar Hybrid Projects connected with State Grid shall require to follow the provisions as prescribed under the GERC (Forecasting, Scheduling, Deviation Settlement and Related Matters of Solar and Wind Generation Sources) Regulations, 2019 notified on 19.01.2019 and its amendments issued from time to time.

In case of ISTS connected Wind Solar Hybrid Projects (including Inter-State RE projects located in Gujarat & directly connected to ISTS network and supplying power to consumer in Gujarat / outside of Gujarat) energy accounting for deviation shall be as per the CERC Regulations.

Provided further that if Wind-Solar Hybrid Generating project is situated in the State of Gujarat and connected with Inter-State grid through State grid and selling power outside/ inside the State, the energy accounting for deviation settlement shall be carried out wherein the deviation charges shall be either (A) Reference Rate or (B) Normal Rate of Charges for deviation, whichever is higher, as per the provision of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

Explanation: Reference Rate and Normal Rate of Charges shall have the meaning as defined in CERC DSM Regulations from time to time.

Provided that in case of Wind-Solar Hybrid Power projects set up for captive consumption/ sale to third party, the minimum number of time blocks, which shall not be more than 12 time-blocks, for which the consumer shall not change the quantum of power consumed through Green Energy Open Access so as to avoid variations in demand to be met by the distribution licensee.

### **3.2.6. Applicability of Merit Order Dispatch Principle:**

Wind-Solar Hybrid Power Projects irrespective of the plant capacity shall be treated as 'MUST RUN' power plants and shall not be subjected to Merit Order Dispatch Principles.



### 3.2.7. Reactive Energy Charges

The Reactive Energy Charges as approved by the Commission in tariff orders for the Gujarat Energy Transmission Corporation Limited (GETCO) read with GERC Grid code from time to time shall be applicable to Wind Solar Hybrid Projects.

### 3.2.8. Metering points an interconnection point:

The metering and interconnectivity shall be as under:

- a) Energy generation from wind/solar capacity shall be measured separately at the pooling/sending end sub-station on 15 /5-minute time blocks by installing four Quadrant ABT compliant meters by the project developers. The project developers shall also have to install Remote Terminal Unit (RTU) and communications facilities for transferring the real time data to SLDC for monitoring purpose. Further, four quadrant ABT compliant meter shall be installed on each wind turbine/solar projects. All the meters will be tested in NABL laboratory and duly sealed by DISCOMs. Meters shall be installed in the presence of DISCOM and /or GETCO representatives at the time of commissioning of the Wind-Solar Hybrid project and sign on such documents. The meters shall be AMR compatible so that data can be fetched at GEDA, DISCOM and SLDC level remotely.
- b) For the purpose of commercial settlement and energy accounting, the metering point shall be at the receiving end sub-stations of GETCO. The injection of energy from Wind-Solar capacity shall be worked out separately at the receiving end sub-stations of GETCO on the basis of meter reading of common meter installed at receiving end sub-stations appropriately apportioned as per the respective meter reading (active and reactive) of wind and solar ABT (four quadrant) meters installed at respective wind and solar project separately.
- c) In case of Type-A projects (Existing Projects), the metering/injection point shall continue as per existing agreement with GETCO /DISCOM.
- d) In case of Type-B Projects (New Projects) that are AC or DC integrated, the metering point shall be at the receiving end of GETCO Sub-Station. Developer shall have to install the ABT (four quadrant) Main & Check meter at their own cost duly tested, sealed and installed in



the presence of DISCOMs and /or GETCO's representatives. Developer shall install such meters at receiving end of GETCO Sub-Station as well as at Wind and Solar PV System Installations in view of the different tariff and RPO. In case of common hybrid tariff and common RPO, a single meter as per above specification for both wind and solar system shall suffice.

- e) For Type-A Projects (Existing Projects), both Wind and Solar PV Systems shall use separate set of internal electrical lines and equipment and connect to the pooling/sending-end Sub-Stations of the Hybrid Projects. The projects shall be mandatorily metered the wind and solar energy separately. Developers shall have to install ABT (four quadrant) meters at Wind and Solar PV System Installation as well as receiving end of the GETCO Sub-Stations at their own cost duly tested, sealed and installed in the presence of DISCOM and /or GETCO representatives.
- f) Internal connectivity between solar and wind capacity prior to pooling/sending-end Sub-Station shall be allowed for Type B Projects (New Projects) once a common RPO and hybrid tariff are present.
- g) Energy metering and communication facility shall be provided by the developer of Hybrid Power Projects in accordance with the following Regulations/Codes/Orders and their subsequent amendments:
  - i. Central Electricity Authority (Installation and Operation of meters) Regulations 2014 and its subsequent amendments.
  - ii. Gujarat Electricity Grid Code 2013 and its subsequent amendments.
  - iii. GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments.
  - iv. GERC Distribution Code 2004 and its subsequent amendments.
  - v. GERC (Terms and Conditions for Green Energy Open Access), Regulations 2024.

