



**DETERMINATION OF GENERIC TARIFF AND OTHER TERMS AND  
CONDITIONS FOR PROCUREMENT OF POWER BY DISTRIBUTION  
LICENSEES FROM MUNICIPAL SOLID WASTE TO ENERGY PROJECTS  
IN THE STATE OF GUJARAT**

**February, 2024**

**Gujarat Electricity Regulatory Commission  
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## Abbreviations

%	Percentage
ABT	Availability-Based Tariff
APPC	Average Pooled Purchase Cost
CEA	Central Electricity Authority
CERC	Central Electricity Regulatory Commission
CPCB	Central Pollution Control Board
DISCOM	Distribution Company
FY	Financial Year
GCV	Gross Calorific Value
GEDA	Gujarat Energy Development Agency
GERC	Gujarat Electricity Regulatory Commission
GETCO	Gujarat Energy Transmission Corporation Ltd.
GID	Gujarat Infrastructure Development
GoG	Government of Gujarat
GPCB	Gujarat Pollution Control Board
GUVNL	Gujarat Urja Vikas Nigam Limited
IREDA	Indian Renewable Energy Development Agency
KV	Kilo Volt
kW	Kilo Watt
kWh	Kilo Watt hours
M	Meter
MERC	Maharashtra Electricity Regulatory Commission
MNRE	Ministry of New and Renewable Energy
MoEF	Ministry of Environment, Forest and Climate Change
MoHUA	Ministry of Housing and Urban Affairs
MSW	Municipal Solid Waste
MW	Mega Watt
NEP	National Electricity Policy
NGT	National Green Tribunal
O&M	Operation and Maintenance
PLF	Plant Load Factor
PPA	Power Purchase Agreement



R&D	Research & Development
RDF	Refuse Derived Fuel
RE	Renewable Energy
REC	Renewable Energy Certificate
RoE	Return on Equity
RPO	Renewable Purchase Obligation
Rs.	Rupees
RTU	Remote Terminal Unit
SERC	State Electricity Regulatory Commission
SLDC	State Load Despatch Centre
SOP	Standard Operating Procedure
STU	State Transmission Utility
SWM	Solid Waste Management
UDC	Urban Development Collective
UDD	Urban Development Department
ULB	Urban Local Body
WtE	Waste to Energy



## Order No. 02 of 2024

**In the matter of:**

**DETERMINATION OF GENERIC TARIFF AND OTHER TERMS AND CONDITIONS FOR PROCUREMENT OF POWER BY DISTRIBUTION LICENSEES FROM MUNICIPAL SOLID WASTE TO ENERGY PROJECTS IN THE STATE OF GUJARAT**

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

**CORAM:**

**Anil Mukim, Chairman**

**Mehul M. Gandhi, Member**

**S. R. Pandey, Member**





## 1. INTRODUCTION

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### 1.1 Background

In exercise of the powers conferred under Sections 3 (1), 61 (h), 62 (1) (a) and 86 (1) (b) & (e) of the Electricity Act, 2003, National Electricity Policy, 2005, and Tariff Policy, 2016 and all other powers enabling it in this behalf, the Gujarat Electricity Regulatory Commission (GERC or Commission) presents this Order for 'Determination of Generic Tariff and other terms and conditions for Procurement of Power by Distribution licensees from Municipal Solid Waste to Energy Projects in the State of Gujarat'. The provisions of this Order shall be applicable for the MSW based Power Projects commissioned post 5<sup>th</sup> June 2022 up to the control period specified in this Order.

The Commission previously had issued Order No. 04 of 2016 dated 10<sup>th</sup> November 2016 "Determination of Tariff and other terms & conditions for Procurement of Power by Distribution Licensees from Municipal Solid Waste to Energy Projects in the State of Gujarat." The control period of the said order was up to March 31, 2019. The Commission vide Order dated 23<sup>rd</sup> October 2017 in Suo Motu Petition No. 1654 of 2017 had extended the control period of the Order No. 04 of 2016 upto 31<sup>st</sup> March 2021.

The Commission while framing the discussion paper considered the Policy & Regulatory provisions outlined in the Electricity Act, 2003, and Rules framed under the Act including the 'Gujarat Waste to Energy Policy, 2022' notified by Government of Gujarat.

### 1.2 The Electricity Act, 2003

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

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



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

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

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

*"....."*

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

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

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

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

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

*....."*

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

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

*"....."*





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

.....

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

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

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

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

It is provided that the Rules shall be applicable for generation, purchase and consumption of green energy including the energy from Waste-to-Energy plant. The Rules shall come into effect from the date of its Notification i.e., with effect from 06.06.2022.



#### 1.4 National Electricity Policy (NEP), 2005

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

*“5.2.20 Feasible potential of non-conventional energy resources, mainly small hydro, wind and 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** stipulates about the need for Technology Development and R&D on non-conventional energy systems, as reproduced below:

“.....

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

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

*5.12.1: Non-conventional sources of energy being the most environment-friendly, there is an urgent need to promote generation of electricity based on such sources of energy. For this purpose, efforts need to be made to reduce the capital cost of projects based on non-conventional and renewable sources of energy. Cost of energy can also be reduced by promoting competition within such projects. At the same time, adequate promotional measures would also have to be taken for development of technologies and a sustained growth of these sources.*

*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 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 as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies.*

## **1.5 Tariff Policy 2016**

In compliance with the Section (3) of the Electricity Act, 2003 the Central Government has notified the revised Tariff Policy on 28<sup>th</sup> January, 2016. The Tariff Policy elaborates the role of Regulatory Commissions, the mechanism for promoting renewable source of energy, the time-frame for implementation, etc.

**Clause 5.2** of the Tariff Policy provides is reproduced as under:

“.....

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

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

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

*1) Pursuant to provisions of Section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee for purchase of energy from renewable energy sources, taking into account availability of such resources and its impact on retail tariffs. Cost of purchase of renewable energy shall be taken into account while determining*



*tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE.*

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

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

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

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

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





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

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

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

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

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



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

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

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

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

## **1.6 Government of Gujarat Waste to Energy Policy 2022**

The Government of Gujarat notified the 'Gujarat Waste to Energy Policy, 2022' on 2<sup>nd</sup> November 2022 for development of WTE projects in the State.

Some important provisions of this Policy are enumerated below:

- This Policy came into force with effect from 2<sup>nd</sup> November 2022 and will remain in operation for a period of five years, i.e., up to 1<sup>st</sup> November 2027.





- The Policy is intended to facilitate and promote utilization of MSW for generation of electricity at affordable cost in a sustainable manner, and in the process contribute to Swachh Bharat Abhiyan.
- The Developers may set up Power Plant utilizing MSW for their captive use, for sale of electricity to third party or to obligated entities to meet their Renewable Purchase Obligation (RPO) as specified by the GERC from time to time.
- Civil Authorities shall identify / select eligible site in proximity to landfill sites or any other suitable land and prepare Pre-feasibility reports / Detailed Project Report (DPR) for MSW based projects. Alternatively, the Developers of Power Projects based on MSW, may select eligible site in proximity to the landfill sites or any other suitable land, in consultation with the concerned Authorities like Urban Development and Urban Housing Department, Gujarat Urban Development Company, Municipal Corporations, Urban Development Authorities, Municipalities, etc., as the case may be and prepare Pre-feasibility reports / DPR and submit same to UDD/ULB for its techno-commercial approvals.
- Based on DPR, the UDD / ULB etc. shall prepare Request for Proposal (RFP) documents for the purpose of inviting competitive Bids for selection of developer for setting up for MSW projects, by following relevant provisions of Gujarat Infrastructure Development (GID) Act, 1999 and amendment thereto from time to time.
- For this purpose, concerned authorities shall provide land at token lease rent of Re. 1 (rupee one) per annum for setting up the power project for a period of 25 years of life of the project or term of power purchase/wheeling agreement, whichever is earlier.
- The Urban Local Body (ULB) shall not charge any tax, cess, royalty, levies or any other charges on the MSW based power project such as stamp duty charges, land allotment charges, Stamp Duty payable to Government, if any on the lease /development agreement will have to be borne by the ULB concerned.



- ULBs shall provide MSW to the power plant developer at power plant site without charging any cost.
- Since the management and handling of MSW is to be as per the provisions of the Solid Waste Management Rules, 2016, the WTE Projects shall comply with the MSW Rules and relevant provisions of Environment related Acts, Rules & Regulations as amended from time to time.
- GEDA shall be the State Nodal Agency for facilitation and implementation of the Waste to Energy Policy, 2022. The Nodal Agency shall facilitate and assist the Project Developers to undertake the activities like registration of projects, responding to the queries and problems of Developers of Power Projects, accreditation and recommending WTE Projects for registering with Central Agency under REC mechanism and certifying commissioning of projects.
- Urban Development Department (UDD)/Swachh Bharat Mission Department shall be the Key Nodal Agency for project implementation. To enable smooth functioning and faster implementation, UDD shall prescribe Standard Operating Procedure (SOP) / Guidelines, web-portal service helpdesk, etc. to ensure procedural uniformity amongst the concerned UDCs / ULBs / Municipal Corporations for undertaking various activities viz. identification of potential eligible sites, preparation of DPRs, tendering, preparation of RfP document, concession agreement, land lease agreement, etc.
- UDD / SBM Department will facilitate and assist the project developers to undertake the activities in achieving the objectives of the Policy like respond to the queries and problems of Project Developers; Certification of stock of MSW along with Gross Calorific Value (GCV) thereof; Co-ordinating applications for Grant / Capital Subsidy from Centre and/or State Govt. or any such Authority.
- Gujarat Urja Vikas Nigam Limited (GUVNL) shall formulate a dedicated 'Project Monitoring Cell' consisting of one representative of GEDA and one representative of UDD for reviewing and monitoring the progress of project implementation. The Project Developer shall be required to furnish quarterly progress reports and the Project Monitoring Cell in close co-ordination with



concerned Civic Authority shall monitor the projects' progress, address issues (if any) & provide necessary guidance/ clarifications, conduct inspection (if required), etc. and thereby endeavour to assist the Project Developers in fast-tracking implementation of Projects.

- A Committee constituted under the Chairmanship of Principal Secretary (Energy & Petrochemicals Department) shall facilitate resolution of policy level issue, grievances/concerns (if any) of existing Projects/projects under Intervening Period of two Policies/New Projects, removing difficulties, etc. to ensure smooth implementation of the Policy.
- The Projects in pipeline: The projects which are under-construction / implementation but are not commissioned as on date of notification of said Policy will be termed as 'Pipeline Projects'. Such projects, if commissioned by March 2024 shall be eligible for benefits under the WTE Policy 2016 and Amendments thereto.
- The primary contribution of WTE Projects being disposal of MSW and its environment-friendly management, the cost implication, i.e., tariff payable for purchase of power from the WTE Projects shall be shared amongst the Distribution Licensees and the concerned Civic Authorities viz. UDD / ULB / Municipal Corporations, as the case may be, in a manner prescribed in the Policy.
- The UDD / ULBs shall develop a robust 'Monitoring Mechanism' and undertake the activities like:
  - a. Monitoring of quantum of MSW stock viz. MSW delivered, processed and consumed by the Project Developer;
  - b. Certification of quantum of stock of MSW along with GCV thereof;
  - c. Certification of quantum of usage of fossil-fuel and its conformity to the permissible ceiling prescribed by MNRE/ GERC;
  - d. Certification of quantum of usage of any other waste of RE nature or biomass with total MSW and its conformity to the permissible ceiling prescribed by GERC from time to time;
  - e. Creation and maintenance of Information System / Monthly Database for keeping track of MSW stock, fuel usage, operational parameters, etc.;



- f. Undertake periodic and/or random inspection of the Plant for fulfilment of plant performance, compliance of standards as per Solid Waste Management Rules 2016, Environment Protection Act 1986, norms / rules & regulations framed by MoEF, CPCB, GPCB, NGT, etc.;
- Grid integration shall be in accordance with the Central Electricity Authority, (Technical Standards for Connectivity to the Grid), Regulations, 2019, as amended from time to time.
  - The Voltage level for evacuation of power in the grid from MSW Power Projects shall be in accordance with GERC Grid Code 2013, GERC Supply Code, 2015, other applicable GERC Orders / Regulations and amendments thereof. The evacuation facility shall be approved by GETCO/DISCOM after carrying out System Studies etc. The WTE Project Developer shall establish dedicated evacuation lines for evacuation of power up to nearest GETCO Substation, install RTUs (Remote Terminal Units) etc, at their own cost.
  - The WTE Project Developers shall provide energy metering and communication facility in accordance with the CEA (Installation and Operation of meters) (Amendment) Regulations 2014 and its subsequent amendments; Gujarat Electricity Grid Code 2013 and its subsequent amendments; GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments and GERC Distribution Code 2004 and its subsequent amendments.
  - For the purpose of energy accounting, such projects shall provide ABT-compliant meters at the metering point, as per GERC's applicable Regulations, Orders etc from time to time. The interface metering shall conform to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2014 and amendments thereto.
  - The electricity generated shall be metered and readings taken jointly by WTE Project developer with a representative of DISCOM and GETCO at the metering point, on monthly basis.





