



Discussion Paper

March 2024

“TARIFF FRAMEWORK FOR PROCUREMENT OF POWER BY DISTRIBUTION LICENSEES AND OTHERS FROM SOLAR ENERGY PROJECTS AND OTHER COMMERCIAL ISSUES FOR THE STATE OF GUJARAT”



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INTRODUCTION

The Gujarat Electricity Regulatory Commission (GERC or Commission) vide Order No.03 of 2020 dated 08.05.2020 & Order No. 06 of 2020 dated 05.08.2020 had issued Order on 'Tariff Framework for Procurement of Power by Distribution Licensees from Solar Power Projects and Others Commercial issues for the State of Gujarat'. Further, the Commission vide Orders dated 11.06.2021 & 06.07.2021 in Petition No. 1936 of 2021 had issued amendment to the Order No. 03 of 2020. The Control Period of the Order No. 03 of 2020 was up to 31.03.2023.

The Ministry of Power had notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 6th June 2022 ("MoP Rules") 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 Order No. 03 of 2020 dated 08.05.2020 read with Order No. 06 of 2020 dated 05.08.2020, Orders dated 11.06.221 and 06.07.2021 in Petition No. 1936 of 2021 for Solar Power Project was having control period up to 31.03.2023 and thereafter no extension in control period of said Order is granted. Therefore, in order 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 after 31.03.2023 with regard to Solar Power Project, the Commission found it more appropriate to adopt the 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 01.04.2023 i.e. after expiry of Control Period of previous Order No.03 of 2020.

Accordingly, the Commission intends to provide clarity on the tariff framework for the next Control Period effective from 01.04.2023 to 31.03.2027, for Procurement of Power generated from Solar Power Projects in the State of Gujarat by Distribution Licensees, under the powers conferred to it under Sections 61(h), 62(1) (a), and 86(1) (b) & (e) of the Electricity Act, 2003, and National Electricity Policy, 2005, and Tariff Policy, 2016.

The Commission presents this Discussion Paper as part of the regulatory process for specifying Tariff Framework for Procurement of Power by Distribution licensee and Others from Solar Energy projects and other commercial issues for the State of Gujarat for



next Control Period based on comments received from stakeholders on this Discussion Paper.



EXECUTIVE SUMMARY

The Gujarat Electricity Regulatory Commission (GERC or Commission) vide Order No. 03 of 2015 dated 17.08.2015 had issued generic Tariff Order for Procurement of Power by Distribution Licensees and Others, from Solar Power Projects in the State of Gujarat applicable for the Control Period up to 31st March 2018.

Subsequently, after the notification of competitive bidding guidelines by Ministry of New and Renewable Energy (MNRE), the Commission decided to discontinue with the 'generic tariff determination' regime for procurement of power by distribution licensees from Solar Energy Projects and adopted competitive bidding route in order to discover the most competitive tariff. The Commission thereafter vide Order No. 03 of 2020 had specified the tariff framework for Procurement of Power by Distribution Licensees and Others from Solar Energy projects. The Control period of the said order was up to March 31, 2023.

The Ministry of Power had notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 6th June 2022 ("MoP Rules") 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 Order No. 03 of 2020 dated 08.05.2020 read with Order No. 06 of 2020 dated 05.08.2020, Orders dated 11.06.2021 and 06.07.2021 for Solar Power Project was having control period up to 31.03.2023 and thereafter no extension in control period of said order is granted. Therefore, in order 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 after 31.03.2022 with regard to Solar Power Project tariff framework, the Commission found it more appropriate to adopt the 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 01.04.2023.

The Commission intends to provide clarity on the tariff framework for the prospective period, for procurement of power generated by the Solar Power Projects in the State of Gujarat by Distribution Licensees, under the powers conferred to it under Sections 61(h),



62(1) (a), and 86(1) (b) & (e) of the Electricity Act, 2003, and National Electricity Policy, 2005, and Tariff Policy, 2016.

The Government of India at the 26th Session of the Conference of the Parties (COP26) to the UNFCCC had announced India's commitment towards Climate Action. Reaching 500 GW non fossil based energy generation capacity by 2030 and meeting 50% of nations energy requirement from renewable energy by 2030 were two of the five nectar elements declared by the Government. To align with Government of India's ambitious solar expansion program, the Government of Gujarat had notified Gujarat Renewable Energy Policy 2023 on 04.10.2023 for harnessing the Renewable Energy potential in the State including Solar Energy. The State of Gujarat is blessed with excellent solar resources. The total installed capacity of solar projects in Gujarat stands at 8887 MW as of March 2023, being second highest in the Country after Rajasthan.

The Tariff Policy 2016 notified by Government of India recommends that the Procurement of Power by the distribution licensees should be carried out based on competitive bidding as per the provisions of Section 63 of the Electricity Act, 2003. Ministry of New and Renewable Energy (MNRE) notified Competitive bidding guideline for Procurement of Solar Power vide Notification No. 23/27/2017-R&R -1 dated 03.07.2017.

Accordingly, the Commission with effect from Order No. 03 dated 08.05.2020 had discontinued the 'generic tariff' determination regime and specified the tariff framework for Procurement of Power by Distribution Licensees and Others from Solar Energy projects.

Gujarat Renewable Energy Policy 2023

Government of Gujarat notified Gujarat Renewable Energy Policy 2023 on 04.10.2023, which aims to tap the renewable energy potential of State in a maximum possible manner. The policy aims (a) to attract participation from Industries, MSMEs, Organizations, and Consumers etc. for augmenting clean energy sources in the State, (b) to achieve the State's Sustainable Development Goals by rapid transition to clean energy sources, (c) to make available quality, reliable and cost competitive renewable power to consumers with conducive policy framework, (c) to achieve 50% of cumulative electric power installed



capacity from non-fossil fuel-based energy resources by the year 2030. This policy come into effect from the date of notification and shall remain in operation up to 30.09.2028 or till notification of the new policy, whichever is earlier.

The Key Findings of this Discussion Paper:

The Commission proposes to adopt the tariff for Solar power projects, based on the rates discovered through competitive bidding as was done during the control period of previous Order No. 03 dated 08.05.2020.

In case of tariff for Solar Power Projects below the threshold limit of eligibility for participating in Competitive Bidding two options, are being proposed in the discussion paper as given below:

- a) the tariff for Procurement of Power from Solar Power Projects below the threshold limit of eligibility for participating in Competitive Bidding shall be considered as lowest of the weighted average tariff for Solar Energy, available as on 1st 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 1st 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 Solar project capacity subject to adoption of discovered tariff by the Commission, 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.
- b) The Commission shall determine the tariff for Solar Power Projects below the threshold limit of eligibility for participating in Competitive Bidding under Section 62 of the Electricity Act, 2003.