For the purpose of energy accounting, all projects shall have to provide ABT compliant (four quadrant) meters at generators end and if the power is to be wheeled to consumers' premises,





then ABT cum Tariff compatible meter is to be installed at the consumers' premises also. While in case of consumer seeking open access below 1 MW, installation of Special Energy Meter capable of energy recording on 15 Minute Time Block basis at consumption end shall be allowed. GEDA, GETCO and DISCOMs shall ensure the energy accounting of Active and Reactive energy of the Wind/Solar and/or Hybrid for each consumer/customer. Energy Accounting shall be done by SLDC.

Provided that in case of Wind-Solar Hybrid project connected with Inter-State Transmission System (ISTS) network through state network, the provisions related to metering point and interconnection point shall be governed by the provisions of Intra-State Generator provided in this Order. While in case of the Wind Solar Hybrid projects directly connected to ISTS network shall be governed by the provisions of CERC Regulations.

### **3.3 Wind-Solar Hybrid System & Power Evacuation**

Wind-Solar and Storage, if any, Hybrid Power Generation System, or the Hybrid Project, means the system of combined generation from collocated Wind and Solar Power Project and Storage, if any, (i) as addition of wind or solar capacity in the existing solar or wind power project as part of Hybrid power project or (ii) installation of new Wind-Solar Power Projects with storage capacity, if any, and injection of power from the power project at the interconnection point of the pooling end substation.

Under the scheme of Wind-Solar Hybrid Power Generation, Wind and Solar PV Systems shall be connected at the same interconnection point at pooling/sending-end sub-station. 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, it is desired that:

- i. At the locations of having good wind power potential, the solar PV capacity to be added as hybrid component could be relatively smaller.
- ii. Similarly, 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 side.



- iii. The ratio of different technology mix of Wind-Solar and Storage, if any, as a part of Hybrid Project shall be in accordance with the Notification of MNRE, GoI in this regard.

### **(I) Hybridization of existing projects (Type-A):**

Existing Wind power Project Developer or Solar Power Projects Developer, willing to install additional / new Solar PV Plant or Wind Turbine Generators respectively, at the existing location, shall be allowed to do so with following conditions.

- i. The total power injection (combined wind and solar) into the grid shall not be more than the transmission capacity/grid connectivity allowed/sanctioned by GETCO for this purpose. In case, addition/augmentation in the existing evacuation system is required as per the system study undertaken by GETCO due to addition of Wind/Solar and Storage Capacity, if any, the Developers shall undertake such addition/augmentation in the system up to the receiving end sub-station of GETCO at their own cost. However, the primary focus is to optimize the utilization of existing transmission infrastructure and technologies, and design approaches towards minimum augmentation is encouraged.
- ii. The transmission and / or wheeling of energy from additional solar/wind capacity as part of Hybrid Project may be allowed for captive use or for third-party sale or sale to DISCOMs. For transmission and wheeling of power, the applicable charges and losses shall be as specified in this Order.
- iii. The Developers shall approach GETCO for determining the transmission capacity available to evacuate the additional wind/ solar power or any augmentation that may be required. GETCO shall provide the relevant data with regards to the transmission capacity utilization on its existing network.

### **(II) Hybridization of Type-B Projects (New Projects)**

- i. The Developer of Hybrid Project shall establish the evacuation line at their own cost up to the receiving end sub-station of GETCO as per the system study undertaken by GETCO.



- ii. The Developer has option for transmission / wheeling of wind and solar power for their captive use or third-party sale or sale of power to the DISCOMs. For transmission and wheeling of power, the applicable charges and losses shall be as specified in this Order.
- iii. Hybrid Project Developers shall approach GETCO for evacuation system planning up to the receiving station.

For both Type-A and Type-B Hybrid Projects, the Developer shall ensure for capacity allocation/sanction of transmission capacity at least equal to installed capacity of wind or solar project, whichever is higher. In case, total injection of power from Wind-Solar Hybrid Project with storage, if any, exceeds the allocated/sanctioned transmission capacity, the same shall be avoided /restricted by providing necessary protection system so that such incident may not affect real time grid management by grid operators. Such injection of power over and above allocated/sanctioned transmission capacity shall be considered as inadvertent flow of power and shall not be considered for commercial settlement.