- The WTE Project Developers shall also install Remote Terminal Unit (RTU) 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.
- The WTE Project Developer may sell power to Distribution Licensee on long term basis. The tariff and its modalities shall be as follow:
  - a. The Concerned Civic Authority - UDD / ULB shall undertake Competitive bidding for selection of Developer/s for WTE Projects. The UDD/ULB shall approach GERC for approval of the “discovered tariff” under such Competitive Bidding. The tariff finally approved by the GERC shall be termed the “approved tariff”;
  - b. The Concerned Civic Authority shall bear 20% of such “approved tariff”. The balance 80% of the “approved tariff” shall be termed as the “PPA Tariff” payable by GUVNL;
  - c. The concerned Civic authorities may avail grant from State Government towards tariff implication equal to 20% of the “approved tariff”;
  - d. A Tripartite Agreement shall be executed amongst the WTE Project Developer, the Nominates Agency – GUVNL and the concerned Civic Authority under intimation to Climate Change Department (CCD), Urban Development Department (UDD) and Energy & Petrochemicals Department (EPD), Government of Gujarat;
  - e. The WTE Project Developer shall raise monthly energy invoices to GUVNL at tariff approved by GERC (i.e., at the “approved tariff”) as per the terms and conditions of the PPA, along with copy of duly certified State Energy Account (SEA) published by SLDC;
  - f. GUVNL will pay to the WTE Project Developers the cost of energy supplied as per the PPA tariff (80% of the approved tariff by GERC). It will also pay the amount towards the 20% payable by the concerned civic authority from the grant made available to it by CCD/ UDD



- / ULB. Such 20% of the “approved tariff” shall be made available to GUVNL by CCD / UDD / ULB on quarterly advance basis;
- g. Every quarter, GUVNL will send payment/generation status report to the CCD & EPD in respect of energy and amount paid to the WTE Project Developer;
- h. The electrical component of power shall be utilized by local distribution company where the WTE Project is located. Such power shall be charged to Local DISCOM at Average Power Purchase Pooled Cost (APPC) of GUVNL for the year of commissioning of the WTE Project. The APPC once fixed shall remain constant or the life of the project. APPC shall mean power purchased at generator bus excluding renewable power purchase, transmission cost and power purchased for sale to other than consumers;
- i. The difference between the “PPA Tariff” and APPC charged to Local DISCOM shall be considered as cost of Renewable Attribute. On payment of this cost, the Distribution Company shall be eligible for allotment of equivalent number of units of Renewable Attribute. On monthly basis such Renewable Attribute units and their cost shall be apportioned by Nominated Agency — GUVNL to all Distribution companies (including Private Distribution Licensees, Distribution Licensees/ Deemed Distribution Licensees supplying power in SEZs area etc.) in proportion to their power consumption of previous year;
- j. GUVNL will raise two separate bills to Distribution Companies (i) for supply of electrical component of power as mentioned above, & (ii) for renewable attributes as mentioned above. Distribution Companies shall be required to make payment to GUVNL within 7 days from issuance of bill failing which they shall be liable to pay delayed payment charges as per terms of the PPA;
- k. Such apportioned Renewable Attribute units shall be considered for meeting RPO for the respective DISCOM;





- l. Transmission charges and losses, wheeling Charges and losses shall be borne by the concerned local distribution company which uses the electrical component.
- For entering into PPA with Distribution Licensee, the developer of Power Projects based on MSW shall be required to provide Bank Guarantee of Rs. 5 lakh per MW or part thereof. If the developer achieves commercial operation within the time period mentioned in the PPA, then the Bank Guarantee shall be refunded and if he fails to achieve commercial operation within the stipulated time frame, the Bank Guarantee shall be forfeited.
- The wheeling of electricity for captive consumption at 66 kV within the State shall be allowed on the payment of transmission charges and losses applicable to normal Open Access consumers while captive consumption below 66 kV voltage level within the State shall be allowed on the payment of Transmission Charges and Transmission Losses as applicable to normal Open Access consumers and 50% of Wheeling Charges and 50% of Distribution Losses of the energy fed into the grid as applicable to the normal Open Access consumers.

Injection at 11 kV and drawl at 11 kV and below voltage level:

- a) When the point of injection and drawl at 11 kV or below voltage level lies within the same Distribution Company, the user shall pay 50% of Wheeling Charges and 50% of Losses of the energy fed to the grid as applicable to normal Open Access consumers.
  - b) In case the point of injection and drawl at 11 kV or below voltage level lies in different distribution area, the user shall pay 50% of Wheeling Charges and 50% of Losses of the energy fed to the grid as applicable to normal Open Access consumers for each Distribution Company. Moreover, transmission charges and transmission losses as applicable to normal Open Access Consumer shall also be levied.
- Waste to energy Project Developers who desire to wheel electricity to two or more locations, shall pay 5 paise per unit on energy fed into the grid to the Distribution Company concerned in whose area power is consumed in addition to above mentioned transmission charges and losses, as applicable.



Cross Subsidy Surcharge:

Cross Subsidy Surcharge and Additional Surcharge shall not be applicable for WTE Projects under Captive Route;

Cross Subsidy Surcharge and Additional Surcharge shall be exempted for WTE Projects under Third Party Sale.

Energy Accounting and Surplus Power Injection shall be done as described below:

- The energy accounting for all WTE Projects shall be in accordance with the MOP's Green Energy Open Access Rules 2022 and applicable Regulations framed by Forum of Regulators / GERC from time to time.
- Banking of energy shall be allowed upon payment of applicable banking charges as determined by GERC from time to time.
- For net import of power, Distribution Company will 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.
- Surplus power (if any), after giving set off, shall be purchased by Distribution. Company at rates specified in table herein below. Fixed / demand charge, peak charge, other charges / penalty etc. shall be as applicable to other consumers.

Particulars	Rates of surplus Power	Treatment of RPO
Case 1- Consumer not taking RE Attribute for fulfilling its RPO	Rs. 1.75/unit	Entire generation to be considered towards DISCOMs' RPO
Case 2- Consumer taking RE Attribute for fulfilling its RPO	Rs. 1.75/unit	Surplus energy to be considered towards DISCOMs' RPO
Case 3- Consumer registered under REC Mechanism	Rs. 1.50/unit	Surplus energy to be considered towards DISCOMs' RPO



- The rate of surplus power (if any), after giving set off to be purchased by DISCOM in case of MSMEs setting up Projects for captive consumption (and not registered under REC Mechanism) shall be Rs. 2.25 /kwh for first 5 years and thereafter those mentioned at table above.
- Electricity Duty on energy generation and consumption shall be in accordance with the provisions of the Gujarat Electricity Duty Act 1958 and its amendments from time to time.
- Exemption from demand cut to the extent of 50% of installed capacity of the Power Project based on MSW in case of captive consumption and third-party sale within the State.
- Power Projects based on MSW availing Open Access for captive/third-party sale under REC mechanism shall be governed by the CERC REC Regulations. Such projects shall be allowed to wheel the electricity on payment of applicable Transmission Charges/Losses, Wheeling Charges/Losses, and other charges as applicable to other normal Open Access consumers.

### **1.7 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.

### **1.8 Renewable Energy Purchase Obligation in Gujarat**

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



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

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

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

This renewable purchase obligation applies to:

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

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

### **1.9 Discussion Paper for Determination of Generic Tariff and Other Terms and Conditions for Procurement of Power by Distribution Licensees from Waste to Energy Project in the State of Gujarat.**

The Commission considered the provisions of the Electricity Act 2003 & Tariff Policy 2016 along with the MoP's Electricity (Promoting Renewable Energy through Green Energy Open Access Rules 2022 & its subsequent amendments thereto while framing this discussion paper. The





Commission also considered the provisions of Gujarat Waste to Energy Policy 2022 notified by Government of Gujarat while framing the discussion paper.

Accordingly, the Discussion Paper was published by the Commission and uploaded on the Commission's website [www.gercin.org](http://www.gercin.org) in downloadable format on 05<sup>th</sup> June 2023, inviting comments from stakeholders by 05<sup>th</sup> July 2023. A list of stakeholders communicated their views on the Discussion Paper is given at **Annexure I**.

### **1.10 Public Hearing**

The Commission has examined the suggestions/comments/objections received on the discussion paper. The Commission fixed the date for public hearing on the proposed Tariff framework for MSW to Energy on 10<sup>th</sup> July 2023 at the Commission's Office, Gandhinagar. A list of stakeholders participated in the public hearing and presented their objections/suggestions is given at **Annexure-II**.

The main comments and views expressed by the stakeholders through their written/oral submissions and the Commission's views thereon have been summarized in the following paragraphs. It may be noted that all the suggestions given by the stakeholders have been considered and the Commission has attempted to elaborate all the suggestions as well as the Commission's decisions on each suggestion. However, in case any suggestion is not specifically elaborated, it does not mean that the same has not been considered. Wherever possible, the comments and suggestions have been summarised clause-wise, along with the Commission's analysis and ruling on the same.



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

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### 2.1 Clause 3.1: Approach and Methodology

#### 2.1.1. Proposed in Discussion Paper

The Tariff Policy dated 28<sup>th</sup> January 2016, notified by the Central Government in pursuance of the Section 3 of the Electricity Act 2003 has stipulated that the Appropriate Commission may determine tariff for procurement of power by the distribution licensees from Waste to Energy Plants under Section 62 of the Act. The relevant extract of para 6.4 of the Tariff Policy is given, below:

“.....

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

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

.....”

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

The representative of JBM Group submitted that the Urban Local Bodies (ULBs) should float tenders for WtE facilities on tipping fee basis only as ULBs cannot decide tariff for any power generating project. Such tariff can be decided by State Electricity Regulatory Authorities only in view of the various CERC directions/guidelines.





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

The Commission decides to determine generic tariff on cost plus basis under Section 62 of the Act as recommended in Tariff Policy 2016 for sale of electricity from MSW to energy projects during the new control period.

## **2.2 Clause 3.2.1 Control Period**

### **2.2.1. Proposed in Discussion Paper**

The Control Period of the Tariff Order was proposed from the date of final Order till 31<sup>st</sup> March 2028.

### **2.2.2. Suggestions/Objections of the Stakeholders**

**GUVNL** submitted that the last tariff order for Municipal Solid Waste project issued by the Commission in 2016, expired on 31 March 2021. Any projects implemented post that period is currently being paid out at a provisional tariff. It is proposed that tariff for such projects shall be regulated based on the new tariff order.

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

The Commission notes that MoP had notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 06.06.2022. Subsequent to this, the Government of Gujarat had notified Waste to Energy Policy on 02.11.2022 with an operative period of five years i.e., upto 01.11.2027. The Waste to Energy Policy notified by Government of Gujarat provides that the energy accounting for all WTE projects shall be in accordance with the MOP's Green Energy Open Access Rules 2022 and applicable regulations framed by Forum of Regulators / GERC from time to time.

In view of above, the Commission decides to fix the control period of this Tariff Order effective from the date of notification of Green Energy Open Access Rules by Ministry of Power, Government of India i.e. effective from 06.06.2022 to 31.03.2027. The MSW projects which are commissioned during the Control Period of this Order i.e. during the period from 06.06.2022 to 31.03.2027 shall



be governed by the provisions of this Order. The Control Period of previous Order No. 04 of 2016 dated 10.11.2016 shall be deemed to be extended upto 05.06.2022. Accordingly, the MSW projects which are commissioned prior to the date of 06.06.2022 shall be governed by the provisions of Order No. 04 of 2016 dated 10.11.2016 and Order dated 23.10.2017.

## **2.3 Clause 3.2.3 & 3.2.4: Tariff Period & Tariff structure**

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

The Tariff period for procurement of electricity from Waste to Energy projects by the Distribution Licensees was proposed to be equal to the useful life, i.e., 25 years. With regard to tariff structure, a 'single part levelized tariff' was proposed for generic tariff determination for incineration and RDF based MSW to energy projects, as followed by different SERCs and CERC.

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

**Abellon CleanEnergy Limited** suggested that the Tariff Period ought to be considered to be 20 years for reasons such as lack of adequate segregation of waste at source which leads to sub-par quality of MSW received by the project developer, often containing toxic contaminants, corrosive nature and the higher ash / inert content of such MSW, directly affecting the life of the equipment within the WTE plant making it difficult to expect the WTE plant life to be 25 years.

**TPL** submitted that MSW plants should be allowed a shorter useful plant life of about 20 years considering the corrosive nature of MSW and higher ash/inert content.

**BA Prerna Renewables** submitted that the conversion of Municipal Solid Waste into the refused derived fuel (RDF) involves shredders, conveyor belts, trommels, etc. which do not have useful life more than 5-10 years due to dust, metals, rocks and other hard material being encountered alongwith the plastic and other combustible waste. Accordingly, it is requested to reconsider the useful life of the Waste to Energy Plant and reduce the same to 15 years from 20 years considered in the previous Order and proposal of 25 years in the present discussion paper.



GUVNL suggested to specify a single tariff for both technologies to avoid separate approvals for each project.

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

The Commission is of the view that with advancement in technology, the efficiency of operation and the life of the plant and machinery should increase. It has been noted that the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2020 dated 23<sup>rd</sup> June 2020 as well as other SERCs who have recently issued Orders/Regulations have considered the project life of 25 years for MSW based Power Project. In view of this, the Commission decides to keep the useful life of MSW based Power Project as 25 years.

The Commission decides to fix separate tariff for Mass Incineration and RDF based MSW Power Projects, as followed by other SERCs and CERC.

## **2.4 Clause 3.2.7: Interconnection point and Metering point.**

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

“... The developer of Power Projects based on MSW shall establish dedicated evacuation lines for evacuation of power up to GETCO Substation/ Distribution Licensee's network as approved by the concerned licensees, install RTUs, other equipment as may be determined by GETCO/Distribution Licensees at their own cost. The Metering Point and Interconnection Point for the Waste to Energy Power Project shall be the point of connection at the GETCO substation where feasibility and connectivity is granted by GETCO....”

“The Metering Point and Interconnection Point for the MSW WtE Power Project shall be the point of connection at the GETCO substation where feasibility and connectivity is granted by GETCO”.

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

**Abellon Clean Energy Limited** suggested that WTE project developers should be allowed to pass-through the additional costs incurred in establishing evacuation line due to the constraint of setting up the power plant near a specific landfill in City area, which differs from other renewable



energy projects like Wind or Solar Power Plants. It is further suggested that the cost of establishing the transmission line for evacuation of power from the WTE project ought to be borne by GETCO. It is pointed out that the project developer faces various land-related issues concerning to underground cable laying, line shifting and waste dumping etc. It is generally the responsibility of the concerned Municipal Body to provide encumbrance-free land for the project. Hence, any costs incurred in resolving these issues should be borne by the Municipal Bodies or allowed as pass-through in the tariff if it is borne by the project developer.

**Averda India** requested to assign the responsibility for evacuation of power for renewable energy projects to the appropriate Transmission Utility.

**GUVNL** suggested to modify the Metering Point and Interconnection Point as “the Metering Point and Interconnection Point for the MSW Power Project shall be the point of connection at the GETCO substation where feasibility and connectivity is granted by GETCO/DISCOM.

#### **2.4.3. Analysis and Commission’s Ruling**

The Commission notes that the Benchmark Capital Cost proposed in the discussion paper for MSW based Power Project for the new control period consist of cost associated with (i) Plant and Machinery (including pre-processing equipment), (ii) land cost, (iii) civil works, (iv) evacuation infrastructure, (v) associated miscellaneous expenses, and (vi) cost towards restricting the emissions from the plant within the permissible limits specified in the Solid Waste Management Rules, 2016 (in case of incineration technology). As such, the evacuation infrastructure cost has been already considered as part of the capital cost. Further, it is the responsibility of GETCO/ STU to approve the evacuation facility after carrying out System Study. As suggested, GETCO/STU should attempt for grant the connectivity to the MSW based Power Project at the nearest substation from the land fill site after carrying out the necessary System Study.

The Commission also notes that the Concessional Agreement signed between the ULB / Municipal Corporation and MSW based Power Project Developer should assign the roles and responsibility of the parties signing the agreement and take care of the issues faced by the Project Developer





viz. land-related issues concerning to laying of underground cable, requirement for line shifting, waste dumping etc.

In view of above, the Commission decides that the MSW based Power Projects Developer shall establish dedicated evacuation lines for evacuation of power up to the GETCO Substation/ Distribution Licensee's network as approved by the concerned licensee based on system study. This practice is also followed in case of other RE technology based power projects in the State and is in line with the recommendations under the Waste to Energy Policy 2022 notified Government of Gujarat. So far as metering point and inter-connection point for energy accounting is concerned, the Commission agree with the suggestion of GUVNL and decides that the "Metering Point and Interconnection Point for the MSW based Power Project shall be the point of connection at the GETCO Substation where the feasibility and connectivity is granted by GETCO/DISCOM".