The Commission shall firm up its decision on tariff for Solar power Projects below the threshold limit of eligibility for participating in Competitive Bidding after examining the comments / suggestions of the stakeholders.

Others Commercial Issues:



Transmission and Wheeling Charges

The norms for wheeling of power from Solar Projects for third party sale/captive use during the control period shall be governed by Ministry of Power's Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 ('MoP Rules, 2022') and the GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 ('GERC Green Energy Open Access Regulations') and subsequent amendment, if any.

In case of consumption of solar energy under third party sale wherein the RE generator and consumer does not claim RE attribute and allow the distribution licensees to avail the same for RPO compliance of distribution licensee, in such case 25 % concession in Cross Subsidy Surcharge and Additional Surcharge shall be applicable. Further, in case of consumption of Solar Energy for Captive Use/ Third Party Sale, the Open Access Charges such as Transmission Charges, Wheeling Charges, Banking Charges, Standby Charge etc. shall be applicable as applicable to Green Energy Open Access transaction as specified in GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 as amended from time to time.

Metering Point & Interconnection Point

- The Metering Point and Interconnection Point for the Solar Power Project shall be the point of connection at the GETCO substation where feasibility and connectivity is granted by GETCO. The Solar Project Developers shall provide energy metering and communication facility in accordance with the (a) CEA (Installation and Operation of meters) (Amendment) Regulations 2014 and its subsequent amendments, (b) Gujarat Electricity Grid Code 2013 and its subsequent amendments (c) GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments and (d) GERC Distribution Code 2004 and its subsequent amendments and (e) GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 and its subsequent amendments.
- Solar project developer shall have to provide ABT compliant meters at the interface points and shall conform to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2014, as amended from time to time.



Provided that in case of Solar Projects 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 the Solar Projects directly connected to ISTS network shall be governed by the provisions of CERC Regulations.

Pricing of Reactive Power

- The Pricing of Reactive Power shall be same as decided by the Commission in the GETCO Tariff Order time to time read with GERC Grid Code.

Sharing of CDM benefits:

It is proposed that the sharing of CDM benefits or any other benefit such as Carbon Credit or any other benefits under Clean Development Mechanism or any other mechanism under any provision from any source providing such benefits to the Solar Power Project for which it shall qualify to receive such benefit on the energy generation from the Solar based Power Generation Project shall be shared with the concerned authority by the Solar Power Project. The benefits which shall be receivable or received shall be shared with the procurer of power and / or licensee as under:

- a) 100% of the gross proceeds on account of such CDM benefit or any other benefit under Clean Energy Mechanism from any source to be retained by the project Developer in the first year after the date of commercial operation of the generating station.
- b) In the second year, the share 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.
- c) In case of PPA signed under competitive bidding process, the sharing of benefits received by the Solar power project shall be as per terms and conditions of bid documents read with the PPA.
- d) In case of Solar Power Project set up under Open Access regime, the sharing of above benefits shall be in accordance with the Agreement between power producer and



consumer.

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 Solar Projects as per applicable technical standards and best practices.

Banking of Surplus Solar Energy & Energy Accounting

The Energy Banking facility and settlement of banked energy for Solar based projects propose to be allowed on billing cycle basis as per provisions under MoP's Electricity (Promotion of Renewable Energy through Green Energy Open Access) Regulations 2022 and GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 and the subsequent amendments thereof.

Energy Accounting

The Energy accounting and energy banking facility for Solar Energy projects, shall be as per the provisions under MoP Green Energy Open Access Rules 2022 and GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 and the subsequent amendments, if any.

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 per the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 and the subsequent amendments, if any.

In case the consumer is not availing energy banking facility, the energy settlement shall be carried out on 15-minutes time block basis and no banking charges will be applicable.

Treatment for Surplus banked Energy for Solar Power Projects opting Open Access for Captive use and Third-Party Sale



The treatment for un-utilized surplus banked energy for Solar Power Projects opting Open Access for Captive Use / Third party sale, shall be governed by MoP Green Energy Open Access Rules 2022 and GERC (Terms and Conditions for Green Energy Open Access) Regulations 2024 and the subsequent amendments, if any.

Renewable Energy Certificates for Third-Party Sale and Captive Use of Solar Energy

Third party sale and Captive Use of Solar energy will be eligible for availing RECs as per CERC REC Regulations and subsequent amendments.

Security Deposit

- The Solar developers have to furnish a Bank Guarantee of Rs. 10 lakh /MW to GETCO based on allotment of transmission capacity.
- In case of delay in commissioning of Solar Power Project, the project developer shall have liberty to approach the Commission seeking for extension of time period, which will be decided by the Commission on the merit of the case.



CONTENTS

INTRODUCTION.....	2
EXECUTIVE SUMMARY.....	4
OPERATION AND MAINTENANCE OF DEDICATED LINES	9
ABBREVIATIONS	12
1. INTRODUCTION	14
1.1. BACKGROUND	14
1.2. THE ELECTRICITY ACT, 2003.....	14
1.3. NATIONAL ELECTRICITY POLICY (NEP)	15
1.4. TARIFF POLICY-2016 (TP)	17
1.5. GOVERNMENT OF GUJARAT RENEWABLE ENERGY 2023	20
1.6. GERC (TERMS AND CONDITIONS FOR GREEN ENERGY OPEN ACCESS) REGULATIONS, 2024.	22
1.7. RENEWABLE PURCHASE OBLIGATION IN GUJARAT	22
1.8. GERC SOLAR TARIFF ORDER, 2015	23
1.9. GERC SOLAR TARIFF ORDER, 2020	24
2. STUDY OF COMPETITIVE BIDS FOR SOLAR.....	25
2.1 INTRODUCTION	25
3. TARIFF FRAMEWORK, GENERAL PRINCIPLES AND OTHER CONSIDERATIONS.....	31
3.1. TARIFF FRAMEWORK.....	31
3.2. GENERAL PRINCIPLES	33
3.3. TRANSMISSION AND WHEELING CHARGES	35
3.4. METERING POINT & INTERCONNECTION POINT	38
3.5. OPERATION AND MAINTENANCE OF DEDICATED LINES	40
3.6. PRICING OF REACTIVE POWER.....	40
3.7. SHARING OF CLEAN DEVELOPMENT MECHANISM (CDM) BENEFITS.....	40
3.8. BANKING FACILITY & ENERGY ACCOUNTING	41
3.9. SECURITY DEPOSIT	44
3.10. EXEMPTIONS FROM DEMAND CUT.....	46
3.11. PROCEDURE FOR INTEGRATION OF SOLAR POWER PROJECT WITH THE GRID	46
3.12. COMMISSIONING THE SOLAR POWER PROJECT:	49
4. TARIFF FOR SOLAR POWER PROJECTS BELOW THE THRESHOLD LIMIT OF ELIGIBILITY.....	50
4.1. BENCHMARKING OF CAPITAL COST AND OTHER PERFORMANCE PARAMETERS	50
4.2. FINANCIAL PARAMETERS	51
4.3. COMPUTATION OF TARIFF FOR SOLAR POWER PROJECTS BELOW THRESHOLD LIMIT	53