**A. For Type-A Projects (Existing Projects) where -**

- a. Open Access is already granted to the extent of rated capacity of transmission line/substation of GETCO, the injection of power from additional wind or solar capacity to be set up, is restricted up to already granted rated capacity of transmission line/substation of GETCO. The same shall be allowed without applicability of transmission charges on such additional capacity. However, the transmission losses and wheeling charges/losses shall be made applicable to such capacity as applicable to any other solar or wind project as the case may be. In case total hybrid generation exceeds the transmission capacity limit, it shall be considered as inadvertent injection of power for which no payment or credit shall be given or under any exigency which requires curtailment of generation, the generation from additional/new wind/ solar capacity shall be curtailed first.
- b. There is capacity margin in the existing transmission system/ sub-station of GETCO after taking into account open access already granted to the existing wind/solar project or any augmentation and strengthening of transmission system after receiving end sub-station is undertaken by GETCO for allocation/sanction of transmission capacity for



allowing additional wind/ solar capacity, the transmission charges and losses, and wheeling charges and losses shall be applicable on such additional sanctioned/allocated capacity as applicable to any other Solar/ Wind Project as the case may be. However, if any augmentation in the existing transmission system is required due to addition of such solar/wind capacity, up to receiving end substation of GETCO, the same shall be undertaken by the Developers at its own cost.

## **B. For Type-B Projects (New Projects)**

The Developer of Hybrid Project shall establish a dedicated line at its own cost for evacuation of power up to receiving end sub-station of GETCO as per system study undertaken by GETCO. From there onwards, GETCO shall ensure transmission system and connectivity. Transmission charges shall be applicable on the basis of sanctioned/ allocated transmission capacity. However, Developer shall ensure that power injection shall never increase beyond sanctioned/allocated transmission capacity. In case total hybrid generation exceeds the transmission capacity limit, it shall be considered as inadvertent injection of power for which no payment or credit shall be provided. Transmission charges and losses and wheeling charges and losses shall be applicable as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time.

### **3.4 Operation and Maintenance of dedicated lines**

The Operation and Maintenance of dedicated evacuation line including the bays shall be carried out at the cost of Developer of Hybrid Projects as per applicable technical standards and best practices.

### **3.5 Transmission and Wheeling Charges**

#### **Third Party Sale**

- a. In case of injection of the electricity at 66 KV level or above and drawl of electricity up to 66 KV level, the transmission of energy from the injection point to drawl place shall be allowed by paying transmission charges applicable on sanctioned/allocated transmission capacity and transmission losses as determined by the Commission from





time to time, as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time.

In case of injection of energy at 66 KV level and drawl of energy at 11 KV voltage level in such case, wheeling of Power for third party sale from Hybrid power projects shall be allowed on payment of transmission charges applicable on sanctioned/allocated transmission capacity, transmission losses on energy feed basis, wheeling charges and losses on the energy fed into grid as measured at receiving Sub-Station of GETCO, as applicable to green energy open access transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time.

- b. The Commission decides to promote the third-party sale/consumption of renewable / green energy by allowing 25% concession in the Cross Subsidy Surcharge and Additional Surcharge, if any, wherein the RE generator and consumer does not claim RE attribute and allow distribution licensee to avail the same for RPO compliance.
- c. No concession in the Cross Subsidy Surcharge shall be allowed to the RE generator who are selling power under third party sale and utilizing RE attribute for RPO compliance of the consumer or the projects which have registered under REC mechanism. They shall be liable to pay 100% Cross Subsidy Surcharge and Additional Surcharge, if any, as determined by the Commission read with the provision of GERC Green Energy Open Access Regulations.
- d. The provisions related to Cross Subsidy Surcharge and Additional Surcharge shall be governed as per the MoP Rules and GERC Green Energy Open Access Regulations, 2024 as amended from time to time.

### **Wheeling of power for Captive Use**

- a. In case of injection of energy is at or above 66 KV voltage level and drawl of such energy up to 66 KV voltage level, in such case the transmission of energy from the injection point to drawl place shall be allowed by paying transmission charges on sanctioned / allocated transmission capacity and transmission losses determined by the



Commission from time to time, as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time .

- b. In case of injection at 66 KV and drawl at 11 KV voltage level, wheeling of electricity generated from the Hybrid Project to desired location(s) within the State shall be allowed on payment of transmission charges applicable on sanctioned/allocated transmission capacity and transmission losses, wheeling charges and losses of the energy fed to the grid at the receiving end Sub-Station of GETCO, as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time.

Provided further that the person consuming energy generated from Hybrid project for captive consumption shall require to provide the details of ownership in the captive generating plant and generation as well as consumption of energy from captive generating plant to the distribution licensee in whose area of supply, the captive consumer is situated, on annual basis, in accordance with the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024. to ensure that the necessary conditions stipulated in Electricity Rules, 2005 read with provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 is fulfilled by such captive generating plant and consumption by captive users. Failure to fulfil the aforesaid conditions, such consumption shall loose the status of captive consumption and it shall be qualified as supply by third party by generator and the benefits granted to captive consumption shall be withdrawn for that Financial Year and it shall attract the applicability of the Cross-Subsidy Surcharge and Additional Surcharge, if any, as applicable to third party green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and amendments in it from time to time along with delayed payment surcharge thereon.