## **2.5. Benchmark Capital Cost for Waste to Energy Project in Gujarat**

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

It has been noticed that Mass incineration/ Refuse Derived Fuel Incineration-based technologies are emerging as preferred option for managing the growing problem of waste in country. Most of the projects commissioned and under pipeline in the country for which the concession agreements are signed between the developers and Urban Local Bodies are based on incineration technology. In the mass incineration projects, the Municipal Solid Waste received from the Municipal Corporation is directly used as fuel in the generating plant without any process of such waste at power plant. Whereas in case of RDF based incineration plant, the raw Municipal Solid Waste provided at the doorstep of power plant by ULB at 'Nil' cost is processed and converted into Refuse Derived Fuel (RDF) and then used in incinerator as fuel.

The cost of manpower deployed for processing of MSW including repair and maintenance of the plant has been considered as part of O&M cost of the project. Similarly, the pre-processing equipment and consumption of energy in the process equipment also factored in while proposing the auxiliary consumption norm for the RDF based incineration plant.



In view of above, the Commission proposes not to allow any fuel cost in case of MSW Power Projects based on RDF, instead the Commission prefer to include the cost of fuel preparation (process equipment) in the overall Capital Cost of the Project that will address both Capacity Charge and Fuel preparation cost and other incidentals. Hence, the related norms like Station Heat Rate, Fuel cost escalation, Gross Calorific Value, etc. are not applicable herein.

The average of capital cost considered by various SERCs in respective Tariff Orders have been considered for arriving the benchmark capital cost of mass incineration project for the new control period. While in case of the RDF technology-based power plant, the capital cost considered by various Commission as well as the cost of processing of RDF by the project developer at plant with consideration of various equipment is considered. Considering the above approach, a benchmark capital cost of Rs. 18.00 Crore/MW was proposed for Mass Incineration type MSW plant and Rs. 16.75 Crore/MW for RDF based MSW plant for tariff determination purpose for the next Control Period.

### **2.5.2. Suggestions/Objections of the Stakeholders**

**Abellon CleanEnergy Limited** suggested that a cost escalation at 3% to 5% per annum may be provided in segregated capital cost of pre-processing plant. The objector has pointed out that CERC in its RE Tariff Regulations has considered 5% escalation per annum on the cost of RDF.

The objector has further suggested that utilization of Biomass of 15% ought to be allowed for co-firing along with industrial waste to the extent of 10% in RDF based MSW Plant. Similarly, in case of Mass Incineration based MSW plant, co-firing of supplementary fuel gas (PNG / LPG) to the extent of 3% of the total fuel is suggested to be allowed. The objector has submitted that the cost of Per Kg of PNG is to be considered at Rs. 60 with annual escalation of 5.72%. It is requested that such co-firing supplementary fuel cost may be considered as pass through in the tariff and may not be levelized but to be reviewed every 3 years to make it in synchronization with market trends so as to ensure viability of the Power plant.





The Objector has further submitted that MNRE vide its Notification dated 28.02.2020 allowed MSW based WTE projects to mix biomass to the extent of 25% of the total MSW processed. Further, the SWM Rules 2016 allows for the blending of biomass as supplementary fuel in the incinerator.

It is submitted that as per the industry experience and operational data gathered from various WTE projects in the State, it is noteworthy that the quality of MSW delivered by the concerned Municipal Body in terms of the Concession Agreement is not adequate for effectively incinerating the same in order to produce the desired output of electricity, owing to presence of unwanted material and contaminants and that there is also additional cost in preparation of RDF fuel from raw MSW and storage of the same. Such cost being high in nature ought to be considered and allowed as pass through in the tariff. It is further suggested that in order to preserve the financial viability of the WTE projects in case of any change in the scope of the Concession Agreement, there ought to be a provision for allowing the generator to recover a Tipping Fee from the relevant Municipal Corporation for handling of MSW and reducing the overall impact of waste in the State.

Further, it is submitted that the determination of the capital cost simply by taking average of the capital cost determined by other SERCs to arrive at a generic benchmark capital cost for WTE projects for State of Gujarat is incorrect and inaccurate method which would inevitably deviate the attention from various core and actual issues and circumstances that impacts the economics of capital cost of WTE projects.

It is suggested that analysis of cost incurred by various operational WTE projects across the country needs to be carried out for arriving at benchmark capital cost for tariff determination purpose. It was pointed out that under Section 61 (d) of the Electricity Act, the Commission is statutorily obligated to ensure recovery of cost to the generating company.

The objector has cited that the capital cost of Rs 20.98 Crores is approved by the MERC for RDF based MSW Power Plant for determination of project specific tariff in Case No 162 of 2019. It has been submitted that the Ministry of Housing and Urban Affairs (MoHUA) under the 'Guidelines on



Usage of RDF in Various Industries, October-2018' also states that cost of setting up of Pre-processing facility is around Rs. 12 Crores per 100 tonne of waste.

The objector has also cited the example of Jamnagar MSW based Power Plant to submit that the actual costs incurred in the commissioning of the sole operational 7.5 MW capacity MSW based Power Project in the State was in the range of around Rs. 145 Crores, therefore translating to Rs. 19.33 Crores/MW.

Based on all above considerations, the objector has suggested that as per the prevailing market rates, the capital cost incurred for setting up of WTE project based on mass incineration is approximately Rs. 24.85 Crores/MW. Similarly, the Capital Cost for RDF based Power Project (excluding the pre-processing infrastructure) would be Rs. 15.87 Crores/MW, whereas the cost of setting up of the pre-processing infrastructure for converting MSW into RDF is approximately Rs. 6.46 Crores/MW. Hence, the total cost for the RDF based MSW Power Project is approximately Rs. 22.33 Crores/MW.

The objector has further submitted that as per MNRE's letter No. 300/2/202, dated 02.11.2022, MSW/RDF based Power Project is not supported under the Waste to Energy Programme and accordingly, any grants/subsidies that are purported to be available to RDF-based WTE projects are not guaranteed. Hence, the objector has requested not to factor the subsidy while determining the tariff for MSW project.

The Objector has suggested that the Capital Cost ought to be segregated into two major components, namely: Pre-Processing Plant & Generating Plant. It is suggested that the costs towards pre-processing plant ought to be given an incremental treatment and periodically revisited and re-determined in order to accurately reflect the costs that are actually being incurred by the generator at the relevant time.

It is submitted that CERC in CERC RE Tariff Regulations, 2020 has provided for fuel escalation of 5% in FY 2020-2021. Similarly, the Commission had provided for fuel escalation of 3 % in its Tariff



Order of 2016. Accordingly, it is requested that escalation in similar manner should be allowed in segregated capital cost of pre-processing plant set up for conversion of raw MSW into RDF.

The objector has further requested to consider the cost towards setting up of tertiary water treatment plant in order to process the raw water before using the same for operation of the plant.

**Averda India & Jindal Waste management Ltd.** have requested to the Commission that the cost of water infrastructure should be considered as a group category. This is because Waste-to-Energy (WtE) plants often utilize treated sewage water for their water requirements, but they are not always located near Sewage Treatment Plants (STPs), sometimes being situated at distances of 15 to 20 Kms. As a result, the project cost increases significantly due to the need for long-distance water transportation infrastructure.

**BA Prerna Renewables** has submitted that in order to comply with the provisions of SWM Rules 2016 and emission norms of pollution control board, the developer need to install advanced technologies and other equipment to ensure the compliance with environmental regulations and emission control measures. The stakeholder has requested to the Commission to consider Rs 18-19 Crores per MW as capital cost for MSW to Energy projects using RDF.

**M/s Nitin Madam** submitted that the capital cost proposed for Mass Incineration and RDF Based MSW Power Plants is very high and needs to be reconsidered. It is submitted that the cost of such plants which uses steel, cement and other equipment cannot exceed Rs. 6-7 Crores per MW in any circumstances. The thermal power plants, which are installed at the costs around Rs. 5-6 Crores per MW. Therefore, the cost of Mass Incineration and RDF Based MSW Power Plants cannot exceed Rs. 7-8 Crores per MW.

The stakeholder further submitted that many plants for making RDF from MSW, have been installed in the areas of different Municipalities in the State of Gujarat. These plants involve installation of a conveyor belt, large waste disposal equipment and electric motor to run the conveyor belt. Upon inspection, it was found that it's cost cannot exceed Rs. 1.5 to 2.0 crores.



The stakeholder has submitted that the Commission had considered the Capital Cost of Rs. 16.75 Crores per MW for RDF based project which is higher by Rs. 7.75 Crores in comparison of previous Order of the Commission. Therefore, it is not justified to approve the capital cost of Rs. 18 Crores per MW for MSW based Power Projects in this Order, as the Burdon of higher tariff will be ultimately borne by the customers. Therefore, it is necessary to allow the capital cost of plant very carefully after due verification.

The stakeholder has further submitted that as per information obtained through RTI, it is learnt that the MSW based Power Plant at Jamnagar has been set up and run by a Generating Company from whom GUVNL has claimed penalty of approximately Rs. 57 to 60 Crores as per the Order of the Commission in relation to their other Biomass based Power Plant in State. Further, the MSW based Power Project at Jamnagar has never run at full capacity i.e., 7.5 MW nor it is going to be run in future due to quality of waste that received at the plant from Jamnagar Municipal Corporation. Therefore, if such plant runs only at partial capacity of 3-4 MW instead of full capacity of 7.5 MW due to fuel related issues, the impact of such under production of electricity will be borne by the consumers of the State.

The stakeholder further submitted that MSW based power plants, which are installed in the area of concerned Municipal Corporation, should not be allowed to import any kind of fuel from outside, such as MSW, RDF, Coal, Lignite, Biomass, etc. It has been pointed out that the fuel is being imported from outside and used in the Jamnagar power plant and no survey or inspection is done by the Authorities. It is not justified to allow production of electricity at a cheaper rate of Rs. 2-3 per kWh by using other fuel materials imported from outside for generation of electricity and sell it at a tariff of Rs. 7 per kWh applicable for MSW based Power Project. Therefore, the Stakeholder has requested the Commission to stipulate in the Order that any kind of waste imported from outside shall not be used as fuel in the MSW Power Plant.

The stakeholder has further pointed out that the Compost Fertilizer is derived from the RDF plant and used in the agriculture fields. The Government of India has instructed to mix 10% to 12% of such compost in making the fertilizer. In such case, when RDF is made from MSW, the fertilizer





derived in such process is an additional source of income for the power plant, which is sold at an estimated rate of around Rs. 150 to Rs. 200 for per Bag of 50 KG. Such additional income should be considered while fixing the electricity tariff for the MSW based Power Plant.

It is also submitted that the ash generated during incineration of MSW in the Power Plant is also sold in the market to cement--brick makers. The ash generated from MSW based Power Plant is sold at the same rate as ash generated and sold from thermal power plants. Therefore, the income from sale of ash should also be considered while fixing the tariff for MSW based power plant as this is an additional income for the MSW based Power Plant.

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

The Commission has noted the submission received from various stakeholders. The Capital cost benchmark for MSW based power project proposed by the Commission in the discussion paper is based on the comprehensive study of the approach followed by various SERCs while deciding the tariff for MSW based Power Projects. The Commission has reviewed the project capital cost considered by other SERCs for similar technology in their recent generic Tariff Order/RE Regulations. The Commission, before evolving the capital cost benchmark for MSW based Power project, has also gone through the Model Concessional Agreement, Solid Waste Management Rules, 2016 notified by MoEF as well as recommendation of Niti Ayog about the suitability of Technology for processing the Municipal Solid Waste.

The Commission has noted that the Mass Incineration/Refuse Derived Fuel Incineration based technologies are emerging as preferred option for managing the growing problem of waste in Country. Most of the power projects which are either commissioned or under construction, in the Country for which the Concession Agreements are signed between the developers and Urban Local Bodies, are based on incineration technology.

The Commission noted that in mass incineration technology, the raw MSW received from the Local Body/ Municipal Corporation is directly used in the furnace without any processing treatment. As such, the size of the incinerator, special coating to prevent the damage from inert





gases, primary super heater, secondary super heater, evaporator, air-heater, contamination control mechanisms, the transport of waste to the incinerator, etc. which has bearing on the cost. In case of RDF based technology, the MSW provided at the doorstep of the plant is converted into RDF by using pre-processing plant deploying special equipment /machinery which need electricity and manpower to operate. The Commission has considered the additional cost of converting MSW into RDF for generation of power and given appropriate effect in Capital Cost, O&M expenses and Auxiliary consumption for the RDF based MSW Power Project in the discussion paper. It is also necessary that the capacity of plant shall be decided with consideration of quality and availability of MSW as fuel so as to ensure generation of power from the plant at its fullest capacity, otherwise, the licensee and consumer will be made to pay unnecessarily higher cost of power.

Considering the fact that the raw MSW is provided by the Local Body at the doorstep of the plant at free of cost and the cost element associated with the processing of waste have been taken care of while fixing the capital cost of plant and operational norms. Therefore, the Commission decides not to consider the fuel cost and related norms such as GCV of fuel, Station heat rate etc.

The Commission does not agree with the contention of stakeholder against determination of the capital cost for MSW Project by taking average of the capital cost determined by other SERCs. The tariff determination process followed by the SERCs is transparent process in which the tariff determination parameters including the capital cost benchmark are determined after public consultation and verification of data on record.

Moreover, in a generic tariff determination dispensation, the Commission considers underlying cost and operational parameters for tariff determination which would be applicable for all similar type of projects. The Commission cannot adopt / consider the parameters approved under 'project specific tariff' dispensation as those parameters is approved for that particular project on case specific basis.

The Commission is of the opinion that the primary objective behind setting up MSW plant is the disposal of the waste / reduction of volume of the waste in scientific manner. The MSW to power



conversion technology viz mass incineration and RDF based incineration are designed to incinerate heterogeneous waste. Use of Biomass / PNG / LPG as a supplementary fuel for co-firing in the MSW based Power plant along with other industrial waste is against the preliminary objective of disposal of Waste and it will dilute the main purpose of setting up of MSW based Power Plant. Moreover, monitoring of the usage of other fuel in MSW based Power Plant will also pose challenges. Further, if utilization of other fuel is allowed, it will also be difficult to decide and qualify that the generation of energy from the project is entirely Renewable / Green Energy as some part of generated energy will be consist of other fuel-based generation. The Commission has also observed that availability of adequate quantum of Biomass in the state is also an issue. The Commission also notes that MSW based Power plant is operating at Jamnagar since more than 2 years without any difficulty wherein no other fuel, other than MSW, is allowed to be utilized. Hence, the Commission decides not to allow mixing of other fuels with MSW for generation of energy from MSW based Power project.

The Commission has noted that as per MNRE administrative approval dated 02.11.2022 for implementation of Waste to Energy Program for FY 2021-22 to FY 2025-26, the incineration /RDF based MSW power projects are not supported by providing Central Financial Assistance or State Financial Assistance. However, MSW project developer shall avail financial incentive / benefit, if any available, from other schemes of Central Government under Swatch Bharat Mission / Ministry of Housing and Urban Affairs etc or under the scheme of State Government, so as the benefits of same in terms of reduced tariff can be passed on to Distribution Licensees and consumer at large. In view of above, the Commission decides to determine tariff without factoring the subsidy component / capital assistance.