Abbreviations

%	Percentage
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 Ltd.
GoG	Government of Gujarat
GoI	Government of India
GUVNL	Gujarat Urja Vikas Nigam Limited
ISTS	Inter-State Transmission System
KV	Kilo Volt
kW	Kilo Watt
kWh	Kilo Watt hours
kVARh	Kilo Volt Ampere Reactive Hour
M	Meter



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
QCA	Qualified Coordinating Agency
R&D	Research & Development
RE	Renewable Energy
REC	Renewable Energy Certificate
RFID	Radio Frequency Identification
RfS	Request for Selection
RoE	Return on Equity
RPO	Renewable Purchase Obligation
Rs.	Rupees.
RTU	Remote Terminal Unit
SCOD	Scheduled Commercial Operation Date
SECI	Solar Energy Corporation of India
SERC	State Electricity Regulatory Commission
SLDC	State Load Despatch Centre
STU	State Transmission Utility
T&D	Transmission & Distribution
V	Volt



1. INTRODUCTION

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 discussion paper on ‘Tariff Framework for Procurement of Power by Distribution Licensees and Others from Solar Power Projects to be commissioned during the Control Period defined in the Order .

The Commission had considered the provisions under the Gujarat Renewable Energy Policy, 2023 as well as the provisions under Green Energy Open Access Rules 2022 notified by the Ministry of Power, Government of India and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 while preparing this Discussion Paper. The Commission had issued the previous Order No. 03 of 2020 on ‘Tariff Framework for Procurement of Power by Distribution Licensees from Solar Power Projects in Gujarat. The control period of said Order has been expired on 31st March 2023. This Discussion Paper details out the tariff framework for the new control period to be specified in this order.

The Commission duly considered the various provisions of the Statutory/Policy documents, while preparing the Discussion Paper on the proposed Tariff framework.

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):

1.2.1. The Section 62(1)(a) of the Act provides for determination of tariff for supply of electricity by a Generating Company to a distribution licensee as under:

“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;”

1.2.2. Section 61(h) of the Act provides that, while specifying the terms and conditions of determination of tariff, the Commission shall be guided by the objective of promotion of co-generation and generation of electricity from renewable sources of energy.

Section 86 (1) (b) of the Act provides to regulate the procurement process of electricity by the distribution licensees as under:

“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;”

1.2.3. Section 86 (1) (e) of the Act mandates promotion of co-generation and generation of electricity from renewable sources of energy:

“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.”

1.2.4. 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 quoted below:

“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 utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy.”

1.3. 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, and Solar and bio-mass 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 of the Policy 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 commercialization 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.

5.12.2 : The Electricity Act, 2003, provides that co-generation and generation of electricity from non- conventional sources would be promoted by the SERCs by providing suitable measures for connectivity with the grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from non-conventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively, the share of electricity from non-conventional sources would need to be increased



5.12.3 *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.*

1.4. Tariff Policy-2016 (TP)

In compliance with the Section (3) of the Act, the Central Government has notified the revised Tariff Policy on 28th January 2016. The Tariff Policy elaborates the role of Regulatory Commissions, the mechanism for promoting renewable energy, the timeframe for implementation, etc. Clause 5.2 of the Tariff Policy provides 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, as reproduced below:

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 endeavor 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



Solar 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.

6)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.

7)Provided also that scheduling and despatch of such conventional and renewable generating plants shall be done separately.



8) *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 sources of energy through the inter-State transmission system for sale.*

9) *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."*

1.5. Government of Gujarat Renewable Energy 2023

The Government of Gujarat notified the 'Renewable Energy Policy, 2023' on 4th October 2023 for development of Renewable Energy projects in the State. Some important provisions of this Policy are listed below:

- This Policy came into force with effect from the date of notification and shall be remained in operation till 30th September 2028.
- The Policy states that the RE projects can be set up under this Policy for captive use and / or for selling electricity to any other third party whether registered under the REC mechanism or not, or selling electricity to distribution licensees, subject to the provisions of this Policy and in accordance with the provisions of the Electricity Act 2003, as amended from time to time.
- There shall be no capacity restriction for setting up of RE projects for captive use or for selling electricity to third party consumer with respect to the consumer's contracted demand! sanctioned load (kW/kVA/MVA) with DISCOMs. The AC capacity of the RE project shall be considered as the project installed capacity.
- 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.

- 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-minutes time block basis and no banking charges will be applicable.
- For utilization of State transmission / distribution network for wheeling of power from RE projects located within the State or from outside the State to consumer end, transmission and wheeling charges and losses as determined by GERC shall be levied as applicable to normal open access consumer depending on the location of the RE plant and the point of consumption.
- 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.
- 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 six (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 six (6) month period and such tariff shall remain fixed for the 25 year of the PPA.
- GUVNL shall be implementing, facilitating and monitoring agency for this policy while GEDA shall act as the State Nodal Agency (SNA) for implementation of Policy.



1.6. 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.

1.7. 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:

Table 1.: Renewable purchase obligation in Gujarat for FY 2017-18 to 2024-25

Financial Year	Total RPO	Non-Solar RPO		Solar RPO	Hydro
		Wind	Biomass bagasse and other	Solar	
2017-18	10.00%	7.75%	0.50%	1.75%	
2018-19	12.70%	7.95%	0.50%	4.25%	
2019-20	14.30%	8.05%	0.75%	5.50%	
2020-21	15.65%	8.15%	0.75%	6.75%	
2021-22	17.00%	8.25%	0.75%	8.00%	
2022-23	17%	8.25%	0.75%	8.00%	
2023-24	18.70%	8.40%	0.75%	9.50%	0.05%
2024-25	20.70%	8.55%	0.8%	11.25%	0.10%



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).