On receiving of documents/evidence from the captive consumer by the distribution licensee, the distribution licensee shall verify the same in compliance of provisions of Act, Rules and Regulations for captive status of the generator and consumption of energy from such plant and refer the matter to the Commission in case non-compliance of captive status by the



generator/captive consumer and also claim the recovery of charges payable by such consumer on account of not fulfilling of captive generating plant status by the generator or captive consumer.

The Commission shall verify the fact and take the final decision regarding continuation of the captive status of the plant and consumption of energy from such plant as captive consumption for the respective financial year.

The various provisions related to Captive Generating Plant (CGP) and consumption of energy from such plant as stipulated in the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 shall be applicable for Wind-Solar Hybrid Power Project.

### **Wheeling of power to more than one locations**

Wind-Solar Hybrid Project Developers, who desire to wheel electricity to more than one location for captive use/third-party sale, shall be allowed on payment of 5 paise per unit on energy fed into the grid as measured at receiving end Sub-Station of GETCO to the concerned DISCOM in whose area power is consumed in addition to above mentioned transmission charges & losses and Wheeling charges & losses, as applicable.

Provided that in all above cases, total injection of power from the Hybrid Project exceeds such allocated/sanctioned transmission capacity, such power shall be considered as inadvertent flow of power and shall not be considered for any commercial settlement.

### **3.6 Energy Accounting & Banking facility**

The provisions related to banking facility and charges, methodology for settlement of banked energy and treatment for un-utilised banked energy at the end of banking period etc., shall be governed by the MoP Green Energy Open Access Rules, 2022 and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and its subsequent amendments from time to time.

The banking facility shall be an optional facility provided to the consumers availing open access from Wind-Solar Hybrid Power Project as provided under GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024. In case consumer choose not to avail



banking facility, the same shall be permitted on furnishing an undertaking as specified in the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 in this regard.

Provided that in respect of Wind-Solar Hybrid Power Project directly connected with ISTS network and supplying power to the consumer in the State either connected with ISTS network or Intra-State network of State, the provisions related to energy banking facility shall be governed as per the applicable CERC Regulations read with MoP Rules.

Provided further that the applicable charges i.e. transmission charges and losses, wheeling charges and losses, Cross Subsidy Surcharge, Additional Surcharge, if any, etc., shall be applicable to the consumer which are availing Open Access by utilization of State Grid as per the provisions of this order i.e. utilization of Transmission and /or Distribution network of the State with or without utilization of ISTS Network.

Provided further that Cross Subsidy Surcharge, Additional Surcharge, if any, etc. shall be applicable to the consumer which are availing Open Access from Wind-Solar Power Project involving only ISTS Network.

### **3.6.1. Energy Accounting**

Energy Accounting related provision as provided below shall be applicable for captive use as well as third party open access transaction from Wind-Solar Hybrid Project:

#### **1. Case 1: The Wind-Solar Hybrid Projects which are availing banking facility:**

The consumption of banked energy shall be permitted on billing cycle basis in a manner stipulated in the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024. The banking of energy shall be evaluated for energy accounting on 15/5-minute time block basis. The difference between the injected energy from Wind-Solar Hybrid project worked out at the receiving end Sub-Station of GETCO and available at consumption point and consumer's consumption in same 15 /5-minute time block basis shall be considered as banked energy.

- (i). The permitted quantum of banked energy for the consumer availing open access from Wind-Solar Hybrid project shall be atleast 30% of total consumption of electricity from





the distribution licensee by the consumer during the billing period as provided in the MoP Green Energy Open Access Rules, 2022 readwith GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

- (ii). For net import of power, DISCOM shall charge applicable tariff of respective category to the consumer including fixed/ demand charge, energy charges, peak charge, other charges/ penalty etc. as applicable to other Consumers.
- (iii). The unutilized surplus banked energy shall be considered as lapsed at the end of billing cycle and entitled to get REC as per the provisions of MoP Green Energy Open Access Rules, 2022.
- (iv). No carry forward of surplus banked energy, if any, available at the end of billing cycle shall be permitted.
- (v). The consumer/project developer shall require to pay banking charges as specified in the Green Energy Open Access Rules notified by the Ministry of Power, Government of India read with provisions of GERC (Green Energy Open Access) Regulations in force and as amended from time to time.
- (vi). The consumer/project developers do not desire to utilize the Green Energy attributes (RE) for fulfilment of its RPO, the distribution licensee shall have considered such energy as fulfilment of different types of RPO of distribution licensee, based on such energy consumed by consumer.
- (vii). The consumer who utilizes RE (Green Energy) component for fulfilment of its RPO, in such case, consumption of RE (Green Energy) shall be qualified as fulfilment of consumer's RPO.