In case the project proponent is eligible to get incentive/benefit from other schemes of Central Government under Swatch Bharat Mission/Ministry of Housing and Urban Affairs, the concerned Project Developer, Urban Development Department, Govt of Gujarat/concerned Municipal Corporation should inform the Commission about such instances. In such as case, the Commission will factor the same and redetermine the tariff for sale of electricity considering the subsidy/ incentive received by concerned project proponent.



The Commission also notes the submission of the Objector that Compost Fertilizer derived in the process of conversion of MSW into RDF, is used in the agriculture fields and revenue earned by the project developers from sale of Compost Fertilizer need to be factored while determining the tariff for MSW based Power Project. Similarly, revenue earned from sale of ash which is used in bricks manufacturing needs to be factored while determining the tariff. The Commission agree with the proposition of the Objector that the revenue earned by the project developers from sale of Compost Fertilizer / ash is qualified as additional/ other revenue in the hands project developers which needs to be factored while determining the tariff under 'Cost Plus' approach. However, the Commission notes that only single MSW based power project is in operation in the State and no reliable details/ information are available on record in relation to earning of additional income/revenue generated from sale of Compost Fertilizer / ash. In absence of reliable details / information, it is premature to factor the same while determining the tariff for MSW based power project and therefore the Commission has decided not to consider such revenue while determining the tariff under this Order.

In view of aforesaid discussion, the Commission decides to fix the benchmark capital cost of Rs. 18.00 Crore/MW for Mass Incineration based MSW plant and Rs. 16.75 Crore/MW for RDF based MSW plant for tariff determination purpose under this Order.

## **2.6 Clause 3.4: Operation and Maintenance Cost**

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

The Commission in the discussion paper has proposed O&M cost at the rate of 6% of the capital cost for MSW power plant based on Incineration technology. Whereas for RDF based MSW Plant, the O&M cost was proposed at the rate of 8.5% of the capital cost.

The Commission while proposing the O&M cost of RDF based plant have considered the efforts required for converting the raw MSW into RDF and accordingly considered the additional allowance on account of manpower cost and R&M requirement in pre-processing plant. While suggesting the O&M norms for the new control period, the Commission have studied the O&M



cost approved by the other SERCs in their Tariff Orders/Regulations as well as provisions of Solid Waste Management Rules 2016 and other Reports published by Government of India.

The cost proposed for first year of operation is to be escalated at the rate of 3.84% per annum during the subsequent years of operation of plant as recommended by CERC under CERC RE Regulations, 2020.

### 2.6.2. Suggestions/Objections of the Stakeholders

**Abellon Clean Energy Limited** has submitted that it is appropriate to fix the O&M cost for new control period based on the findings of the CERC and other SERCs. The stakeholder submitted that it will be appropriate if the Commission consider the individual factors unique to WTE projects that constrain the generator for incurring a cost that is higher than normal cost along with considering the prevailing market trends as prescribed under Regulation 66 of the CERC RE Tariff Regulations, 2020. Such higher costs are incurred in lieu of vital and indispensable equipment and activities that are essential in the smooth and efficient operation of the WTE plants.

The stakeholder has further submitted that their suggestions are pursuant to the experience and statistical data gathered from operating of 7.5 MW RDF based WTE project in Jamnagar, Gujarat since 15.11.2021. It is submitted that the data acquired from the Jamnagar plant would be a relevant point of comparison while determining the applicable costs for each component. It is submitted that the Jamnagar WTE project has incurred actual O&M cost of Rs. 14.33 Crores for FY 2022-23. It is suggested that to accurately accommodate the cost incurred by the generators, the O&M cost should not be considered as a percentage of the capital cost but as a separate determining factor and further ought to be periodically revisited and determined to capture the prevailing market trends instead of a levelized treatment along with the Fixed Cost. As such, it is suggested that relying upon the current market trends, the applicable O&M cost ought to be Rs. 28.82 Crores for RDF based Power Projects and Rs. 31.39 Crores for Mass-incineration based Power Projects with an applicable escalation of 5.72% per annum.





**Sh. Nitin Madam** has suggested that the O &M expenses and annual escalation thereon considered by the Commission is much on higher side. The O & M Expenses may not be higher than 4%-5% of the project cost.

**GUVNL** has suggested to reconsider the normative O&M cost proposed for RDF based MSW project in the discussion paper.

**BA Prerna Renewables** has submitted to consider the O&M cost as 14.7% of the capital cost. It is suggested that such adjustment is necessary due to the nature of the raw material (MSW) and the additional requirements for maintaining plant performance and controlling the emissions.

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

The Commission has noted the submission of the stakeholders. The Commission notes that the Objector has made exorbitant claim towards O & M expenses stating that MSW Power Project at Jamnagar has incurred actual O & M cost of Rs. 14.33 Crores for FY 2022-23. In fact, the PPA for RDF based MSW Power Project at Jamnagar was signed under the provisions of Generic Order No. 4 of 2016 dated 10.11.2016 wherein the capital cost for the RDF based project is considered as Rs. 9 Crores per MW and O & M cost is allowed at 5% of capital cost per annum i.e. Rs. 45 Lacs per MW. The O & M Cost is to be allowed as per the prudent requirement of the project. The claim of the Objector that it has incurred O & M cost of Rs. 14.33 Crores for Jamnagar Project i.e. Rs. 2 Crores per MW per annum, which works out to around 22% of normative capital cost of the project considered in the Order No. 04 of 2016 dated 10.11.2016. Any excess amount towards O & M cost and / or towards other activities, if any, carried out by the project developer cannot be the basis for granting such cost.

The Commission reiterate the fact that under the generic tariff dispensation, the Commission cannot rely upon the data pertaining to any specific plant as suggested by the objector. The basic premises of the generic tariff determination dispensation evolve around a representative case and the underlying cost and operational parameters.





The Commission does not find merit in the stakeholder's submission of periodic revision of the O&M cost based on the market trends. In levelized generic tariff regime, the operational parameters cannot be modified during the control period.

The Commission is of the opinion that the O&M norms fixed by the CERC as well as other SERCs are based on the operational data of MSW Power Plant and the analysis of data placed before the Commission during the public consultation process.

As elaborated in the discussion paper, the Commission while proposing the O&M cost for RDF based MSW Power Plant, has considered the efforts required for converting the raw MSW into RDF and accordingly considered the additional allowance on account of Employee Cost, A & G Expenses and R & M requirements of the plant.

The Commission noted that the CERC has revised the annual escalation rate to 3.84% per annum based on the change in WPI and CPI during last 5 years.

In view of above, the Commission decided to fix the normative O&M cost at the rate of 6% of the capital cost for MSW Power Plant based on Mass Incineration Technology. Whereas the normative O&M cost for RDF based MSW Power Plant is fixed at 8.5% of the capital cost during first year of operation. The Commission decided to allow annual escalation in O&M cost at the rate of 3.84% per annum during subsequent years of operation.

## **2.7 Clause 3.5: Plant Load Factor (PLF)**

### **2.7.1. Proposed in Discussion Paper**

The Commission in the discussion paper had proposed PLF of 65% for the 1<sup>st</sup> year, 75% for the 2<sup>nd</sup> year to 25<sup>th</sup> year for mass incineration based MSW project, while for RDF based projects the normative PLF was proposed as 65% for the 1<sup>st</sup> year, 80% for the 2<sup>nd</sup> year to 25<sup>th</sup> year for determining the Tariff for Waste to Energy projects to be commissioned in the next Control Period.

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



**Abellon Clean Energy Limited** has suggested that for RDF to power projects, the calorific value and composition of MSW is highly variable as it will have a heterogeneous mix and cannot be predicted. Further, during monsoon season, there will be a higher moisture content in the MSW that will reduce the calorific value and ultimately the power production of the Plant. Considering that Gujarat has 3 months of monsoon season, normative PLF should account for high variations in MSW and low Heat Value. It is estimated that given the unique nature of WtE plants, the stabilization period in the first year will be longer as unforeseen circumstances will lower productivity.

The CERC RE Tariff Regulation 2020 provides for PLF to be applicable for RDF based WtE Projects as under:

*“63. Plant Load Factor*

*(1) Plant Load factor for determining tariff for municipal solid waste-based power projects and refuse derived fuel-based power projects shall be:*

<b>Sl. No.</b>	<b>Plant Load Factor</b>	<b>RDF</b>
a)	<i>During stabilization period</i>	65%
b)	<i>During the remaining period of the 1<sup>st</sup> year (after stabilization period)</i>	65%
c)	<i>2<sup>nd</sup> Year onwards</i>	80%

*(2) The stabilization period shall not be more than 6 months from the date of commercial operation of the project”*

Considering the foregoing points and the general trend established by the Regulatory Commissions of other States vide their Tariff Orders, the stakeholder has requested to allow following PLF for WtE Projects :

First Year: 65% (stabilization period)

Second Year onwards: 80% (post-stabilization period) up to 25 years



The stakeholder is in agreement with the proposed PLF applicable for Mass Incineration based WTE Projects.

**Sh. Nitin Madam** has suggested that considering the higher capital cost allowed by the Commission, the PLF of more than 85% should be considered.

**BA Prerna Renewables** has submitted that instead of the proposed PLF progression from 65% in the 1<sup>st</sup> year to 80% from the 2<sup>nd</sup> year to the 25<sup>th</sup> year, it is suggested to decide consistent PLF of 65% for the 1<sup>st</sup> year and 70% for the 2<sup>nd</sup> year to 25<sup>th</sup> year. It is submitted that this adjustment is necessary due to the variable nature of the raw material (MSW) and the practical challenges associated with maintaining the proposed PLF percentages.

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

The Commission agree to the proposal submitted by the stakeholder with regard to stabilization period. The Commission decides to fix the normative PLF for Mass Incineration and RDF based MSW Projects as given below:

Mass Incineration based Waste to Energy Project

First Year: 65% (1<sup>st</sup> year of operation including stabilization period)

Second Year and onwards: 75% (upto 25 years)

RDF based Waste to Energy Project

First Year: 65% (1<sup>st</sup> year of operation including stabilization period)

Second Year and onwards: 80% (up to 25 years)

Provided that the stabilization period shall not be more than 6 months from the date of commercial operation of the project.

## **2.8 Clause 3.6: Auxiliary Consumption**

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



The Commission in the discussion paper has proposed normative auxiliary consumption of 14% for RDF based MSW projects and 15.5% for MSW projects based on Mass Incineration for determining the Tariff for WtE projects to be commissioned in the next Control Period.

### 2.8.2. Suggestions/Objections of the Stakeholders

**Abellon Clean Energy Limited** has submitted that the auxiliary consumption for RDF based WtE projects may be considered as 16% and for Mass Incineration Projects as 18%.

It is submitted that the Waste-to-Energy Power Project requires increased airflow for efficient combustion of high-moisture and low calorific value RDF/MSW resulting in requirement of higher fan capacity and load. The requirement of additional fans for side-wall cooling, flue gas recirculation and cylinder cooling along with larger induced draft fan further contribute to the increased auxiliary power consumption compared to conventional biomass or thermal power plants. Additionally, WtE plants operate extra equipment like FGCS (lime and activated carbon injection, bag filters, and boiler cleaning systems), adding to the overall auxiliary power consumption in the process.

Further, the CERC RE Tariff Regulations 2020 provide for the auxiliary consumption for mass incineration and RDF-based WTE projects as 15%.

**Sh. Nitin Madam** has suggested that the proposed normative auxiliary consumption of 14% for RDF based MSW projects and 15.5% for Mass Incineration based MSW power projects is much higher side and the same may not be allowed more than 10%-11%. Considering the higher norms for Auxiliary consumption at 14% / 15.5% and higher capital cost allowed by the Commission, the PLF higher than 85% should be considered for MSW based Power Project.

**BA Prerna Renewables** has submitted that instead of auxiliary consumption of 14%, the same may be allowed at 15% for RDF based MSW Power Project considering the nature of MSW as fuel to be handled. This adjustment will allow more flexibility in auxiliary consumption and better align it with the specific requirements and challenges of each types of project.





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

The Commission notes that the auxiliary consumption varies depending on the technology chosen for conversion of waste to energy. In case of Mass Incineration Power Project, the MSW received at project site is directly utilised for generation of electricity. Therefore, consumption of electricity to run auxiliary equipment of power plant will also be on higher side. Considering the same, Auxiliary consumption of 15.5% was proposed in the discussion paper. Whereas, in case of RDF based MSW power projects, raw MSW received at the project site is required to be processed to prepare RDF. The process equipment also consumes electricity which is part of integrated power project and need to be considered as part of auxiliary consumption of such power project. Further, in the process of converting MSW into RDF, the major impurities are get removed and residual derived fuel (RDF) is being used for generation of electricity. With consideration of this, the Auxiliary Consumption in RDF based Power Project which consists of energy consumption in the processing plant for converting MSW into RDF and to run Power Plant Auxiliary, is lower than Mass Incineration based Power Project. Taking into account the consumption of energy in the processing plant for converting the MSW received from the Local Body into RDF and energy consumption to run power plant auxiliary equipment, the Commission has accordingly decided to allow Auxiliary consumption of 14% for RDF based MSW power project.

In view of above, the Commission decides to continue with Auxiliary Consumption norms as proposed in the discussion paper for MSW Power Projects based on Mass Incineration Technology and RDF based technology as 15.5% and 14% respectively.

## **2.9 Clause 3.8.2: Loan Tenure**

### **2.9.1. Proposed in Discussion Paper**

The Commission in the discussion paper proposed loan repayment period as 15 years as provided in CERC RE Tariff Regulations 2020 which also reflects the present market conditions and will also help to reduce the tariff in the initial years of the project.

### **2.9.2. Suggestions/Objections of the Stakeholders**





TPL has submitted that MSW Power Projects are being set up by private utilities which get loans at higher rates as compared to Govt. Companies having the sovereign backup. Further, banks are not willing to provide funding for period beyond 10 years. Moreover, in the financial market, higher tenure of loan would also result in higher rate of interest. Hence, it is suggested that loan tenure be retained at 10 years.

**BA Prerna Renewables** has submitted that considering the high risk associated with the availability of Municipal Solid Waste (MSW as a raw material, which can significantly impact the overall performance and efficiency of MSW Plants), it is requested to align the loan tenure with this reality by restricting the duration of the term loan as 10 years.

### 2.9.3. Analysis and Commission's Ruling

The Commission has considered the suggestions of stakeholders and decides to fix the loan repayment period equal to 15 years as recommended in CERC RE Tariff Regulation 2020.

## 2.10 Clause 3.8.3: Interest on Term Loan

### 2.10.1. Proposed in Discussion Paper

The Commission in the discussion paper proposed the interest on term loan equal to the prevailing SBI MCLR (one-year tenure) plus 200 basis point as provided in CERC RE Tariff Regulations, 2020. Accordingly, the Commission in the discussion paper proposed interest rate on loan as 8.15% + 200 basis points, i.e. 10.15% for determining the Tariff for WtE projects to be commissioned in the next Control Period.

### 2.10.2. Suggestions/Objections of the Stakeholders

**Abellon Clean Energy Limited** has suggested that the applicable interest on term loan may be decided at 11.95% plus. The Objector has requested to note that the WTE projects established by Abellon Clean Energy Limited at Jamnagar have been funded back in the year 2019 -2020 and accordingly operate with an interest rate of 11.95%.