1.8. GERC Solar Tariff Order, 2015

GERC passed an Order No. 03 of 2015 declaring the tariff for procurement of energy from Kilowatt and Megawatt scale Solar Power Projects. The levelized tariffs for Solar Photovoltaic Plants determined by the Commission under the Order, was as follows:

Table 2.: Levelized tariff for megawatt-scale and kilowatt-scale photovoltaic systems

For Megawatt Scale Projects	July 1, 2015, to March 31,2016	April 1, 2016, to March 31,2017	April 1, 2017, to March 31,2018
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Without accelerated depreciation benefit	INR 6.77 per kWh	INR 6.30 per kWh	INR 5.86 per kWh
With accelerated depreciation benefit	INR 6.17 per kWh	INR 5.74 per kWh	INR 5.34 per kWh

For kilowatt Scale Projects	July 1, 2015, to March 31, 2016	April 1, 2016 to March 31, 2017	April 1, 2017 to March 31, 2018
Without accelerated depreciation benefit	INR 8.42 per kWh	INR 7.83 per kWh	INR 7.28 per kWh
With accelerated depreciation benefit	INR 7.64 per kWh	INR 7.11 per kWh	INR 6.61 per kWh

1.9. GERC Solar Tariff Order, 2020

GERC vide Order No. 03 of 2020 dated 8th May, 2020, specified the “Tariff Framework for Procurement of Power by Distribution Licensees and Others from Solar Energy Projects and Other Commercial issues for the State of Gujarat” and thereafter the Commission passed an amendment on 05th August 2020 in line with the Government of Gujarat Policy for Development of Small Scale Distributed Solar Project, 2019 dated 06.03.2019 and further amendment on Orders dated 11.06.2021 & 06.07.20221 in Petition No. 1936 of 2021 in line Gujarat Solar Policy 2021.



2. STUDY OF COMPETITIVE BIDS FOR SOLAR

2.1 Introduction

Ministry of Power (MoP), Government of India has formulated the National Tariff Policy, 2016 giving specific guidance on purchase of power generated from renewable energy sources. The Clause 6.4(2) of the Tariff Policy states as under:

“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 Solar PV Power 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.”

Solar Energy Corporation of India Limited (SECI), a Central Public Sector Undertaking (CPSU) under the administrative control of MNRE, was set up on 20th September, 2011 to facilitate the implementation of JNNSM and achievement of targets set therein. The Government later converted it into a Section-3 Company under the Companies Act, 2013 and the company covers entire Renewable Energy Projects.

The SECI plays the role of a nodal agency for conducting e-reverse auction for procurement for power from Wind, Solar, and Wind Solar Hybrid and Storage Projects. The SECI first started with the competitive bidding of Solar and with good response from investors, it floated the tenders for Procurement of Power from Wind Projects, Solar and Wind Solar Hybrid Projects, and energy storage based RTC power projects. SECI's Bid has received very good response for power procurement from renewable energy sources in the past and achieved lower tariffs than that for conventional sources.

Followed by SECI, the distribution licensee in various States like Maharashtra, Gujarat, Tamil Nadu etc. started procurement of RE power under competitive bidding route under Section 63 of the Act. The SERCs of these States mandated the licensees to procure the electricity under competitive bidding. The following sections of this chapter discusses the result of the competitive bidding undertake by SECI and State DISCOMs / Holding Company.



Table 3: RfS No. Torrent Power Limited's 300 MW Solar Project (August 2019)

RfS No. Torrent power's 300 MW solar project (August 2019)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Adani Green Energy	150	2.22
Torrent Power Generation	150	2.22

(Source: <https://www.mercomindia.com/torrent-power-adani-green-300-mw-auction>)

Table 4: RfS No: GUVNL 350 MW Solar Project (Tranche- VIII) (April 2020)

RfS No: GUVNL 350 MW solar project (Tranche- VIII) (April 2020)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Vena Energy	40	2.61
Juniper Green Energy	190	2.63
Tata Power	120	2.64

(Source: <https://www.mercomindia.com/gujarat-500-mw-solar-auction>)

Table 5: RfS No. GUVNL 700 MW Solar Project (Tranche- IX) (August 2020)

RfS No. GUVNL 700 MW Solar Project (Tranche- IX) (August 2020)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Venna Energy Renewables	100	2.78
Tata Power	100	2.78
ReNew Power	200	2.79
SJVN Limited	100	2.8
TEQ Green Power (O2 Power)	200	2.81

(Source: <https://www.mercomindia.com/winners-gujarat-solar-auction>)

Table 6: RfS No. GUVNL 500 MW Solar Project (Tranche- XIV) (April 2022)

RfS No. GUVNL 500 MW Solar Project (Tranche- XIV) (April 2022)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Aditya Birla	300	2.3
Hinduja Renewable	120	2.3
SJVN	80	2.31

(Source: <https://www.mercomindia.com/aditya-birla-hinduja-sjvn-winners-guvnl-solar-auction>)

Table 7: RfS No. GUVNL 750 MW Solar Project (Tranche- XVI) (July 2022)

RfS No. GUVNL 750 MW Solar Project (Tranche- XVI) (July 2022)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Solarcraft Power India 2 (Bluine Energy)	120	2.49
Solaire Direct Energy (Engie)	200	2.50
Tata Power Renewable Energy	300	2.65
Utkrisht Solar Energy	130	2.66

(Source: <https://www.mercomindia.com/blupine-engie-tata-power-upc-winners-guvnl-750-mw-solar-auction>)

Table 8: RfS No. GUVNL 500 MW Solar Project (Tranche- XVIII) (October 2022)

RfS No. GUVNL 500 MW Solar Project (Tranche- XVIII) (October 2022)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Spring Energy	200	2.51
Ib Vogt	130	2.52
Hinduja Renewables	120	2.52
Solarcraft Power India 9 (Bluine Energy)	50	2.52

(Source: <https://www.mercomindia.com/sprng-ib-vogt-hinduja-blupine-win-guvnl-500-solar-auction>)

Table 3: MSEDCL 500 MW Phase IX (October 2022)

MSEDCL 500 MW Phase IX (October 2022)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Solar Arise	100	2.90
SJVN Green Energy	200	2.95
Tata Power Renewable Energy	200	2.97

(Source: <https://www.mercomindia.com/solararise-sjvn-green-energy-tata-power-msedcls-500-mw-solar>)

Table 4: MSEDCL 500 MW Phase VIII

MSEDCL 500 MW (Phase VIII), August 2022		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
NTPC Renewable Energy	200	2.82
Avaada Energy	300	2.83

(Source: <https://www.mercomindia.com/ntpc-avaada-winners-msedcls-500-mw-solar-auction>)

Table 5: MSEDCL 500 MW Phase VII, June 2022

MSEDCL 500 MW (Phase VII) June 22		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
SJVN Green Energy	200	2.9
Juniper Green Energy	75	2.9
Tata Power Renewable Energy	150	2.91
SAEL	50	2.91
Avaada Energy	25	2.91

(Source: <https://www.mercomindia.com/sjvn-juniper-tata-sukhbir-avaada-win-msedcls-500-mw-solar-auction>)