## **2. Case 2: For Wind Solar Hybrid Projects not availing banking facility:**

The Energy Accounting shall be based on a 15-minute time block-basis and no banking charge shall be applicable.

- i. For net import of power, the DISCOM shall charge applicable tariff of respective category to the Consumer including fixed/ demand charge, energy charges, peak charge, time of



use charges, other charges/ penalty, etc. as applicable to other Consumers as per tariff orders of the Commission.

- ii. Surplus wind/solar energy, after giving set-off on 15 minute time block basis, shall be considered as lapsed energy and not entitled for REC.
- iii. Once the option for not availing the banking facility is exercised, the same shall not be allowed to change before completion of three years from the date of exercise of such option.

### **3. Case 3: Project registered under REC Mechanism:**

- a. Hybrid Projects availing open access for captive use/third-party sale under REC mechanism shall be governed as per CERC REC Regulations.
- b. Such projects shall be allowed to transmit / wheel the energy on payment of applicable transmission charges & losses, wheeling charges & losses and other charges as applicable to Green Energy Open Access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.
- c. The provisions related to banking facility and charges, energy accounting mechanism, treatment for surplus energy etc. shall be governed as per the GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time.
- d. Cross Subsidy Surcharge and Additional Surcharge, if any, and open access charges shall be applicable as applicable to green energy open access transaction as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time.

#### **3.7 Restrictions:**

Second hand WTGs/Solar modules or other electrical and mechanical equipment shall not be eligible for installation under this Policy.

#### **3.8 CDM Benefits**



Sharing of CDM benefits or any other benefit such as carbon credit or any other benefits under CDM or any other mechanism under any provision from any source providing such benefits to the Wind-Solar Hybrid Power Project for which it shall qualify to receive such benefit may apply to the concerned authority to avail/receive the benefit for the project. The benefits which shall be receivable or received shall be shared with the procurer of power and/or licensee as under:

- i. 100% of the gross proceeds on account of such CDM benefit or any other benefit such as carbon credit or any such benefit or any other mechanism from any source or agency to be retained by the project Developer in the first year after the date of commercial operation of the generating station.
- ii. In the second year, the share from above benefits of the Beneficiaries like Power Procurer/Licensee shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the Generating Company and the Beneficiaries like Power Procurer/Licensee.”
- iii. In case of PPA signed under competitive bidding process, the sharing of benefits received by the Hybrid project shall be as per terms and conditions of bid documents read with the PPA.

### 3.9 Security Deposit

The Hybrid Power Project Developer shall be required to provide Bank Guarantee @ 10 lakhs per MW to GETCO based on allotment of transmission capacity and in case the developer fails to commission the Hybrid capacity within the time-period mentioned hereunder, GETCO shall encash the Bank Guarantee.

| Sr. No. | RE capacity in MW  | Period for commissioning the entire evacuation line along with bays and metering system |
|---------|--------------------|---|
| 1.      | 1MW to 100 MW      | 12 months from the date of allotment of transmission capacity                           |
| 2.      | >100 MW to 200 MW  | 15 months from the date of allotment of transmission capacity                           |
| 3.      | >200 MW to 400 MW  | 18 months from the date of allotment of transmission capacity                           |
| 4.      | >400 MW to 1000 MW | 24months from the date of allotment of transmission capacity                            |



The Wind-Solar Hybrid Project Developer shall ensure and prove that the Evacuation System consist of Transmission and /or Distribution System shall be ready prior to SCOD or aforesaid timeframe, whichever is earlier. Failure to it, the project developer is not eligible to get any waiver in Liquidated Damages payable by it, in terms of respective Agreement/ PPA.

The Wind-Solar Hybrid Power Project Developer shall commission the project for at least 10% of the allotted capacity within one month of charging the evacuation line or as per timeframe stipulated table above, whichever is earlier, failing which, the Developer shall be liable to pay long-term transmission charges for 10% of the allotted capacity until such 10% of the allotted capacity is commissioned.

The balance 90% capacity shall require to be commissioned within one year of charging of evacuation line or as per timeframe stipulated above, whichever is earlier, failing which STU shall cancel the connectivity and Open Access granted, to the extent of capacity not commissioned and the RE developer shall have no claim on such capacity and pay relinquishment charges as determined by the Commission. Further, STU shall include such cancelled capacity in the list of spare available capacity for RE integration to be published on their website for prospective consumers.

If the Wind-Solar Hybrid Project Developer (as Generator / Consumer/ Licensee) fails to commission the entire allocated evacuation system along with bays and metering System within stipulated time-period due to unforeseen reasons, they may approach to the Commission seeking for extension of time period.