The Discussion Paper considers 200 basis points over the prevailing SBI MCLR for



determining the interest rate, which is an incorrect reflection of the true market practices. It may be considered that IREDA has granted financial assistance @ 11.95% to the existing / in pipeline WTE power Projects.

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

The Commission notes that in a generic tariff determination process, the Commission cannot fix the norms for interest on term loan by relying on the data / details of any specific project. The Commission therefore decides to follow the methodology specified in CERC RE Tariff Regulations 2020. Accordingly, the Commission decides to fix interest on term loan at the rate of 10.15% per annum for determination of generic tariff under this Order.

## **2.11 Clause 3.8.4 Rate of Depreciation**

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

The Commission in the discussion paper proposed the depreciation rate at 4.67% per annum for the first 15 years and 2% from 16<sup>th</sup> year to 25<sup>th</sup> year as per the CERC RE Tariff Regulations, 2020 for determining the Tariff for WTE projects to be commissioned in the next Control Period.

### **2.11.2. Suggestions/Objections of the Stakeholders**

**Abellon Clean Energy Limited** has suggested that in line with the provisions under CERC RE Tariff Regulations 2020, it is to be considered that the salvage value of the project to be 10% and balance 90% of the Capital Cost of the Project is to be allowed as depreciation. Keeping in line with the findings of the Commission in the Order No. 04 of 2016, it is suggested to allow the Depreciation @ 7% of capital cost per annum for the initial 10 years and depreciation @ 2% for the remaining life of the Plant.

**TPL** has suggested to ensure that depreciation rate is commensurate to the loan repayment, and it is requested to retain the existing depreciation rate of 7%.

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



The Commission has fixed 15 years as a loan repayment period for tariff determination purpose during the new control period based on the present market conditions which is also in line with the provisions under CERC RE Tariff Regulations 2020. The salvage value of the assets has been considered as 10% and depreciation is allowed up to 90% of the capital cost of the assets. Commensurate with the loan repayment period, depreciation rate of 4.67% per annum has been specified for first 15 years and balance depreciation is spread during remaining useful life of the project. Accordingly, the Commission has considered the depreciation @ 4.67% per annum for the first 15 years and @ 2% per annum from 16<sup>th</sup> year to 25<sup>th</sup> year as per 'Straight Line Method' for determination of generic tariff under this Order.

## **2.12 Clause 3.8.6 Interest on Working Capital**

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

The Commission in the discussion paper proposed interest on working capital for tariff determination purpose as SBI MCLR rate of 8.15% (average of last six months) plus 250 basis points i.e., 10.65% (8.15% + 2.5%), as per the GERC's MSW Tariff Order No. 04 of 2016 dated 10<sup>th</sup> November, 2016 for determining the Tariff for WtE Projects to be commissioned in the next Control Period.

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

**Abellon CleanEnergy Limited** has submitted that the determination of Interest on Working Capital as 10.65% is not accurately reflective of the current market trends & practices and ought to be revised. As such, a comparative analysis of the findings of the other SERCs may be considered for a better picture.

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

The Commission notes that the interest on working capital equivalent to SBI MCLR plus 250 basis point is adequate and comparable to the interest on working capital considered by other SERCs in respective Tariff Orders /Regulations. Hence, the Commission decides to retain the interest rate on working capital as 10.65% (8.15% + 2.5%).



## 2.13 Clause 3.8.7: Return on Equity

### 2.13.1. Proposed in Discussion Paper

The Commission in the discussion paper proposed the normative Rate of Return on Equity equal to 14% for the next Control Period. The Commission also proposed to allow Income Tax at 17.470% (MAT) for the initial period of 10 years and thereafter from 11<sup>th</sup> year onwards up to the 25<sup>th</sup> year, a Corporate Tax at the rate of 34.94% for both, i.e., MSW projects based on Mass Incineration and RDF based technology.

### 2.13.2. Suggestions/Objections of the Stakeholders

**Abellon Clean Energy Limited** has suggested that the RoE of at least 16% ought to be allowed to promote the WTE sector in the State of Gujarat. As it is evident from general market trends, operating a product in a relatively new environment always comes with an element of operational risk and thus, it is imperative that the same is provided for. Further, determining a competitive ROE threshold would resultantly mean better potential returns for the stakeholders and thereby attracting better investment opportunities for the Project.

**TPL** has suggested that instead of considering benefit in terms of exemption in Cross Subsidy Surcharge / Additional Surcharge and granting concession in applicable Open Access charges, which would yield benefit to the single entity, it is appropriate to consider necessary increase in RoE from 14% to 16% to incentivize the developers for setting up of MSW power projects which will serve to achieve important environmental objectives.

**BA Prerna Renewables** has suggested for increased Rate of Return on Equity @ 16%. It is suggested that such an adjustment is crucial to promote and attract Waste to Energy projects in the State of Gujarat, which possesses a significant potential of 776 MW. By offering a higher rate of Return on Equity, it will effectively incentivize the developers and create a conducive business environment for the growth of the waste to energy sector.





The stakeholder further requested to gross up the Post-tax Return on Equity to arrive at Pre-Tax Return on Equity and then multiply it with the applicable tax rate (i.e. MAT @ 17.42% during the first 10 years and Corporate Tax @ 34.94% for balance 15 years) to calculate the applicability of tax for the purpose of determining the Tariff.

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

The Commission notes that the normative Return on Equity proposed in the discussion paper is as per provisions of GERC (Multi Year Tariff), 2016. The same approach has consistently been followed by the Commission and allowed Return on Equity @ 14% in its Orders for determination of tariff for various types of RE technologies like Wind, Solar, Biomass, MSW based power projects, etc. On the same line, the Commission decides to fix the Return on Equity at the rate of 14% per annum for determination of tariff under this Order. Further, the Commission decides to retain the provisions for allowing Income Tax @ 17.470% (MAT) for the initial period of 10 years and thereafter from 11<sup>th</sup> year onwards up to the 25<sup>th</sup> year, a Corporate Tax @ 34.94% for both, i.e., MSW projects based on Mass Incineration and RDF based technology.

## **2.14 Clause 3.9.1 Benefit Due to Accelerated Depreciation**

### **2.14.1. Proposed in the Discussion Paper**

As per the current provisions under Income Tax Act, 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, an additional depreciation of 20% in the initial year is extended to new assets acquired by power generation companies vide amendment in the section 32, sub-section (1) clause (iia) of the Income Tax Act, 1961. With this, the projects can avail 60% depreciation in the first year of commissioning. From the second year onwards, depreciation at the rate of 40% on written-down-value (WDV) is available.





### **2.14.2. Suggestions/Objections of the Stakeholders**

GUVNL has suggested to provide that in case the generating company is not claiming the Accelerated Depreciation benefit, the Power Purchase Agreement entered into with the Generating Company shall include a provision for submitting an Undertaking by the Generating Company along with certificate from the Chartered Accountant indicating that Accelerated Depreciation benefit would not be availed for the project.

Provided also that if benefit of Accelerated or Higher Depreciation has been claimed despite of submission of Undertaking, in such case GUVNL / DISCOM shall be entitled to recover the amount wrongly claimed along with penal charges at Late Payment Surcharge (LPS) rate.

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

The Commission in the present tariff order has decided to specify two separate tariffs for MSW based power projects i.e. with and without factoring the benefit of Accelerated Depreciation, as proposed in the discussion paper.

## **2.15 Clause 3.9.2 Financial Assistance, Subsidy or incentive by State or Central Govt**

### **2.15.1 Proposed in Discussion Paper**

If any benefit/support/financial assistance in any form is received by the project developer from Central Government/State Government/ULB/UDD/Municipal Corporations/any other agency, the same shall be passed on to the procurer (purchaser) of electricity. The project developer or Distribution Licensee shall approach the Commission for re-determination of the tariff.

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

GUVNL has submitted that Government of Gujarat Waste to Energy Policy, 2022, proposes the methodology for sharing of tariff between GUVNL/DISCOM and Civic Authority. Further, RE attribute calculated as difference of PPA tariff and APPC of DISCOM is to be shared between GUVNL and other DISCOMs. Accordingly, the tariff sharing mechanism should be included in the Order.



### 2.15.3 Analysis and Commission's Ruling

The Commission notes that the tariff determined by the Commission in this Order is in conformity with the provisions outlined for MSW projects tariff determination under the National Tariff Policy, 2016. The National Tariff Policy, 2016 recommends for procurement of power by the distribution licensees from MSW based power projects as per the tariff determined by the appropriate Commission under Section 62 of the Act. The Commission has also considered the provisions under Gujarat Waste to Energy Policy while preparing the discussion paper. Accordingly, in this Order, the Commission has determined the generic tariff under Section 62 of the Act for procurement of power by Distribution Licensee from MSW based power projects.

The Commission clarifies that in case distribution licensee decides to procure electricity from the MSW based Power project at a tariff discovered through competitive bidding process in that case the tariff determined by the Commission in this Order shall be considered as ceiling tariff.

The Commission has also noted the suggestion of GUVNL to provide for tariff sharing mechanism in the Order as provided under Government of Gujarat Waste to Energy Policy 2022. The Commission decides to incorporate the tariff sharing mechanism as outlined in the Gujarat Waste to Energy Policy, in the Order as stated under:

- The WTE Project Developer may sell power to Distribution Licensee on long term basis. The tariff and its modalities shall be as follow:
  - a. The PPA signed with the MSW based Power Project Developer at a tariff determined in this Order or at a tariff discovered through Competitive bidding process and adopted by the Commission, as the case may be, shall be termed as “approved tariff”;
  - b. The Concerned Civic Authority shall bear 20% of such “approved tariff”. The balance 80% of the “approved tariff” shall be termed as the “PPA Tariff” payable by GUVNL;
  - c. The concerned Civic authorities may avail grant from State Government towards tariff implication equal to 20% of the “approved tariff”;



- d. A Tripartite Agreement shall be executed amongst the WTE Project Developer, the Nominates Agency – GUVNL and the concerned Civic Authority under intimation to Climate Change Department (CCD), Urban Development Department (UDD) and Energy & Petrochemicals Department (EPD), Government of Gujarat;
- e. The WTE Project Developer shall raise monthly energy invoices to GUVNL at tariff approved by GERC (i.e., at the “approved tariff”) as per the terms and conditions of the PPA, along with copy of duly certified State Energy Account (SEA) published by SLDC;
- f. GUVNL will pay to the WTE Project Developers the cost of energy supplied as per the PPA tariff (80% of the approved tariff). It will also pay the amount towards the 20% payable by the concerned civic authority from the grant made available to it by CCD/ UDD / ULB. Such 20% of the “approved tariff” shall be made available to GUVNL by CCD / UDD / ULB on quarterly advance basis;
- g. Every quarter, GUVNL will send payment/generation status report to the CCD & EPD in respect of energy and amount paid to the WTE Project Developer;
- h. The electrical component of power shall be utilized by local distribution company where the WTE Project is located. Such power shall be charged to Local DISCOM at Average Power Purchase Pooled Cost (APPC) of GUVNL for the year of commissioning of the WTE Project. The APPC once fixed shall remain constant for the life of the project. APPC shall mean power purchased at generator bus excluding renewable power purchase, transmission cost and power purchased for sale to other than consumers;
- i. The difference between the “PPA Tariff” and APPC charged to Local DISCOM shall be considered as cost of Renewable Attribute. On payment of this cost, the Distribution Company shall be eligible for allotment of equivalent number of units of Renewable Attribute. On monthly basis such Renewable Attribute units and their cost shall be apportioned by Nominated Agency - GUVNL to all Distribution companies (including Private Distribution Licensees, Distribution Licensees/ Deemed Distribution Licensees



supplying power in SEZs area etc.) in proportion to their power consumption of previous year;

- j. GUVNL will raise two separate bills to Distribution Companies (i) for supply of electrical component of power as mentioned above & (ii) for renewable attributes as mentioned above. Distribution Companies shall be required to make payment to GUVNL within 7 days from issuance of bill failing which they shall be liable to pay delayed payment charges as per terms of the PPA;
- k. Such apportioned Renewable Attribute units shall be considered for meeting RPO for the respective DISCOM;

## **2.16 Clause 4.1: Transmission and Wheeling Charges**

### **2.16.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed following:

For Captive Consumption:

**a) Wheeling of power to consumption site at 66 kV voltage level and above:** The wheeling of electricity generated from Project to the desired location(s) within the State, shall be allowed on payment of Transmission Charges and Transmission Losses applicable to normal Open Access consumer.

**b) Wheeling of power to consumption site below 66 kV voltage level:**

**I. In case injection or drawl is at 66 kV and drawl or injection is at 11 kV:** The wheeling of electricity generated from Power Project to the desired location(s) within the State shall be allowed on payment of Transmission Charges and Transmission Losses applicable to normal Open Access consumers and 50% of Wheeling Charges and 50% of Distribution Losses of the energy fed to the grid as applicable to normal Open Access consumers.

**II. Injection at 11 kV and drawl at 11 kV and below voltage level:**





a) When the point of injection and drawl at 11 kV or below voltage level lies within the same Distribution Company, the user shall pay 50% of Wheeling Charges and 50% of Losses of the energy fed into the grid as applicable to normal Open Access consumers.

b) In case the point of injection and drawl at 11 kV or below voltage level lies in different distribution area, the user shall pay 50% of Wheeling Charges and 50% of Losses of the energy fed to the grid as applicable to normal Open Access consumers for each Distribution Company. Moreover, transmission charges and transmission losses as applicable to normal Open Access Consumer shall also be levied.

**III.** Waste to Energy Project owners who desire to wheel electricity to two or more locations, shall pay 5 paise per unit on energy fed in the grid to the Distribution Company concerned in whose area power is consumed in addition to above mentioned transmission charges and losses, as applicable.

**c) Cross Subsidy Surcharge:**

- Cross Subsidy Surcharge and Additional Surcharge shall not be applicable for WTE Projects under Captive Route.
- Cross Subsidy Surcharge and Additional Surcharge shall be exempted for WTE Projects under Third Party Sale.

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

**TPL** has submitted that in case of MSW Projects set up for third-party sale, there is no clarity provided in the discussion paper. It is submitted that Commission may allow sale of electricity generated from MSW project for Captive use or third-party sale in addition to mandatory requirement for Distribution licensee to procure power from such project. However, there cannot be different mechanism for recovery of Transmission charges/losses by the Transmission Licensee and Wheeling Charges/losses by the Distribution Licensee as same amounts to discrimination.



It is submitted that the MSW Project set up for captive/third party use should be treated at par with other open access consumers by levying 100% Wheeling Charges and 100% Transmission Charges in terms of capacity booked, which includes charges in Cash and Kind, as determined by the Commission.

It is submitted by the stakeholder that the Act provides for recovery of Cross Subsidy Surcharge and Additional Surcharge in accordance with the provisions of Section 42 of the Act. Thus, the Commission needs to take into consideration the provisions of the Act and provide for levy of applicable Cross Subsidy Surcharge and Additional Surcharge for MSW based Power Projects set up for Captive Use as well as Third Party sale. The transactions for Third Party Sale as well Captive Use should necessitate payment towards 100% Cross Subsidy Surcharge & 100% Additional Surcharge.