Table 6: SECI's Karnataka (Tranche- X)(1.2 GW)

SECI's Karnataka (Tranche- X)(1.2 GW), Feb 2022		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
Project Eight Renewable Power Plant Private Limited (Ayana Renewable Power)	300	2.36
Fortum	300	2.37

(Source: <https://www.mercomindia.com/ayana-fortum-winners-seci-solar-auction>)

Table 7: SECI's Rajasthan (Tranche- IV) 1785 MW (May 2021)

SECI's Rajasthan (Tranche- IV) 1785 MW (May 2021)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
NTPC Renewable Energy	500	2.17
Spring Natural Power Source	200	2.17
Calpine Subsico Solar energy	90	2.17
Metka EGN Singapore Holdings 3 PTE	20	2.17
ReNew Solar Power	25	2.91
ACME Solar	375	2.18

(Source: <https://www.mercomindia.com/secis-solar-auction-gets-lowest-tariff>)

Table 8: NTPC 1.2 GW ISTS B00- 6 Solar Tender (July 15 2020)

NTPC 1.2 GW ISTS B00- 6 Solar Tender (July 15 2020)		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
O2 Power	400	2.43
Azure Power	300	2.43
Tata Power	370	2.43



Amp Energy Green	100	2.44
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(Source: <https://www.mercomindia.com/amp-energy-tata-azure-o2-power-ntpc-solar-auction>)

Table 9: NHPC Solar Auction for 2000 MW

NHPC Solar Auction for 2000 MW		
Name of Solar Developer	Quantity (MW)	Rate (Rs./kWh)
SB Energy (SoftBank)	600	2.55
Axis Energy Ventures	400	2.55
O2 Power	380	2.55
EDEN Renewables	300	2.55
Avaada Energy	320	2.56

(Source: <https://www.mercomindia.com/softbank-o2-power-eden-renewables>)



3. TARIFF FRAMEWORK, GENERAL PRINCIPLES AND OTHER CONSIDERATIONS

3.1. Tariff Framework

The Commission in the Order No. 03 of 2020, mandated the distribution licensees for procurement of power from the Solar projects at tariff discovered through competitive bidding. The results of the tariff discovered by SECI as well as GUVNL as discussed in the previous chapter are quite encouraging wherein most of the cases the discovered tariff is in the range of Rs.2.10/kWh to Rs 3.00 /kWh.

The Commission has observed that as per the provisions of the National Tariff Policy, procurement from renewable energy projects by distribution licensees is recommended through competitive bidding to keep the tariff low. Accordingly, the Government of India and various State Governments have initiated competitive bidding process for procurement of power from Wind and Solar Energy Projects, in which the discovered tariff for Wind and Solar Energy Projects has shown a substantial reduction. The same has been noticed in the case of the State specific bidding conducted by the GUVNL and national level bidding conducted by SECI including State specific bidding results of few other States like Maharashtra, Tamil Nadu etc.

In view of above, the Commission decides to continue with the competitive bidding regime for determination of tariff for procurement of power by distribution licensees from Solar Power Projects during the control period of new tariff order. Accordingly, the Commission directs that the distribution licensees may procure electricity from the prospective Solar Projects through competitive bidding under Section 63 of the Act or by following competitive bidding process followed by SECI/MNRE etc. Further, the distribution licensees may approach the Commission for adoption of the tariff discovered through such competitive bidding process.”

The Ministry of Power, Government of India had notified Green Energy Open Access Rules, 2022 which made effective from date of its Notification i.e. effective from 06th June, 2022.



The said Rules, 2022 applicable to green energy project consists of various provisions on Transmission Charges, Wheeling Charges, Cross Subsidy Surcharge, Additional Surcharge, Banking facility and Charges etc. As the Rules framed under Section 176 of the Electricity Act, 2003, it is necessary to give effect to them. It also needs to be considered that the control period of previous Solar Tariff Order No. 03 of 2020 was expired on 31.03.2023 and no extension in the control period of said Order is granted. Further, the Gujarat Renewable Energy Policy 2023 provides that Energy Accounting Mechanism, Energy Banking facility & charges and applicability of Open Access charges for wheeling of energy from RE projects shall be governed by the provisions of MoP, Green Energy Open Access Rules, 2022 and Regulations framed by GERC from time to time. Therefore, it is considered appropriate that the provisions of this Order be made effective from 01.04.2023 i.e. after expiry of Control Period of Order No. 03 of 2020.

In view of same, the Commission proposes to fix the Control Period of this Order effective from 01.04.2023 upto 31.03.2027. The Solar Power Projects commissioned post 31.03.2023, shall be governed by the regulatory framework proposed in this discussion paper.

Further, there could be cases of Solar Power Projects below the threshold limit of eligibility (5 MW) for participating in Competitive bidding. The Commission propose two options for determination of tariff for the Solar power projects falling below the threshold limit of eligibility for participating in the competitive bidding process, as given below:

- a) Tariff for Solar Power Projects falling below the threshold limit of eligibility, shall be considered as lowest of the weighted average tariff for Solar Energy, available as on 1st 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 1st 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 Solar project capacity subject to adoption of discovered tariff by the Commission, *plus 20 paise per unit, and such tariff shall remain fixed for the 25 year.*



- b) Tariff for Solar power projects falling below the threshold limit of eligibility shall be determined by the Commission under Section (62) of the Act as proposed in Chapter 4 of this discussion paper.

The Commission would firm up its decision regarding suitable option for Tariff determination for Solar power projects falling below the threshold limit of eligibility after examining the comments/ suggestions received from the stakeholders.

3.2. General Principles

a) Control Period

As discussed above, the Commission proposes that the new control period of the tariff framework under this discussion paper shall be effective from 01.04.2023 upto 31.03.2027.

b) Plant and Machinery

The Solar power projects using new plant and machinery installed and commissioned during the new control period as proposed in this discussion paper will be eligible to sell power to distribution licensees of Gujarat at the tariff proposed by the Commission.

c) Useful life of Plant

The Useful Life for the Solar Power Projects to be commissioned under PPA signed during the new Control Period shall be considered as 25 years from their date of commissioning.

d) Tariff Period

The tariff period for the tariff framework approved by the Commission for Procurement of Solar Power Projects by the distribution licensees in the State shall be 25 years.

e) Eligibility Criteria

The Solar Power Projects to be installed and commissioned under PPAs signed during the new control period will be eligible to sell power to distribution licensees of Gujarat



at the tariff approved by the Commission under this Tariff framework and consumption of solar energy for Captive Use / third party sale.”

f) Forecasting and Scheduling for Solar power

The Solar 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 Solar 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 Solar 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 Charge Rate and Normal Rate of Charges shall have the meaning as defined in CERC DSM Regulations from time to time.