In case of Wind-Solar Hybrid Project set up under competitive bidding route, in that case, the aforesaid provision shall be governed by the provisions of approved bid documents /PPA.

### **3.10 Procedure for Integration of Wind Solar Hybrid project and Battery Energy Storage to the grid**

The commissioning and integration of Wind-Solar and Storage, if any, Hybrid Project shall be as per the following procedures and amendments made in it from time to time in this regard.

The generating station based on Wind-Solar and Storage if any, shall submit a certificate signed by the authorised signatory not below the rank of CMD or CEO or MD or Full Time Director, to the SLDC, GEDA, concerned Distribution Licensees and/or Transmission Licensee





before declaration of SCOD, that the said generating project including main plant and equipment such as Wind Turbines Generators, Solar Modules and Inverters, Storage Systems, if any and Auxiliary Systems, etc. has complied with all relevant provisions of CEA Technical Standards for Connectivity, CEA Technical Standards for Communications, CEA (Measures relating to Safety and Electricity Supply) Regulations, 2010 and Gujarat Grid Code and shall have also obtained ALMM Certificate from concerned authority, whenever it is required.

GEDA shall ensure following compliance from the developer of Wind Solar Hybrid Project with storage, if any, before carrying out testing, commissioning activities and issuing the Commissioning Certificate to the Hybrid Project and failure to it, the commissioning certificate, if any, issued, shall not be qualified as legal and valid.

**(a). Document Submission to SLDC**

The following documents shall be submitted to SLDC before proposed date of commencement of first-time charging activities:

- Covering letter
  - Name of Pooling Station, installed capacity of project and storage, if any, Name of connected Sub-Station of GETCO/Transmission Licensee.
  - Proposed date of synchronization of pooling station with Intra-State grid.
  - Details of contact person i.e. Name, Designation, Mobile No., Email for day to day as well as commercial communication purpose.
  - Details of first-time grid connection charge paid to SLDC through online mode.
  - Name of DISCOM for allocation of power from the project / type of contract in detail.
  - Copy of application to GEDA for granting registration of Wind-Solar Hybrid Power Project, details of pooling station and specific details regarding under which policy/order/regulation, the wind-solar capacity in the hybrid project is installed.
- Approval obtained from various statutory agencies i.e. STU/GEDA/DISCOM for installation and feasibility of pooling station of the project, as applicable.
- Parallel connectivity approval from STU/DISCOM, as applicable.
- Approved metering scheme, ABT meter details, Commissioning report/MOM, as applicable.



- Connectivity agreement with GETCO/ Discom or Transmission and /or Wheeling Agreement, as applicable.
- Copy of PPA/Wheeling agreement/Agreement for Third Party Sale with beneficiary, if any.
- Registration certificate of the generating unit or station in the registry maintained by CEA on e-portal <https://egen.cea.gov.in> as per applicable CEA standards.
- Copy of letter allocating seven-digit ABT Meter Serial Number along with Duly notarized undertaking as applicable.
- RTU commissioning report/MOM- for communication of real time data up to sub SLDC/SLDC and RTU payment receipt/REMC MOM, as applicable.
- Registration of renewable generators with SLDC through self/lead generator/QCA, as per approved procedure of Notification No. 1 of 2019 Dated. 19.01.2019
  - Application for registration with registration charges/Consent from renewable generators (in case of QCA) /Undertaking from QCA (in case of QCA)/ Authorization to lead generator (in case of group generator)
  - Details of Payment Security provided by the project developer
  - Static Data of Renewable Energy Generator
  - Other supporting documents, as per requirement
- Consent/Concurrence letter for “Generator Name” being Lead Generator by all Generators, if applicable.
- Details of ALMM certificate issued by concerned authority, if applicable.
- QCA appointment letter, as applicable.
- On commissioning of Wind-Solar Hybrid Project with storage, if any, as per the certificate issued by GEDA and also signed by Discoms and/or Transmission Licensee/STU representatives, the details of plant with commissioning date, installed capacity (AC/DC both), DISCOM name for allocation of power, in tabular format with covering letter, to be submitted.
- C.O.D. letter of GEDA.

**b. Technical Details- Below mentioned technical details to be submitted: -**



- i. Static Details: Details of Wind-Solar Hybrid Power Project, Static parameters for Wind Generating station and Static parameters for Solar Generating station has to be provided as per the details provided in Table below:

**Table 1: Static Data for Wind Generating Station**

| <b>Sr. No</b> | <b>Particulars</b>                         |
|---------------|--|
| 1             | Type                                       |
| 2             | Manufacturer                               |
| 3             | Make                                       |
| 4             | Model                                      |
| 5             | Capacity                                   |
| 6             | Commissioning date                         |
| 7             | Hub Height                                 |
| 8             | Total Height                               |
| 9             | RPM Range                                  |
| 10            | Rated Wind Speed                           |
| 11            | Performance Parameter                      |
| 12            | Rated Electrical power at rated wind speed |
| 13            | Cut in wind speed                          |
| 14            | Cut out wind speed                         |
| 15            | Survival speed (Max wind speed)            |
| 16            | Ambient temp for out of operation          |
| 17            | Ambient temp for in operation              |
| 18            | Low Voltage ride through (LVRT)            |
| 19            | High Voltage ride through (LVRT)           |
| 20            | Lightning strength (KA & Coulombs)         |
| 21            | Noise Power level (db)                     |
| 22            | Rotor                                      |
| 23            | Hub type                                   |
| 24            | Rotor Diameter                             |
| 25            | Number of blades                           |
| 26            | Area swept by blades                       |
| 27            | Rated Rotational speed                     |
| 28            | Rotational Direction                       |
| 29            | Coning Angle                               |



|     |  |
|-----|--|
| 30  | Tilting Angle  |
| 31  | Design Tip speed ratio   |
| 31a | Height of Hub with respect to mean sea level   |
| 32  | Blade  |
| 33  | Length   |
| 34  | Diameter   |
| 35  | Material   |
| 36  | Twist Angle  |
| 37  | Generator  |
| 38  | Generator type   |
| 39  | Generator number of poles  |
| 40  | Generator speed  |
| 41  | Winding type   |
| 42  | Rated Generation Voltage   |
| 43  | Rated Gen frequency  |
| 44  | Gen Current  |
| 45  | Rated temp of generator  |
| 46  | Generator cooling  |
| 47  | Generator Power Factor   |
| 48  | KW/MW @rated wind speed  |
| 49  | KW/MW @ peak continuous  |
| 50  | Frequency controller   |
| 51  | Transformer  |
| 52  | Transformer capacity   |
| 53  | Transformer cooling type   |
| 54  | Voltage  |
| 55  | Winding configuration  |
| 56  | Weight   |
| 57  | Rotor Weight   |
| 58  | Tower Weight   |
| 59  | Nacelle Weight   |
| 60  | Over speed protection  |
| 61  | Design life  |
| 62  | Design standard  |
| 63  | Latitude   |
| 64  | Longitude  |
| 65  | CoD details  |
| 66  | Distance above mean sea level /Height of installation with respect to mean sea level |





**Table 2: Static Data for Solar Generating Station**

| Sr. No | Particulars  |
|--------|--|
| 1      | Latitude   |
| 2      | Longitude  |
| 3      | Power Curve  |
| 4      | Elevation and orientation angle of Arrays  |
| 5      | Generation capacity of generating facility   |
| 6      | Distance above mean sea level  |
| 7      | CoD details  |
| 8      | Rated voltage  |
| 9      | Details of type of mounting ( tracking , single axis, double axis , auto/manual)                     |
| 10     | Manufacturer and model ( imp component such as panel, inverter, cable, solar panel , transformer etc |
| 11     | D C installed capacity   |
| 12     | Module cell technology   |
| 13     | I-V Characteristics of module  |
| 14     | Inverter rating at different temp  |
| 15     | Inverter efficiency curve  |
| 16     | Transformer capacity & rating  |

- c. It is also necessary to ensure that the physical connectivity of Solar-Wind and Storage, if any, Hybrid Power Project with grid is granted to the same person/generating company in whose name the connectivity is approved / sanctioned and also the transmission and/or wheeling agreement is signed with the same person/generating company as a party to the agreement in whose name the connectivity is granted. The commissioning of the project shall be allowed by GEDA, DISCOMs and/or GETCO representative by verifying that such RE generators has complied with the provisions of CEA's Connectivity Standard Regulations and obtained ALMM certificate, if applicable and it shall be recorded in Commissioning Certificate during the inspection and commissioning activities.

### **3.11 Commissioning the Hybrid Project:**

After following the procedure of integration of Hybrid Project with grid, the commissioning of Hybrid Projects be followed. The "Commissioning" with respect to the Wind-Solar Hybrid



Project with storage, if any, shall be certified by GEDA in the presence of GETCO and /or Distribution Licensee representative. GEDA should ensure that all equipment as per MNRE approved list of Solar Panel manufacturers and WTG manufacturers of rated capacity and as per Indian Standards on Renewable Energy notified by BIS has been installed and energy has been flown into the grid and recorded in the energy meters installed at project site and witnessing of such generation of energy by representative authorised by DISCOM and / or GETCO. The GEDA, GETCO and/or DISCOM should complete the necessary formalities for commissioning of plant within fifteen days from the date of receipt of application for commissioning of plant from the project developer/generator. The representatives of GEDA, GETCO and/or Distribution Licensees shall sign on the documents related to commissioning of project. Non-signing of documents of commissioning of Hybrid Projects by any of the representative of above entity shall not be qualified as valid commissioning of the project. The commissioning certificate shall consist of the details of each Wind Turbine and each Solar modules alongwith RFID details of Solar PV Module and details of each solar inverters.