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

The Commission decides that in case of MSW Power Plant set up for captive use / third party sale, the transmission and/or wheeling of energy shall be allowed on payment of transmission and/or wheeling charges and losses as well as Cross Subsidy Surcharge, Additional Surcharge and other Open Access charges, as applicable to Green Energy Open Access transactions as per GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and its amendment from time to time read with MoP Rules, 2022.

## **2.17 Clause: 4.2: Metering**

### **2.17.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed that:

Power Project based on MSW 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 electricity generated shall be metered and readings taken jointly by MSW WTE Project developer with the representative of DISCOM and GETCO at the metering point, on monthly basis.
- The WTE Project Developers shall also install Remote Terminal Unit (RTU) 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.

### 2.17.2 Suggestions/Objections of the Stakeholders

**SLDC, Gujarat** has suggested to include following para in the aforesaid clause:

*“Power Project based on MSW shall have to provide four quadrant ABT compliant meters at the interface point as well as opposite end as a standby meter 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.*

It is further suggested that the first para of the clause may be revised providing that “the electricity generated shall be metered and readings shall be jointly taken by MSW WTE Project Developer and representative of DISCOM and GETCO at the metering point on weekly basis. Such data may be sent to SLDC as per procedure and format and communication media as desired by SLDC.”

It is also suggested that the last para of the clause may be revised providing that “State Load Dispatch Centre shall certify injected energy by replacing schedule energy with actual energy and energy drawn (if any) from local DISCOM on monthly basis, provided that UI/ DSM shall be in force as per applicable Regulation from time to time. (Means, UI/ DSM will be derived based on schedule and actual injected energy as per Clause No. 4.8 Forecasting Scheduling, before replacing schedule energy with actual”.

### 2.17.3 Analysis and Commission’s Ruling



The Commission finds merit in the submission of SLDC from the viewpoint of grid operation and accordingly, accept the changes suggested by SLDC. The Commission decides to modify the metering related provisions for MSW Projects as given below for the new control period.

- MSW based Power Project shall have to provide four quadrant ABT compliant meters at the interface point as well as opposite end as a standby meter 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 electricity generated shall be metered at the metering point and readings taken jointly by MSW WTE Project developer and representative of DISCOM and GETCO, on weekly basis. The data shall be sent to SLDC as per procedure, format and communication media as decided by SLDC.
- The WTE Project Developers shall also install Remote Terminal Unit (RTU) 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.

## **2.18 Clause: 4.4: Banking of Energy and Purchase of Surplus Power**

### **2.18.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed that Banking of energy shall be permitted for MSW to energy-based projects on billing cycle basis as per the provisions of the MoP Green Energy Open Access Rules, 2022 as amended and the GERC Green Energy Open Access Regulations notified by the Commission and amended from time to time.

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

TPL has suggested that Projects be mandated to carry out energy accounting in 15 minute-time block basis and no banking facility should be provided to such projects. Any surplus energy during the 15 minute-time block basis, shall be treated as inadvertent with no compensation.





Without prejudice to the above, it is suggested that in case the Commission proposes to provide banking facilities to such projects, same shall be allowed upon payment of banking charges (in cash or kind) in cost reflective manner taking into account the cost implications for DISCOMs in providing such banking facility. It is submitted that DISCOMs are required to arrange such quantum of power from market to provide banking facility at Marginal Cost as and when consumers require. Hence, it is suggested to consider highest rate of power purchased by DISCOMs for providing banking facility.

**GUVNL** has submitted that it is not appropriate to provide Energy banking facility on billing cycle basis to the MSW based projects as banking facility is required for the RE projects having infirm nature of generation and MSW based generation is firm in nature.

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

The Commission decides that the provisions related Banking facility & charges, methodology for settlement of banked energy and treatment for un-utilised banked energy at the end of banking period etc., shall be governed by the MoP's Green Energy Open Access Rules 2022 and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 and its subsequent amendments, if any.

Further, the Commission decides to provide that the banking facility shall be an optional facility provided to the consumers availing open access from MSW based Power Project as provided under GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024.

## **2.19 MSW based Power Projects set up under REC mechanism for Captive Use / Third Party Sale**

### **2.19.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed that Power projects based on MSW availing Open Access for captive use/third-party sale under REC mechanism shall be governed as per the CERC REC Regulations. Such projects shall be allowed to wheel the electricity on payment of applicable Transmission Charges/Losses, Wheeling Charges/Losses and other charges as



applicable to other normal Open Access consumers. No Cross Subsidy Surcharge and Additional Surcharge shall be applicable for the energy generated and supplied from MSW WtE Project to the consumer.

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

GUVNL has submitted for levy of Cross Subsidy Surcharge and Additional Surcharge for energy availed through Open Access from MSW based Power Projects as applicable to normal open access consumers. In justification of submission, GUVNL submitted that under REC mechanism, the project is eligible to avail RE certificate towards RE attribute of energy generated from the project and earn additional revenue towards trading of RECs. Thus, under the REC mechanism, the project is only selling electrical attribute of energy generated from the MSW project.

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

The Commission does not agree with the submission of GUVNL as same is not aligned with the provisions under MoP's Green Energy Open Access Rules, 2022 and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024. The Commission decided to retain the provision as proposed in the discussion paper.

The MSW based power projects availing Open Access for captive use/third-party sale under REC mechanism shall be governed as per the CERC REC Regulations. Such projects shall be allowed to wheel electricity on payment of applicable Transmission Charges/Losses, Wheeling Charges/Losses and other Open Access charges as applicable to green energy Open Access transaction as per the provisions of GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 read with MoP Rules, 2022. No Cross Subsidy Surcharge and Additional Surcharge shall be applicable on energy supplied to consumers from MSW based Power Project, as provided under GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 read with MoP Rules, 2022.

## **2.20 Energy Accounting and Surplus Power Injection**

### **2.20.1 Proposed in Discussion Paper**



The Commission in the discussion proposed that the energy accounting for all WtE Projects shall be in accordance with the provisions of the MoP's Green Energy Open Access Rules 2022 as amended and applicable Regulations framed by the GERC and order of the Commission from time to time. The Banking of energy facility and charges for it shall be allowed as per the provisions of the MoP's Green Energy Open Access Rules 2022 as amended and applicable Regulations framed by the Commission and Order, if any, on this subject matter from time to time. The treatment of the Surplus Energy, if any, after giving set off shall be as per the provisions of the MoP's Green Energy Open Access Rules 2022 as amended and applicable Regulations framed by the Commission and Order, if any, from time to time.

For net import of power by the MSW based WtE Power Project, Distribution Company/Licensee will 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.

The surplus power if any available at the end of banking cycle shall be considered as inadvertent flow of energy.

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

TPL has submitted that power generated from MSW to energy plant is schedulable power akin to conventional generation plant hence the project should have mandated to carry out energy accounting in 15 minutes' time block basis and no banking facility should be provided. Any surplus energy during the 15 minutes' time block shall be treated as inadvertent flow with no compensation. above.

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

The Commission has gone through the suggestion/comment received from the stakeholder with regard to Energy Accounting methodology proposed in the discussion paper. The Commission decides that the provisions related to Energy Accounting, banking facility and charges, treatment of banked surplus energy remained surplus after banking period consumption, etc. for



MSW based Power project, shall be governed as per the provisions of MoP's Green Energy Open Access Rules 2022 and its subsequent amendments thereto and GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024 as amended from time to time.

## **2.21 Clause 4.6: Security Deposit**

### **2.21.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed that the MSW based power project developers are required to furnish Bank Guarantee of Rs. 15 Lakh/MW as a security deposit after entering into PPA with obligated entities (entities obliged to fulfil the RPO). The Bank Guarantee shall be returned if the developer achieves commercial operation within the time period mentioned in the PPA. The Bank Guarantee shall be encashed if the project is not commissioned within the specified time period as stipulated in the PPA.

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

**Abellon Clean Energy Limited** has submitted that the aforesaid proposal of the Commission is considerably higher than the provision contained in the Order No. 04 of 2016 wherein the requisite BG was provided at Rs. 5 Lakhs/MW. Accordingly, it is suggested that the BG to be furnished by the project developer ought to be limited to Rs. 5 Lakhs / MW in line with Order No. 04 of 2016 dated 10.11.2016.

**BA Prerna Renewables** has submitted to reduce the amount of bank guarantee from proposed INR 15 Lacs / MW to INR 5 Lacs / MW.

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

The Commission notes that timely commissioning of MSW Power Projects is important from the point of view of societal and environment benefits, avoid blocking of project and retain seriousness of the developer, the BG is required to be submitted by the project developer. The Commission has considered the suggestions of stakeholders and decides to reduce the BG amount from Rs. 15 Lakh /MW to Rs 10 Lakh/MW. The MSW Project Developers would require to furnish





Bank Guarantee of Rs. 10 Lakh/MW as a security deposit at the time of entering into PPA with obligated entities.

## 2.22 Clause 4.8: Forecasting and Scheduling

### 2.22.1 Proposed in Discussion Paper

The varying calorific value of waste due to its heterogeneous nature & its characteristics and management of the fuel done by the power project developer, the energy generation from MSW based energy project / plant may be affected. However, with verifying and measuring the various parameters of MSW at power plant site and an option available for revision in schedule to such power plant after some time with consideration of parameters, it may be predicted in a range and in order to ensure grid discipline and grid security, it is proposed that the MSW Projects shall require to declare plant availability with consideration of the available MSW at project site and its parameters & plant on day ahead basis as well as intra-day basis. Since, the MSW based project having must run status, the WTE Projects shall abide by the provisions of Intra-State ABT, Forecasting, Scheduling & Deviation Settlement Mechanism as per the Orders/Regulations of the Commission & National Policies/Guidelines as amended from time to time.

### 2.22.2 Suggestions/Objections of the Stakeholders

**Abellon Clean Energy Limited** has suggested that manual variation in output can be considered only after fulfilling the primary goal of safely incinerating the RDF in the boiler keeping in mind the prescribed emission limit. Further, the bulkiness of the waste makes the WTE boilers inherently slow in response as compared to thermal power plants. Therefore, the WTE plants ought to be given tolerance band of deviation from schedule.

It is also suggested that the Commission may allow the tolerance limit as prescribed under the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations 2022, which is reproduced as under:

*" 8. Charges for deviation*



i) Charges for deviation in a time-block by a seller shall be payable by such seller as under:

*For a general seller being a generating station based on Municipal Solid Waste, charges for deviation by way of over-injection shall be zero and deviation by way of under-injection shall be charged zero [up to 20% Deviation-general seller (in %)] and at normal rate of charges for deviation beyond [20% Deviation general seller (in %)]. "*

In addition to the aforesaid, the following can be considered as valid grounds supporting the need for a deviation band:

- The Central Electricity Authority (CEA) has undertaken detailed study for the operational and technical aspects in relation to generation of electricity from WTE projects and deviation charges applicable to WTE projects under prevailing DSM Regulations. CEA has recommended to the CERC to review the deviation norms and provide exemption within 30% range for WTE projects under DSM mechanism.
- MoP and MNRE has also recommended to the CERC to provide different treatment to WTE projects for applicability of deviation charges highlighting that WTE Projects assumes paramount importance in achieving Government's Swachh Bharat Mission and such projects are subject to deviation penalties under the existing Regulations for the cause which is not in their control.
- CEA in its letter dated 26.06.2021 to the CERC pointed out that in case of WTE projects, the production of electricity is technically a by-product with primary objective to process and scientifically dispose the Waste irrespective of its quality.
- The WTE Projects are mandated to process the waste irrespective of the input or waste quality. Processing and disposal of waste is a critical requirement in the interest of environmental and public health. Strong emphasis has been laid on this in the respective objectives of "Swachh Bharat Mission" and "Namami Gange Mission".
- As per data from multiple sources, the deviations in calorific values are approximately within 30% range from the anticipated or assumed average values. Considering the wide range of possible deviations (approx. 30%) in calorific value of waste, there is a likely possibility of deviation of +/- 30% in actual generation from waste to energy plants.



- Existing DSM mechanism does not differentiate between WTE projects and conventional power projects for imposition of DSM charges/penalties, which is causing financial burden on WTE projects specifically for factors not under their control. This has been creating hindrances in the proper growth of WTE power projects and it is against the spirits of Government of India's prestigious mission i.e. "Swachh Bharat Mission" and goal of Carbon Neutral, Garbage free city and main objective under WTE Policies 2016 (as amended from time to time) and 2022.
- WTE Policy 2022 also recognized that Municipal WTE plants in the State are required to handle varying caloric value of waste due to its heterogeneous nature and it is difficult to accurately predict the generation from MSW plants, however, can be predicted in range only. Further, the scheduling and Deviation Settlement mechanism shall be governed as per the CERC's Order/Regulation & National Policy/Guidelines as amended from time to time.
- The Commission vide its Order dated 27.12.2019 in the Petition No. 1776 of 2019 has already clarified the position that the amendment to CERC DSM Regulations from time to time shall be implemented by SLDC for State entities. Similarly, as per the directives of the Commission, SLDC is required to implement CERC DSM norms of Municipal Waste to Energy plants for State entities in totality and without any exception.

The Stakeholder has further submitted that the CERC vide public notice dated 07.09.2021 had issued draft CERC DSM Regulations 2021 along with Explanatory Memorandum which provides that the regional entity generators are to be paid based on schedule energy. This implies that in the event of under injection, they will be able to retain the energy charge paid to them without producing actual energy. In order to ensure that this does not become a perverse incentive, the Commission has extended free band of deviation only up to 20% of schedule, as against CEA's recommendation for exemption up to 30%. The intent is to balance the interests of MSW projects in terms of ensuring recovery of part of the fixed cost (by allowing retention of energy charge up to 20% deviation) while at the same time making sure that system operation is not put to risk due to wide deviation from schedule.



In the Central Electricity Regulatory Commission (Deviation Settlement Mechanism and Related Matters) Regulations, 2022, CERC seeks to differentiate Waste to Energy Power Projects with conventional power projects by providing separate DSM treatment to WTE based power projects which needs to be implemented for MSW power plants in the State also.

Upon recommendation from MoP, CEA and MNRE, CERC has granted + 20% exemption band instead of + 30% exemption band suggested by Gol for applicability of DSM charges for MSW to Energy project.

Based on above submissions, the Stakeholder has suggested to implement deviation band in line with the CERC DSM Regulation 2022.

**GUVNL** has submitted that the Commission may incorporate mechanism for monitoring schedule generation vis-à-vis actual generation and levy of penalty in the event of deviation mechanism being used for commercial gain by MSW project developer.

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

The Commission is of the view that MSW based Power Projects shall require to declare plant availability on day ahead basis as well as intra-day basis with consideration of availability of MSW at project site and operational parameters of the Power Plant. The MSW based Power Projects have been provided Must Run status under the Order / Regulation of the Commission and it is important that MSW based Power Projects shall abide by the provisions of Intra-State ABT and Scheduling & Deviation Settlement Mechanism as per the Order/Regulations of the Commission.