Provided also that in case of Solar 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.

g) Applicability of Merit Order Dispatch Principle



The Solar power plants irrespective of plant capacity shall be considered as 'MUST RUN' power plants and shall not be subjected to 'Merit Order Dispatch' principles.

3.3. Transmission and Wheeling Charges

- **Wheeling of Power for 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 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 of energy at 66 KV level and drawl of energy below 66 KV voltage level in such case, wheeling of Power for third party sale from Solar Power Projects shall be allowed on payment of transmission charges, transmission losses on energy feed basis as measured at receiving Sub-Station of GETCO, wheeling charges and losses on the energy fed into grid, 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.
- c) In case point of injection and drawl at 11 KV or below levels lies within area of same DISCOM, the wheeling of energy from Solar Project shall be allowed upon payment of Wheeling Charges and Wheeling Losses of energy fed to grid, 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.
- d) The Commission decides to promote the third-party sale /consumption of Solar Energy by allowing 25% concession in the Cross Subsidy Surcharge and Additional Surcharge



wherein the RE generator and consumer does not claim RE attribute and allow distribution licensee to avail the same for RPO compliance.

The aforesaid concession granted by the Commission with a view to promote RE generation by granting 25% concession to the Cross Subsidy Surcharge and Additional Surcharge to the consumers. Such consumers shall be benefited by way of lower surcharges while the distribution licensee are benefited by way of non-purchase of REC or Renewable Energy for RPO Compliance.

- e) No concession in the Cross Subsidy Surcharge shall be allowed to the Solar Energy Generator who are selling power under third party sale and utilizing RE attribute for RPO compliance of the consumer. They shall be liable to pay 100% Cross Subsidy Surcharge and Additional Surcharge as determined by the Commission read with the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

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 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 below 66 KV voltage level, wheeling of electricity generated from the Solar power Project to desired location(s) within the State shall be allowed on payment of on payment of transmission charges and transmission losses on



energy feed basis as measured at receiving Sub-Station of GETCO, wheeling charges and losses of the energy fed to the grid, 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.

- c) In case point of injection and drawl at 11 KV or below levels lies within area of same DISCOM, the wheeling of energy from Solar Project shall be allowed upon payment of Wheeling Charges and Wheeling Losses of energy fed to grid, 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.

Provided further that the person consuming energy generated from Solar 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 Solar Power Project.

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

Solar power 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.

3.4. Metering Point & Interconnection Point

The Commission proposes following with regard to Metering arrangement:

- The Metering Point and Interconnection Point for the Solar Power Project shall be the point of connection at the GETCO substation where feasibility and connectivity is granted by GETCO. The Solar Project Developers shall provide energy metering and communication facility in accordance with the (a) CEA (Installation and Operation of meters) (Amendment) Regulations 2014 and its subsequent amendments, (b) Gujarat Electricity Grid Code 2013 and its subsequent amendments (c) GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments, (d) GERC Distribution Code 2004 and its subsequent amendments and (e) GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and its subsequent amendments.



- The Solar Power Projects shall have to provide four quadrant ABT compliant meters at the interface point which shall conform to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2014, as amended from time to time. GETCO/DISCOM to stipulate necessary specifications in this regard. The ABT meter shall be AMR compatible.
- For the purpose of commercial settlement and energy accounting, the metering point shall be at the receiving end sub-stations of GETCO. The electricity generated shall be metered and readings taken jointly by Solar Project developer with the representative of DISCOM and GETCO at the metering point, on monthly basis.
- The Solar Project Developers shall also install Remote Terminal Unit (RTU) at the pooling station at their own cost for transferring the real time data to SLDC for its monitoring purpose, and in accordance with the GERC orders from time to time.
- State Load Dispatch Centre shall certify actual injected energy and energy drawn (if any) from local DISCOM on monthly basis.
- Energy metering and communication facility shall be provided by the developer of Solar 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 Solar Power Project Developer shall have to provide ABT compliant (four quadrant) meters 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 from Solar project for each consumer/customer. Energy Accounting shall be done by SLDC.

Provided that in case of Solar 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 Solar Projects directly connected to ISTS network shall be governed by the provisions of CERC Regulations.

3.5 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 Solar Projects as per applicable technical standards and best practices.

3.6 Pricing of Reactive Power

Reactive Power is required by the Solar Energy generators during initial start-up and station transformers also continuously require reactive power from the grid. Hence, in order to maintain grid stability, it is necessary to limit such reactive power consumption from the grid by installation of suitable compensation devices.

In order to restrain the solar power projects from consuming more reactive power from the grid and to encourage them to install suitable compensation devices to limit such reactive power consumption, the Commission in the previous Order had levied reactive power charges.

The pricing of reactive power for all prospective solar power projects shall be same as decided by the Commission in the GETCO's Tariff Order from time to time read with GERC's Grid Code.

The above approach is proposed to be adopted for all prospective solar power projects.

3.7 Sharing of Clean Development Mechanism (CDM) Benefits



It is proposed that the sharing of CDM benefits or any other benefit such as carbon credit or any other benefits under Clean Development Mechanism or any other mechanism under any provision from any source providing such benefits to the Solar power project for which it shall qualify to receive such benefit on the energy generation from the Solar based power generation project shall 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:

- 1) 100% of the gross proceeds on account of such CDM benefit or any other benefit under Clean Energy Mechanism from any source to be retained by the project Developer in the first year after the date of commercial operation of the generating station.
- 2) In the second year, the share 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.”
- 3) In case of PPA signed under competitive bidding process, the sharing of benefits received by the solar power project shall be as per terms and conditions of bid documents read with the PPA.

The above approach is proposed to be adopted for all prospective Solar power projects.

3.8 Banking facility & Energy Accounting

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 Solar 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 Solar 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. Transmission and /or Distribution network of the State with or without utilization of ISTS Network.

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

3.8.1. Energy Accounting

Energy Accounting related provision as provided below shall be applicable for captive use as well as third party open access transaction for Solar Projects:

Case 1: The Solar 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 Solar 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 Solar 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 (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and as amended from time to time.
- (vi). The consumer/project developers 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.

Case 2: For Solar Projects not availing banking facility:

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

- i. For net import of energy, 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 Solar energy, after giving set-off on 15 minutes 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.

Case 3: Project registered under REC Mechanism:

- i. Solar Projects availing open access for captive use/third-party sale under REC mechanism shall be governed as per CERC REC Regulations.
- ii. 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.
- iii. The provisions related to banking facility and charges, energy accounting mechanism, treatment for surplus energy etc. shall be governed as per the GERC Green Energy Open Access Regulations as amended from time to time.