Further, it shall also be ensured that energy generation data from the Hybrid Project is transferred on the real time basis through RTU to SLDC

### **3.12 Applicability of the Order**

As already clarified above, this Order shall come into force from 20.06.2023. The tariff framework fixed in this Order shall be applicable to Wind-Solar Hybrid Power Projects with storage, if any, commissioned on or after 20.06.2023. If any transmission and/or wheeling agreement executed for the Wind-Solar Hybrid Project with Storage, if any, after expiry of control period of previous Order on Tariff Framework for Wind-Solar Hybrid Power Projects (Order No. 04 of 2021 dated 03.04.2021 and Order dated 17.03.2023 in Petition No. 2128 of 2022) i.e. after 19.06.2023 shall be modified and aligned with the provisions of this Order.

**Sd/-**  
**[S. R. Pandey]**  
**Member**

**Sd/-**  
**[Mehul M. Gandhi]**  
**Member**

**Sd/-**  
**[Anil Mukim]**  
**Chairman**

**Place: Gandhinagar**  
**Date: 22/02/2024**



## **Annexure I: List of Stakeholders communicated their views on the Discussion Paper**

| <b>Sr. No.</b> | <b>Name of Stakeholders</b>                     |
|----------------|---|
| 1.             | Cleanmax Enviro Energy Solutions Pvt. Limited   |
| 2.             | India Development and Environment Agency        |
| 3.             | First Energy Private Limited                    |
| 4.             | M/s Yogitech Energy                             |
| 5.             | KPI Global Infrastructure Limited               |
| 6.             | O2 Power Pvt. Limited                           |
| 7.             | Continuum Green Energy (India) Pvt. Limited     |
| 8.             | Distributed Solar Power Association             |
| 9.             | Drashta Power Consultants Pvt. Limited          |
| 10.            | Ultratech Cement Limited                        |
| 11.            | Vena Energy Renewables Resources Pvt. Limited   |
| 12.            | Adani Green Energy Limited                      |
| 13.            | MPSEZ Utilities Limited                         |
| 14.            | Green Infra Wind Energy Limited                 |
| 15.            | Aditya Birla Renewables Limited                 |
| 16.            | The Chamber of Commerce & Industry Kutch        |
| 17.            | Indian Wind Turbine Manufacturing Association   |
| 18.            | Indian Wind Energy Association                  |
| 19.            | BA Prerna Renewables Private Limited            |
| 20.            | Bee Electric Pvt. Limited                       |
| 21.            | Renew Power Pvt. Limited                        |
| 22.            | Torrent Power Limited                           |
| 23.            | Gujarat Energy Transmission Corporation Limited |
| 24.            | State Load Dispatch Centre - Gujarat            |
| 25.            | Gujarat Urja Vikas Nigam Limited                |
| 26.            | Paschim Gujarat Vij Company Limited             |
| 27.            | Dakshin Gujarat Vij Company Limited             |
| 28.            | Gujarat State Electricity Corporation Limited   |



**Annexure II: List of Stakeholders who attended the Public Hearing and submitted their views on the subject matter.**

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| <b>Sr. No.</b> | <b>Name of Stakeholders</b>                     |
|----------------|---|
| 1.             | Cleanmax Enviro Energy Solutions Pvt. Limited   |
| 2.             | India Development and Environment Agency        |
| 3.             | First Energy Private Limited                    |
| 4.             | Renew Power Pvt. Limited                        |
| 5.             | Continuum Green Energy (India) Pvt. Limited     |
| 6.             | Distributed Solar Power Association             |
| 7.             | Drashta Power Consultants Pvt. Limited          |
| 8.             | Vena Energy Renewables Resources Pvt. Limited   |
| 9.             | Adani Green Energy Limited                      |
| 10.            | MPSEZ Utilities Limited                         |
| 11.            | Green Infra Wind Energy Limited                 |
| 12.            | The Chamber of Commerce & Industry Kutch        |
| 13.            | Indian Wind Turbine Manufacturing Association   |
| 14.            | Indian Wind Energy Association                  |
| 15.            | BA Prerna Renewables Private Limited            |
| 16.            | Bee Electric Pvt. Limited                       |
| 17.            | Torrent Power Limited                           |
| 18.            | Gujarat Energy Transmission Corporation Limited |
| 19.            | State Load Dispatch Centre - Gujarat            |
| 20.            | Gujarat Urja Vikas Nigam Limited                |
| 21.            | Paschim Gujarat Vij Company Limited             |
| 22.            | Dakshin Gujarat Vij Company Limited             |
| 23.            | Gujarat State Electricity Corporation Limited   |