The Commission has considered the suggestions of stakeholder that accurate scheduling is not possible for MSW based Power Project due to inherent characteristic of MSW as fuel used in the Plant and need to be revisited for providing relaxation in scheduling norms.

The Commission has also considered the suggestions of SLDC that the energy accounting of MSW based Power Project be carry out with replacing the scheduled energy with actual injection of





energy for certification in the State Energy Account (SEA) for payment purpose so as to avoid the possibility of gaming by the Project Developer.

Considering aforesaid suggestions, the Commission decides that State Load Dispatch Centre shall certify injected energy in the SEA by replacing the scheduled energy with actual injected energy and energy drawn (if any) from local DISCOM on monthly basis, provided that UI/ DSM shall be in force as per applicable Regulation from time to time. The UI/ DSM charges shall be derived based on scheduled and actual injected energy as per Clause No. 4.8 of Scheduling and Dispatch Code (Annexure-III) notified under the GERC Intra-State ABT Order No. 3 of 2010 dated 01.04.2010.

The Commission has also noted that SLDC has filed Petition No. 2159 of 2022 under Section 86 (1) (c) of the Electricity Act, 2003 read with ABT Order No. 06 of 2010, Order No. 03 of 2010 and GERC Letter dated 05.03.2015 for implementation of the Deviation Settlement Mechanism as per CERC (Deviation Settlement Mechanism and Related Matters) Regulations, 2022 with modifications for the State of Gujarat. The Commission has noted that MSW based Power Plant has been in operation at Jamnagar since more than two years and available actual data of such plant regarding deviation etc. may be useful for taking appropriate view in the matter. The Commission will look into the subject matter in detail and take final decision to make necessary changes in the Regulation /Order of the Commission to accommodate MSW based power projects as deem fit.

## **2.23 Clause 4.9: Commissioning of MSW-based WTE Plant**

### **2.23.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed that:

The Project Developer shall provide the copy in advance to the Nodal Agency GUVNL/DISCOMs of the (i) Manner in which 'Performance Test' to be undertaken as prescribed by the Original Equipment Manufacturer (OEM) and (ii) copy of relevant Contract including Guaranteed Performance Parameter by the OEM as per Supply Agreement for demonstrating the achievement of said parameters to be undertaken as part of testing & commissioning activity prior to actual commissioning of MSW WtE Plant. Moreover, said 'Performance Test' (like continuous 72 hours'



test of rated parameters) shall be done in the presence of the representatives of the GEDA, GUVNL (Nodal Agency as per GoG Policy), relevant distribution licensee, transmission licensee and Independent Engineer appointed by the Procurer(s). The Project Developer shall intimate in advance regarding the date & time of said Performance Test to the (i) GEDA (ii) GUVNL (Nodal Agency as per GoG Policy)/DISCOM, (iii) Transmission licensee and (iv) Independent Engineer appointed by the Procurer(s) and the representatives authorised by respective entity/person shall witness such test on the date & time so provided. The test results of Performance Test shall be verified as regard meeting the Guaranteed Parameters of the OEM supplier and test report shall be jointly signed by the representatives of (i) MSW WtE Project Developer, (ii) GEDA, (iii) GUVNL (Nodal Agency as per GoG Policy)/DISCOM, (iv) Transmission licensee and (v) Independent Engineer appointed by the Procurer(s).

It is made clear that commissioning will qualify only when the aforesaid Performance Test is witnessed by all representatives and necessary certificate is jointly signed. Thereafter, the commissioning of MSW Power Plant shall be done in presence of the representatives of (i) MSW Project Developer (ii) GEDA (iii) GUVNL (Nodal Agency as per GoG Policy)/DISCOM (iv) Transmission licensee and (v) Independent Engineer as appointed by the Procurer(s). All these representatives shall sign the Commissioning certificate including all other relevant information. Any commissioning undertaken in absence of representative of any of above entities and not witnessed shall not qualify as 'Commissioning'. The MSW Power Project Developer shall co-ordinate with GEDA for aforesaid procedure. GEDA shall in turn intimate and co-ordinate with all other entities with regard to above activities, date, time etc.

### 2.23.2 Suggestions/Objections of the Stakeholders

**Abellon Clean Energy Limited** has suggested that the Commission may consider for reverting to the provisions included in the 2016 Order, wherein such additional requirements as proposed in the discussion paper was not included. For demarcation of the responsibilities, GOG vide WTE Policy 2022 has made GEDA, UDD/Swachh Bharat Mission Department as the Nodal Agency for implementation of WTE projects in order to ensure procedural uniformity amongst the concerned



UDCs / ULBs / Municipal Corporations for undertaking various activities. So Nodal Agency to prescribe the format for the information to be shared and advance notice to be given. Further, the performance test to be undertaken is not one day parameters to be achieved on the same day, and it has longer stabilization period during which will be gradually achieved and hence it is not possible to verify the parameters on the commissioning date. Therefore, the data pertains to performance parameters cannot be tested on commissioning date.

**GUVNL** has suggested that the Nodal Agency designated by the State Government under the Waste to Energy Policy 2022 is GEDA and GEDA shall be given the responsibility of certification of commissioning of the project and performance test.

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

The Commission has considered the submission of various Stakeholders and decides that GEDA shall be the co-ordinating agency for the purpose of commissioning and performance test related communication and hence the MSW Power Project developers need to communicate with GEDA with regard to performance test and commissioning of the plant. The Commission is not insisting the developers to demonstrate the performance test during first day of the operation. The same can be undertaken during the stabilization period as convenient to the developer. However, the Project Developer shall require to intimate in advance regarding the date & time of said Performance Test to the (i) GEDA (ii) GUVNL (Nodal Agency for procurement of power as per GoG Policy)/DISCOM, (iii) Transmission licensee and (iv) Independent Engineer appointed by the Procurer(s). The representatives authorised by respective entity, shall verify the performance Test result along with Certificate from Independent Engineer while granting the Commissioning Certificate for the project.

It is made clear that project commissioning will be qualified only if the aforesaid Performance Test is witnessed by the Representative of GEDA, GETCO, DISCOM and Independent Engineer and necessary documents are jointly signed by them. Thereafter, the commissioning of MSW Power Plant shall be done in presence of the representatives of (i) MSW Power Project Developer (ii) GEDA (iii) GUVNL / DISCOM (iv) Transmission licensee and (v)



Independent Engineer as appointed by the Procurer(s). All these representatives shall sign the documents related to commissioning of project. Any commissioning undertaken in absence of representative of any of above entities and not witnessed by them, shall not be qualified as valid 'commissioning' of the Power Project. The MSW Power Project Developer shall co-ordinate with GEDA for aforesaid procedure. GEDA shall in turn intimate and co-ordinate with all other entities in relation to above activities, date & time etc.

## **2.24 Clause 4.10: Information & data sharing**

### **2.24.1 Proposed in Discussion Paper**

The Commission in the discussion paper proposed that the Project Developer shall maintain the record on (a) Daily basis, (b) Monthly basis and (c) Annual basis (Financial Year) of following information:

- (i) Opening Balance of MSW fuel, if any
- (ii) Opening Balance of Calorific Value of MSW fuel, if any
- (iii) Quantity of MSW received from the concerned Municipal Corporation/ULB with whom Concession Agreement is signed by the MSW Power Project Developer
- (iv) Calorific Value of MSW fuel received, if determined by approved laboratory
- (v) Quantity of MSW utilised for generation of electricity
- (vi) Calorific Value of MSW fuel utilised
- (vii) Gross Electricity Generation
- (viii) Auxiliary consumption
- (ix) Net Electricity Generation as per SEA of SLDC
- (x) Closing Balance of Quantity of MSW fuel





(xii) Quantum of RDF and other product, if any, available from the process of MSW at power plant site while processing the MSW to RDF.

(xiii) Fly ash if any available after the production of electricity.

(xiv) Disposal of waste from the plant.

(xv) Additional information as suggested in Gujarat Solid Waste Policy 2022.

The above information shall be provided with monthly invoices raised by MSW Power Project Developer (Supplier) to the Nodal Agency (GUVNL)/DISCOM (Procurer). Moreover, MSW WtE Project Developer shall also upload the above data/information/details on its website duly updated on day-to-day basis. The Nodal Agency shall verify above aspects will processing the invoice(s) raised by MSW WtE Project Developer.

It is made clear that any electricity generated through use of any other fuel other than MSW fuel to be supplied by the concerned Municipal Corporation/ULB in terms of the Concession Agreement executed by MSW WtE Project Developer with concerned Municipal Corporation/ULB shall require prior approval of the Procurer/Commission.

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

**Abellon Clean Energy Limited** has submitted that they had entered into PPA with GUVNL, where they have agreed to provide monthly information and data in a specific format. The current arrangement of sharing of data on a daily basis is considered as cumbersome and inefficient. Therefore, it may be decided to continue for providing data on a monthly basis, as agreed upon, to avoid making significant changes. Also, the uploading of such information on the website could be expensive and burdensome for the Generator.

It is submitted that for demarcation of responsibilities, GOG, vide WTE Policy 2022 has made GEDA, UDD/ Swachh Bharat Mission Department the nodal agencies for the implementation of WTE projects in order to ensure procedural uniformity amongst the concerned UDCs, ULBs, and



Municipal Corporations for undertaking various activities. In view of the statute, the Nodal agency is to suggest, if any, additional information if required.

**GUVNL** has submitted that as per Government Waste to Energy Policy, 2022, for MSW based power projects, the requirements for reporting of data, monitoring and verification shall be in the scope of GEDA and UDD/ULB. GUVNL shall pay the developer only based on the energy supplied.

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

The Commission considers that sharing of data /information on operation and working of the MSW based Power Plant is essential considering the investment made in such project and the anticipated environmental and societal benefits of the project. Furthermore, maintaining the data repository of such projects is also important to know the performance of MSW projects in terms of suitability of MSW technology for waste generated in the Country.

The Commission has noted the difficulties pointed out by the objector for sharing of data on daily basis. The Commission decided that henceforth the MSW project developer should follow the procedure with regard to sharing and updating of data pertaining to MSW power plant, as under.

The MSW Project Developers shall maintain the record on (a) Weekly basis, (b) Monthly basis and (c) Annual basis (Financial Year basis), for following information:

- (i) Opening Balance of MSW fuel, if any
- (ii) Opening Balance of Calorific Value of MSW fuel, if any
- (iii) Quantity of MSW received from the concerned Municipal Corporation/ULB with whom Concession Agreement is signed by the MSW Power Project Developer
- (iv) Calorific Value of MSW fuel received, if determined by approved laboratory
- (v) Quantity of MSW utilised for generation of electricity
- (vi) Calorific Value of MSW fuel utilised



(vii) Gross Electricity Generation

(viii) Auxiliary consumption

(ix) Net Electricity Generation as per SEA of SLDC

(x) Closing Balance of Quantity of MSW fuel

(xi) Quantum of RDF and other product if any available from the process of MSW at power plant site while processing the MSW to RDF.

(xii) Fly ash, if any, available after the production of electricity.

(xiii) Disposal of waste from the plant.

(xiv) Additional information as suggested in Gujarat Solid Waste Policy 2022.

The above information shall be provided with monthly invoices raised by Project Developer (Supplier) to the Nodal Agency (GUVNL)/DISCOM (Procurer). Moreover, MSW Power Project Developer shall also upload the above data/information/details on its website duly updated on weekly basis. The Nodal Agency shall verify above aspects while processing the invoice(s) raised by MSW Power Project Developer.

## **2.25 Clause 4.11: Sharing of Clean Development Mechanism Benefit**

### **2.25.1 Proposed in Discussion Paper**

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.

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.



## 2.25.2 Suggestions/Objections of the Stakeholders

**BA Prerna Renewable** has submitted that a provision to above clause shall be included mentioning that the any lower realization from the CDM or such other mechanism, inter-alia, on account of lower rates realised for CERs / VERs in the market compared to the rates considered by the developer then such loss compared to the rates / benefit considered by the developer should also be shared by GUVNL.

## 2.25.3 Analysis and Commission's Ruling

The Commission clarifies that the benefits which shall be receivable or received, as the case may be, shall be shared with the procurer of power / licensee as proposed in para 4.11 of the discussion paper. The Commission decides to keep the CDM benefit sharing mechanism unchanged as proposed in the discussion paper.

## 2.26 Clause 4.12: Applicability of the Order

### 2.26.1 Proposed in the Discussion Paper

It is proposed that the tariff determined for the MSW based energy projects in this Order will be applicable to all MSW based power project using Mass Incineration / RDF incineration technology commissioned on or after the date of issue of the Order for sale of electricity to the distribution licensees in the State with procurement of new equipment's, machinery etc. and EPC contract and commission the power plant.

The MSW based Power projects commissioned prior to the date of issuance of Order on present discussion paper shall be governed by the terms and conditions given in the earlier Tariff Order No. 04 of 2016 dated 10.11.2016 and subsequent Order dated 23.10.2017 in Suo-Motu Petition No. 1654 of 2017.

The Order to be passed on this discussion paper may not come in way of agreed terms & conditions of the Power Purchase Agreement, if any, executed between the MSW Based Power





Project Developer (Supplier) and distribution licensee and/or nodal agency for procurement of power from such project like GUVNL.

The tariff determined by the Commission under this Order shall be the ceiling tariff, the distribution licensee may procure electricity from the interested MSW based Power project proponent / generator at a tariff lower than the tariff determined by the Commission.

### 2.26.2 Suggestions/Objections of the Stakeholders

**MPSEZ Utilities Limited** has requested the Commission to determine project specific tariff of the individual Project in case commissioning of the project is delayed beyond 31<sup>st</sup> March 2021, which is beyond the 2016 policy control period. The stakeholder proposes to add the following to the original clause:

*"Provided that tariff applicable to the projects which are not commissioned on or before 31.03.2021 the tariff applicable would be as determined by this Hon'ble Commission on the date of commissioning of the project or Rs. 6.31/kWh, whichever is lower."*

**Abellon Clean Energy Limited** has suggested that the Commission should clarify that the PPA entered into between the developer and the beneficiary cannot supersede the provisions of the tariff order and the tariff shall prevail in case of any discrepancies. It is submitted that the Hon'ble Supreme Court of India in the matter of *PTC India Limited v. Central Electricity Regulatory Commission & Ors. [2010 (4) SCC 603]* has held that the provisions of agreement such as a PPA, cannot be allowed to supersede the provisions of any applicable Rules or Regulations statutorily promulgated. The Hon'ble Apex Court opined that the Regulations set forth by the CERC or SERCs as per the relevant provisions of the Electricity Act has the power to create inroads and modify existing contracts.

**Averda India** has suggested that allowing the distribution licensee to procure electricity from the interested MSW based Power project proponent / generator at a tariff lower than the tariff



determined by the Commission will create ambiguity and cause a delay in implementation of the project as there shall be only one authority who has jurisdiction to decide the tariff.