Cross Subsidy Surcharge and Additional Surcharge, if any, and open access charges shall be applicable as applicable to green energy open access transactions as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time.

3.9 Security Deposit

The objective of specifying tariff framework for procurement of solar power is to promote development of renewable energy in the state. A procedure of giving permission for the proposed Solar projects, based on the load flow studies has been followed by the GETCO. Thus, the proposed evacuation system from the pooling station of Solar projects forms part of the overall GETCO System. While timely completion of power evacuation system for such Solar projects is essential, timely execution of project is also equally important. Non-completion of



Solar projects leads to idling of transmission resources. The security deposit is furnished by the project developer in order to assure GETCO about the seriousness of the project. It is proposed that for the new control period.

The Solar 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 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

The Solar 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 Agreement/ PPA.

The Solar 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 Solar 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 Solar 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 Exemptions from demand cut

The Commission proposed that:

Exemption from demand cut to the extent of 50% of installed capacity of Solar project in case of captive consumption and third-party sale within the State". The above exemptions provided by the State Government shall be applicable for the prospective period.

3.11 Procedure for Integration of Solar Power Project with the Grid

The Commission proposes that prior to commissioning and Integration of Solar Project to the grid the Solar Generators / developers should adhere to following procedures and amendments made in it from time to time in this regard.

The Solar generator/developer 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 and concerned Distribution Licensees before declaration of SCOD that the said generating station including main plant equipment's such Solar PV Modules, Inverters, Auxiliary Systems, as case may, 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 have availed ALMM Certificate, if applicable.

i. Document Submission to SLDCs

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

- Covering letter.
- Name of Pooling Station/ Sending End Sub-Station, Installed Capacity of the project, connected GETCO/Transmission Utility Substation.
- Proposed date of synchronization of 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 paid to SLDC.
- DISCOM name for allocation of power / type of contact in detail.
- Copy of application for GEDA registration for installation for renewable generator / pooling station along with specific details under which Policy/ Order of the Commission, Project is installed.
- Approval obtained from various statutory agencies i.e. STU/GEDA/DISCOM for installation and feasibility of renewable generator pooling station, as applicable.
- Parallel connectivity approval from STU/DISCOM, as applicable.
- Approved metering scheme, ABT meter details, Commissioning report/MOM, as applicable.
- GETCO connectivity agreement/DISCOM connectivity agreement or BPTA, as applicable.
- PPA/Wheeling Agreement/Agreement for Third Party Sale /, 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 CEA standard applicability.



- Copy of Letter conveying Seven Digit ABT Meter Sr. No. for evacuation facility along with Duly notarized undertaking, as applicable.
 - RTU commissioning report/MOM- for communication of real time data up to sub SLDC/SLDC & 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 details of 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), whenever applicable.
 - Details of Payment Security Mechanism
 - Static Data of renewable generator
 - Other supporting documents, as per requirement
 - Consent/Concurrence letter for “Generator Name” being lead generator by all Generators, if applicable.
 - QCA appointment letter, as applicable.
 - On commissioning by GEDA, 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.
- a) Connectivity Details: Connection Agreement and connectivity grant letter by STU/ DISCOM,
- b) Copy of Coordination Agreement with the Qualified coordinating Agency(QCA)/Lead/Principal Generator, if any, whenever applicable.
- ii. Static Details: Static parameters for Solar Generating Station has to be provided as per the details provided below:**

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

3.12 Commissioning the Solar Power Project:

After following the procedure of integration of Solar Power Project with grid, the commissioning of Solar Power Projects be followed. Commissioning with respect to the Solar project shall be certified by GEDA in presence of GETCO and / or Distribution Licensee representative. GEDA should ensure that PV Modules are installed as per ALMM Certificate issued for PV Modules by concerned Authority, if applicable, and as per Indian Standards on Renewable Energy notified by BIS 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 and /or GETCO. The GEDA shall co-ordinate with DISCOMs and/or GETCO for fixing date of commissioning of plant. The representatives of GEDA, GETCO and / or Distribution Licensees shall sign on the commissioning of project by recording necessary details. Non-signing of documents of commissioning of Solar Projects by any of the representative of above entity, shall not qualify as valid 'commissioning' of the project. The commissioning certificate consists of the details of the Solar PV Modules along with



RFID details, ALMM Certificate etc, if applicable and details of Inverter etc. Further, it shall also ensure that generation data from the Solar project shall also transferred in the real time basis through RTU to SLDC.

4. TARIFF FOR SOLAR POWER PROJECTS BELOW THE THRESHOLD LIMIT OF ELIGIBILITY

4.1. Benchmarking of Capital Cost and Other Performance Parameters

4.2.1 Benchmark capital cost for Solar power projects in Gujarat (projects \leq 5 MW)

As per the prevalent market conditions, the benchmark capital cost of the Solar Power Projects (<5 MW) is proposed as Rs 345 Lakh /MW for determination of tariff for the for Solar power projects below the threshold limit of eligibility in the new control period. The above cost is including evacuation cost up to the GETCO Sub-Station.

4.2.2 Operations and maintenance cost:

Operations and Maintenance (O&M) cost consists of the statutory charges, spares, employee cost, administrative and general expense, consumables, repairs and maintenance, and insurance expenses, etc.

It is proposed to consider the O&M expenses associated with Solar power projects as Rs 3.00 Lakh/MW for first year of operation with an annual escalation of 3.84% per annum for tariff determination purpose.

4.2.3 Capacity Utilization factor (CUF):

Based on the experience of the operational Solar power projects in Gujarat and in order to promote new technology and efficient operation, it is proposed to be consider the normative Capacity Utilization Factor (CUF) of 19% for Solar Power Projects to be commissioned in next control period in the State of Gujarat for tariff determination purpose.



4.2. Financial Parameters

4.2.1. Debt-equity ratio: Tariff Policy formulated by the Ministry of Power, Govt. of India, stipulates debt-equity ratio of 70:30 for power projects. GERC Multi Year Tariff (MYT) Regulations, 2016 notified by the Commission also provide that the debt-equity ratio should be kept as 70:30. Hence, it is proposed to consider the debt-equity ratio as 70:30 for the new control period.

4.2.2. Interest on term loan and Loan tenure: The Commission has noted that the project financing interest rates are typically indicated by SBI MCLR. A reasonably sound project could avail funding at 200 basis points above the MCLR announced by State Bank of India (SBI). It is proposed to consider the interest rate on term loan as SBI MCLR rate (8.15%) plus 200 basis points which works out to 10.15 % for computation of interest on term loan and loan repayment period as 15 years for tariff determination purpose.

4.2.3. Depreciation: GERC Multi Year Tariff (MYT) Regulations, 2016 notified by the Commission provide that depreciation rate should be calculated based on Straight Line Method. The MYT Regulations further provide that asset is to be depreciated up to 90% of its initial value (considering residual value as 10% of its initial value) over the entire asset life. To facilitate the principal loan repayment, the Commission decides to consider the depreciation rate as 4.67% per annum during the loan repayment period i.e. first 15 years; and beyond the loan tenure, the depreciation is allowed as per 'Straight Line Method' over the remaining useful life of the plant i.e. depreciation at rate of 2% per annum from 16th to 25th year. In view of this it is proposed to consider depreciation at the rate of 4.67% per annum for the first 15 years, and 2% from 16th year to 25th year for tariff determination purpose during the control period.

4.2.4. Working capital and Interest on working capital: The Commission in its tariff orders for renewable energy projects (without fuel cost component) had considered the components of working capital as follows:

- O&M expenses for one month.
- Receivables of one month charges for sale of electricity.



- Maintenance spares at 1% of the capital cost escalated at 5% per annum.

It is proposed to continue the same approach for determination of the working capital requirement for Solar power projects during the control period.

Interest on working capital: GERC (MYT) Regulations 2016, states that the interest on working capital is to be calculated at 250 basis points above the base rate / MCLR. In view of the above, it is proposed to consider the interest on working capital equal to SBI MCLR plus 250 basis points, which works out as 10.65 %.

4.2.5. Return on Equity: In line with GERC (Multi Year Tariff) Regulations, 2016, the Commission follows the principle of allowing 14% RoE plus the applicable tax payment for conventional and renewable power projects. It is propose to consider the RoE of 14% and the tax payment of MAT @ 17.47 % per annum for first 10 years and corporate tax @ 34.94% (IT Rate 30% + 12% Surcharge + 4% Cess) per annum for the next 15 years as a cost for the purpose of computing the tariff for the new control period starting from date of this order.

4.2.6. Discount rate: The discount rate has been considered by CERC and other SERCs as Weighted Average Cost of Capital (WACC). The formula for computation of WACC is given below.

WACC = Cost of Debt + Cost of Equity

Cost of Debt = $0.70 \times (\text{Market Rate of Interest}) \times (1 - \text{Corporate tax})$

Cost of Equity = $0.30 \times \text{Return on Equity (i.e., normative 14\%)}$

Interest Rate considered for the loan component (i.e., 70% of the capital cost) is 10.15 %. For the equity component (i.e., 30% of the capital cost), the rate of Return on Equity (RoE) is considered at a post-tax rate of 14%, as a normative factor. Further, Corporate Tax rate of 34.94% has been considered.

In view of above, the Commission proposes to consider the discount factor as 9.32% for levelized tariff calculation in this order.



4.2.7. Accelerated depreciation: Following principles have been considered for ascertaining the Income Tax benefit on account of accelerated or additional depreciation for the purpose of tariff determination:

- i. The assessment of benefit shall be based on normative Capital Cost, accelerated/ additional depreciation rate as per the relevant provisions of the Income Tax Act and the Corporate Income Tax rate;
- ii. Capitalisation of Solar Power Projects for the full financial year;
- iii. Per-unit benefit shall be derived on levelized basis at a discounting factor equivalent to the post-tax weighted average cost of capital.

Presently, RE project owners can avail accelerated depreciation at the rate of 40% in the first year on a written-down value (WDV) basis. In addition to this 40% depreciation, the amendment in the Finance Act has allowed an additional depreciation of 20% to the power projects during first year of project commissioning. With this, Solar Power Projects can avail 60% depreciation in the first year of commissioning. The Commission has considered above depreciation rate while calculating per unit AD benefit.

4.3. Computation of Tariff for Solar Power Projects below threshold limit

The benchmark parameters proposed for tariff determination during the control period starting from the date of Order are tabulated below.

Table 10: Proposed benchmark parameters for Solar Power Projects below threshold limit (< 5 MW) to be commissioned in next control period

Parameters	Value	Unit
Financial Parameters		
Capital Cost of Solar Power Project	345	Rs. Lakhs /MW
Non - Depreciable Amount / Salvage value	10.00%	% of Capital Cost
Depreciable Amount (Cap Cost Less non-depreciable Cost)	310.5	Rs. Lakhs
Debt Fraction	70.00%	%



Parameters	Value	Unit
Debt	241.50	Rs. Lakhs
Equity	103.50	Rs. Lakhs
TOTAL (Debt+Equity)	345	Rs. Lakhs
Interest Rate on Term Loan	10.15%	%
Repayment Period	15	Years
Moratorium Period	0	Years
Term loan period for principal payment	15	Years
Depreciation for First 15 years (Straight Line Method)	4.67%	% p.a.
Depreciation for 16-25 years (Straight Line Method)	2.00%	% p.a.
Discount Rate	9.32%	%
O&M cost	3.00	Rs. Lakhs / MW
O&M Cost Escalation	3.84%	% p.a.
Return on Equity (1-10 years)	14.00%	%
Return on Equity (11-25 years)	14.00%	%
Minimum Alternative Tax (First 10 years)	17.47%	%
Corporate Tax (Last 15 years)	34.94%	%
Interest on working capital	10.65%	%
Technical Parameters		
Capacity of the Solar Project	1	MW
Capacity Utilization Factor	19.00%	%
Annual Generation	16.64	Lakh kWhs
Life of Plant and Machinery / Project Life	25	Years

Tariff	Value	Unit
Levelling tariff without considering AD benefits	2.96	Rs. /kWh
AD benefit	0.31	Rs. /kWh
Net tariff with considering AD benefits	2.65	Rs. /kWh



The Solar Power Project developers may be eligible for getting Financial Assistance / Financial Incentive / Subsidy/ other benefits from the Central Government, if any. Such benefits as may be availed by the project developers need to be factored in the computation of above tariff determined by the Commission. In case project developer avails Financial Assistance / Financial Incentive / Subsidy/ other benefits from the Central Government / State Government, if any, the Commission shall redetermine the tariff for respective project developers by factoring the same in the above tariff based on the benefits availed by project developers.

Stakeholders may offer their comments on or before 04.04.2024. The Public hearing in this regard will be held on 05.04.2024 at 11:30 AM at GERC's Office at 6th Floor, GIFT CITY Gandhinagar. Stakeholder either in person or through their authorized representative may remain present.

Place: Gandhinagar.
Date: 02/03/2024.

Sd/-
[Ranjeeth Kumar J., IAS]
Secretary
Gujarat Electricity Regulatory Commission
Gandhinagar, Gujarat