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

The Commission has noted that the control period of previous tariff Order No. 04 of 2016 dated 10.11.2016 for MSW based Power projects was up to 31.03.2019. The Commission subsequently through Order dated 23.10.2017 in Suo Motu Petition No. 1654 of 2017 had extended the control period of the said Order up to 31.03.2021. The Commission has defined the Control period of present tariff Order effective from 06.06.2022 to 31.03.2027. The MSW based Power Projects, which are commissioned with installation of new Plants and Machineries during the Control Period of this Order i.e. during the period from 06.06.2022 to 31.03.2027 shall be governed by the provisions of this Order. The Control Period of previous Order No. 04 of 2016 dated 10.11.2016, shall be deemed to be extended upto 05.06.2022. Accordingly, the MSW projects which are commissioned prior to 06.06.2022 shall be governed by the provisions of Order No. 04 of 2016 dated 10.11.2016 and Order dated 23.10.2017 in Suo-Motu Petition No. 1654 of 2017.

Provided that in case of existing PPA executed for sale of energy by MSW based Power project with the Distribution Licensee of the State under earlier Orders of the Commission (Order No. 04 of 2016 dated 10.11.2016 and Order dated 23.10.2017 in Suo-Motu Petition No. 1654 of 2017), the provisions of tariff in such cases shall continue to be governed as per the provisions of respective PPA.

### **2.27 Reactive Energy drawl and charges**

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

### **2.28 Applicability of Merit Order Dispatch Principle**

The MSW based power projects irrespective of plant capacity shall be treated as 'MUST RUN' power plant and shall not be subjected to Merit Order Dispatch Principle.



## 2.29 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 MSW based Power Projects as per applicable technical standards and best practices.

## 2.30 Computation of generic tariff for MSW based Power Project for New Control Period

The Commission has determined the generic tariff in the present Order after considering the various normative technical and financial parameters and after hearing all the stakeholders and considering their views/suggestions. The tariff is decided by the Commission in the present Order in terms of Section 62 read with 86 (1) (a), (e) of the Electricity Act, 2003 and the provisions specified under National Tariff Policy 2016. The tariff suggested by the objector based on operational data of a particular MSW based power project has of no relevance in this Order which is for generic tariff determination. Therefore, the Commission decides that the tariff and terms and conditions determined in this Order shall be the basis on which the distribution licensees will purchase the electricity from MSW power project during the new control period. In case, the distribution licensee decides to procure electricity from MSW based Power Project at a tariff discovered through tariff based competitive bidding process, in that case, the tariff determined under this Order shall be considered as ceiling tariff.

The tariff determined in this Order shall be applicable to MSW based Power Projects using Mass Incineration / RDF incineration technology commissioned with installation of new Plants and Machineries during the Control Period of this Order for sale of electricity to the distribution licensees in the State and wheeling of energy for captive use / third party sale.

**The benchmark parameters for determination of tariff applicable for MSW based Power Project commissioned during the control period of this Order are tabulated below.**

Parameters	Mass Incineration	RDF based Incineration
	Project Cost and O&M	



Parameters	Mass Incineration	RDF based Incineration
Total Project Cost (including Evacuation Infrastructure Cost up to Interconnection Point) (Rs. Lakh/MW)	1800	1675
Normative O&M Cost for first year (% of project cost)	6%	8.5%
Escalation in O&M (per annum from 2 <sup>nd</sup> year)	3.84%	3.84%
	Performance Parameters	
PLF	65% for 1 <sup>st</sup> year and 75% from 2 <sup>nd</sup> year & Onwards	65% for 1 <sup>st</sup> year and 80% from 2 <sup>nd</sup> year & Onwards
Auxiliary Consumption	15.5%	14%
Project Life in Years	25	25
	Financial Parameters	
Debt-Equity ratio	70:30	70:30
Term of Loan in Years	15	15
Interest on Term Loan	10.15%	10.15%
Interest on Working Capital	10.65%	10.65%
Depreciation	4.67% (up to 15 years) 2% (15 to 25 years)	4.67% (up to 15 years) 2% (15 to 25 years)
Minimum Alternate Tax (for Initial 10 years)	17.47%	17.47%
Corporate Income Tax (from 11 <sup>th</sup> year to 25 year)	34.94%	34.94%
Return on Equity	14%	14%





Parameters	Mass Incineration	RDF based Incineration
Levelized Tariff	Tariff Rs.7.07/kWh for the projects not availing the AD benefit.	Tariff Rs. 7.10/kWh for the projects not availing the AD benefit.
	Tariff Rs. 6.50/kWh for the projects availing AD benefit	Tariff Rs. 6.57/kWh for the projects availing AD benefit

Based on the above, the Commission decides the tariff receivable by the project developers from GUVNL/Distribution Licensees as under:

Tariff (Rs/kWh)	Mass Incineration (Rs. / kWh)	RDF based Incineration (Rs. / kWh)
For the project not availing the benefit of Accelerated Depreciation	7.07	7.10
For the project availing the benefit of Accelerated Depreciation	6.50	6.57

### 2.31 Financial Assistance, Subsidy or Incentive by State or Central Government

The Commission has noted that as per MNRE administrative approval dated 02.11.2022 for implementation of Waste to Energy Program during FY 2021-22 to FY 2025-26, the Incineration /RDF based MSW power projects are not supported by providing Central Financial Assistance. Therefore, the Commission in the present Order has determined tariff without factoring the CFA/subsidy receivable from the MNRE. However, MSW Project developer can avail financial incentive / benefit from other schemes of Central Government under Swatch Bharat Mission/Ministry of Housing and Urban Affairs etc, if any available. Further, the project developer



can also avail financial incentive / benefits from the State Government or UDD / LUB or such other Authorities.

Whenever, such benefit(s) is available to the project developer, the project developer should avail such benefit(s) and the same shall be passed on to the licensee and consumers. In case the project proponent avails the incentive / benefit from other schemes of Central Government under Swachh Bharat Mission/Ministry of Housing and Urban Affairs/ or any other financial assistance under any scheme of Central Government and /or State Government, the concerned Project Developer/ the Urban Development Department, Govt of Gujarat/concerned Municipal Corporation should inform the Commission about such instances. The Commission shall factor the same and redetermine the tariff for sale of electricity considering the actual financial assistance/subsidy/incentive received by concerned project proponent.

### **2.32 Applicability of the Order**

The provisions under this Order shall be applicable to the MSW to energy projects to be installed and commissioned with installation of new Plants & Machineries on or after effective date of this Order. The MSW projects which are commissioned prior to 06.06.2022 shall be governed by the provisions of Order No. 4 of 2016 dated 10.11.2016.

Provided that in case of existing PPA executed for sale of energy by MSW based Power project with the Distribution Licensee of the State under earlier order of the Commission (Order No.4 of 2016 dated 10.11.2016 and Order dated 23.10.2017 in Suo-Motu Petition No. 1654 of 2017), the provisions of tariff in such cases shall continue to be governed as per the provisions of respective PPA.

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

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

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

**Place: Gandhinagar**

**Date: 22/02/2024.**



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

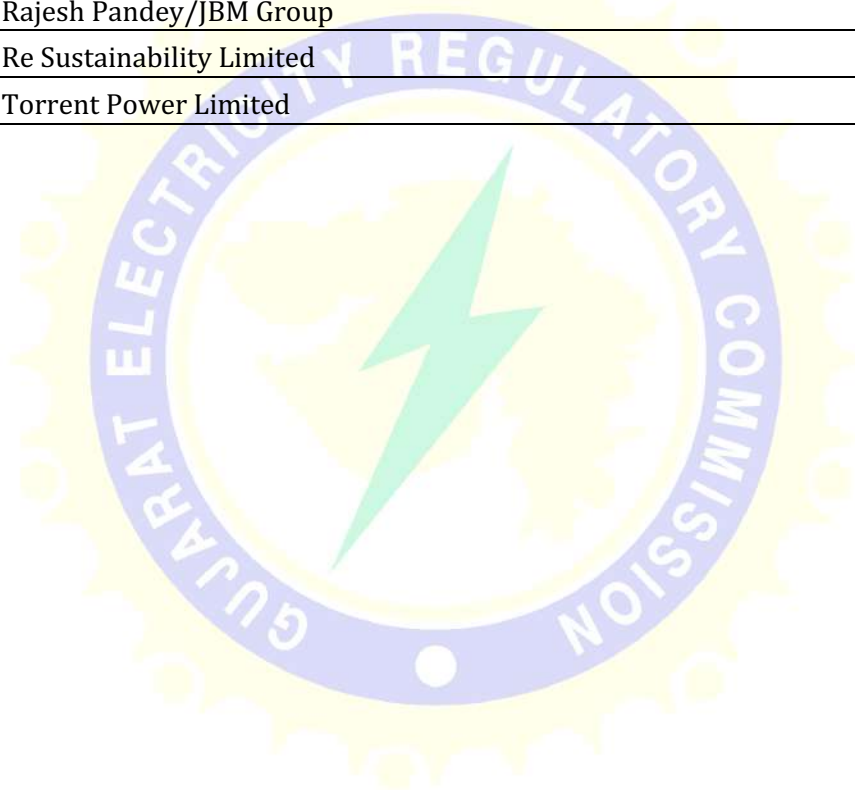
Sr. No.	Name of Stakeholders
1.	Abellon Clean Energy Limited
2.	A.C.E-SLC/ Gujarat Energy Transmission Corporation Limited
3.	Averda Waste Management India Private Limited
4.	MPSEZ Utilities Limited
5.	Nitin A Madam
6.	Rajesh Pandey/JBM Group
7.	Re Sustainability Limited
8.	Torrent Power Limited
9.	Gujarat Urja Vikas Nigam Limited
10.	BA Prerna Renewables



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

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<b>Sr. No.</b>	<b>Name of Stakeholders</b>
1.	Abellon Clean Energy Limited
2.	Gujarat Energy Transmission Corporation Limited
3.	Averda Waste Management India Private Limited
4.	MPSEZ Utilities Limited
5.	Nitin A Madam
6.	Rajesh Pandey/JBM Group
7.	Re Sustainability Limited
8.	Torrent Power Limited







### Annexure III: Tariff for MSW based power project using mass incineration technology

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Net Energy sold (lakh kWhs)	48.11	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52
<b>Costs</b>															
O&M	108.00	112.15	116.45	120.93	125.57	130.39	135.40	140.60	146.00	151.60	157.42	163.47	169.75	176.26	183.03
Depreciation (SLM)	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00	84.00
Interest on term loan	123.63	115.10	106.58	98.05	89.52	81.00	72.47	63.95	55.42	46.89	3.20	2.49	1.78	1.07	0.36
Interest on working capital	6.52	6.62	6.72	6.83	6.95	7.08	7.21	7.36	7.52	7.68	7.66	7.92	8.20	8.48	8.78
Return on Equity	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60
Tax on equity	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	13.21	26.41	26.41	26.41	26.41	26.41
<b>Total Cost (Rs lakh)</b>	<b>410.96</b>	<b>406.67</b>	<b>402.56</b>	<b>398.61</b>	<b>394.85</b>	<b>391.27</b>	<b>387.89</b>	<b>384.71</b>	<b>381.74</b>	<b>378.99</b>	<b>354.30</b>	<b>359.89</b>	<b>365.73</b>	<b>371.82</b>	<b>378.18</b>
<b>Tariff</b>															
<b>Tariff (Rs/kWh)</b>	8.54	7.33	7.25	7.18	7.11	7.05	6.99	6.93	6.88	6.83	6.38	6.48	6.59	6.70	6.81
<b>Levelized Tariff (Rs / kWh)</b>	<b>7.07</b>														



Year	16	17	18	19	20	21	22	23	24	25
Net Energy sold (lakh kWhs)	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52	55.52
<b>Costs</b>										
O&M	190.06	197.36	204.94	212.81	220.98	229.47	238.28	247.43	256.93	266.79
Depreciation (SLM)	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00	36.00
Interest on term loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	8.66	8.99	9.34	9.70	10.08	10.48	10.89	11.32	11.78	12.25
Return on Equity	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60	75.60
Tax on equity	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41	26.41
<b>Total Cost (Rs lakh)</b>	<b>336.74</b>	<b>344.37</b>	<b>352.29</b>	<b>360.52</b>	<b>369.08</b>	<b>377.96</b>	<b>387.18</b>	<b>396.77</b>	<b>406.72</b>	<b>417.06</b>
<b>Tariff</b>										
<b>Tariff (Rs/kWh)</b>	6.07	6.20	6.35	6.49	6.65	6.81	6.97	7.15	7.33	7.51



## Annexure IV: Tariff for MSW based power project using RDF technology

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Net Energy sold (lakh kWhs)	48.97	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27
<b>Costs</b>															
O&M	142.38	147.84	153.52	159.41	165.54	171.89	178.49	185.35	192.46	199.86	207.53	215.50	223.77	232.37	241.29
Depreciation (SLM)	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17	78.17
Interest on term loan	115.04	107.11	99.17	91.24	83.31	75.37	67.44	59.50	51.57	43.64	2.98	2.31	1.65	0.99	0.33
Interest on working capital	6.82	6.94	7.06	7.20	7.34	7.49	7.65	7.82	8.01	8.20	8.23	8.51	8.80	9.11	9.44
Return on Equity	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35
Tax on equity	12.29	12.29	12.29	12.29	12.29	12.29	12.29	12.29	12.29	12.29	24.58	24.58	24.58	24.58	24.58
<b>Total Cost (Rs lakh)</b>	<b>425.04</b>	<b>422.69</b>	<b>420.56</b>	<b>418.66</b>	<b>416.99</b>	<b>415.56</b>	<b>414.39</b>	<b>413.48</b>	<b>412.85</b>	<b>412.50</b>	<b>391.83</b>	<b>399.42</b>	<b>407.33</b>	<b>415.57</b>	<b>424.16</b>
<b>Tariff</b>															
<b>Tariff (Rs/kWh)</b>	8.68	7.01	6.98	6.95	6.92	6.90	6.88	6.86	6.85	6.84	6.50	6.63	6.76	6.90	7.04
<b>Levelized Tariff (Rs / kWh)</b>	<b>7.10</b>														



Year	16	17	18	19	20	21	22	23	24	25
Net Energy sold (lakh kWhs)	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27	60.27
<b>Costs</b>										
O&M	250.56	260.18	270.17	280.54	291.31	302.50	314.12	326.18	338.70	351.71
Depreciation (SLM)	33.50	33.50	33.50	33.50	33.50	33.50	33.50	33.50	33.50	33.50
Interest on term loan	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	9.38	9.74	10.11	10.51	10.92	11.34	11.79	12.26	12.74	13.25
Return on Equity	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35	70.35
Tax on equity	24.58	24.58	24.58	24.58	24.58	24.58	24.58	24.58	24.58	24.58
<b>Total Cost (Rs lakh)</b>	<b>388.36</b>	<b>398.35</b>	<b>408.71</b>	<b>419.48</b>	<b>430.66</b>	<b>442.27</b>	<b>454.34</b>	<b>466.87</b>	<b>479.88</b>	<b>493.39</b>
<b>Tariff</b>										
Tariff (Rs/kWh)	6.44	6.61	6.78	6.96	7.15	7.34	7.54	7.75	7.96	8.19