DETERMINATION OF TARIFF FOR PROCURMENT OF POWER BY DISTRIBUTION LICENSEES AND OTHERS FROM BIOMASS BASED POWER PROJECTS AND BAGASSE BASED CO-GENERATION PROJECTS FOR THE STATE OF GUJARAT

March 2025

Gujarat Electricity Regulatory Commission

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Abbreviations

%	Percentage
ABT	Availability-Based Tariff
AC	Alternating Current
CDM	Clean Development Mechanism
CEA	Central Electricity Authority
CER	Certified Emission Reduction
CERC	Central Electricity Regulatory Commission
COD	Commercial Operation Date
CUF	Capacity Utilization Factor
DISCOMs	Distribution Companies
DC	Direct Current
FY	Financial Year
GEDA	Gujarat Energy Development Agency
GERC	Gujarat Electricity Regulatory Commission
GETCO	Gujarat Energy Transmission Corporation Ltd.
GoG	Government of Gujarat
GoI	Government of India
GUVNL	Gujarat Urja Vikas Nigam Limited
KV	Kilo Volt
kW	Kilo Watt
kWh	Kilo Watt hours
kVARh	Kilo Volt Ampere Reactive Hour
MNRE	Ministry of New and Renewable Energy
MW	Mega Watt
MWh	Mega Watt hour
NEP	National Electricity Policy
NTP	National Tariff Policy
O&M	Operation and Maintenance
PPA	Power Purchase Agreement
R&D	Research & Development
RE	Renewable Energy
REC	Renewable Energy Certificate
RPO	Renewable Purchase Obligation
SERC	State Electricity Regulatory Commission
T&D	Transmission & Distribution

Order No. 02 of 2025

In the Matter of:

Determination of tariff for Procurement of Power by Distribution licensees and others from Biomass based Power projects and Bagasse based Cogeneration Projects for State of Gujarat.

Date of Public Hearing : 25/10/2024

Date of the Order. :21/03/2025

CORAM

Anil Mukim, Chairman

Mehul M. Gandhi, Member

S. R. Pandey, Member

Chapter 1: INTRODUCTION

1.1. Background

The Gujarat Electricity Regulatory Commission (GERC or Commission) vide Order No.03 of 2022 dated 27.06.2022 had issued Order on Determination of tariff for procurement of power by Distribution Licensees and others from Biomass and Bagasse based Cogeneration projects and others Commercial issues for the State of Gujarat. The Control period of the Order No. 03 of 2022 was effective from 01.04.2020 to 31.03.2023. The said Orders provides that it shall be applicable to the project commissioned during the Control Period specified in the Order i.e. up to 31.03.2023.

The Ministry of Power notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 6th June 2022 (MoP Rules) outlining the policy and regulatory provisions for promotion of renewable sources of energy through Open Access. Further, the MoP Rules are effective from the date of its Notification. The previous Order No. 03 of 2022 dated 27.06.2022 was having control period up to 31.03.2023 and thereafter no extension in control period of said order is granted. Therefore, in order to give effect to the provision of Green Energy Open Access Rules 2022 notified by Ministry of Power under the Electricity Act, 2003, the Commission decides to define the control period of this tariff order to be made effective from 01.04.2023 i.e. after expiry of Control Period of previous Order No.03 of 2022.

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

The Commission while passing this paper considered the Policy & Regulatory provisions outlined in the Electricity Act, 2003 and Policies and Rules and Regulations framed under the Act, Gujarat Renewable Energy Policy 2023.

1.2. The Electricity Act, 2003

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

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

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

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

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

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

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

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

1.2.4. Section 3 (1) of the Act requires the Central Government to formulate, inter alia, the National Electricity Policy in consultation with the Central Electricity Authority (CEA) and

State Governments for inter-alia, development of the renewable sources of energy. The provision is quoted below:

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

1.3. National Electricity Policy (NEP)

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

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

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

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

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

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

5.12.2 *: The Electricity Act, 2003, provides that co-generation and generation of electricity from non- conventional sources would be promoted by the SERCs by providing suitable*

measures for connectivity with the grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from non-conventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively, the share of electricity from non-conventional sources would need to be increased

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

1.4. Tariff Policy 2016

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

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

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

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

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

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

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

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

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

2) States shall endeavor to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified

capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government.

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

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

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

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

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

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

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

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

1.5. Gujarat Renewable Energy Policy 2023

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

- This Policy came into force with effect from the date of notification and shall be remained in operation till 30th September 2028.
- The Policy states that the RE projects can be set up under this policy for captive use and/or for selling electricity to any other third party whether registered under the REC mechanism or not, or selling electricity to distribution licensees, subject to the provisions of this Policy and in accordance with the provisions of the Electricity Act 2003, as amended from time to time.
- There shall be no capacity restriction for setting up of RE projects for captive use or for selling electricity to third party consumer with respect to the consumer's contracted demand! sanctioned load (kW/kVA/MVA) with DlSCOMs. The AC capacity of the RE project shall be considered as the project installed capacity.
- Energy accounting and banking for all renewable energy projects, including rooftop projects, shall be as per the regulations framed by GERC from time to time in accordance with the Green Energy Open Access Rules 2022 notified by the Ministry of Power, Govt of

India. In case of the consumers availing energy banking facility, the settlement of renewable energy against consumer's consumption shall be carried out on billing cycle basis upon payment of applicable banking charges as determined by GERC from time to time. No banking charges shall be applicable on solar power consumed by Residential consumers.

- In case the consumer is not availing energy banking facility and consumption is from RE projects registered under REC mechanism, the energy settlement shall be carried out on 15-minute time block basis and no banking charges will be applicable.
- For utilization of State transmission/distribution network for wheeling of power from RE projects located within the state or from outside the state to consumer end, transmission and wheeling charges and losses as determined by GERC shall be levied as applicable to normal open access consumer depending on the location of the RE plant and the point of consumption.
- GUVNL shall be implementing, facilitating and monitoring agency for this policy while GEDA shall act as the State Nodal Agency (SNA) for implementation of Policy.

1.6. GERC (Terms and Conditions for Green Energy Open Access) Regulations, 2024

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

1.7. Renewable Purchase Obligation in Gujarat

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

Table 1 : Renewable Purchase Obligation in Gujarat for FY 2017-18 to 2024-25

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

(Source: Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) (Third Second Amendment) Regulations, 2022.)

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

This renewable purchase obligation applies to:

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

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

Further, this Regulation recognizes the certificates issued within the scope of Central Electricity Regulatory Commission's (CERC) Renewable Energy Certificate (REC) as the valid instruments for the discharge of the mandatory obligations set out in these Regulations for the obligated entities to purchase electricity from renewable energy sources termed as Renewable Energy Certificates (REC).

1.8. Discussion Paper on determination of tariff for procurement of power by distribution licensees and Others from Biomass and bagasse-based Power projects

The Commission has considered the provisions of previous Tariff Order No. 03 of 2022 dated 27.06.2022 and provisions of National Tariff Policy, 2016 and MoP's Electricity (Promoting Renewable Energy through Green Energy Open Access) Rules 2022 & its subsequent amendments, while framing the discussion paper on determination of tariff for procurement of power by distribution licensees and Others from Biomass and bagasse based Power projects in the State of Gujarat and other commercial issues. Accordingly, the Discussion Paper was published by the Commission and Public Notices in this regard were issued on 30.09.2024 in English and Gujarati Daily Newspapers and also uploaded on the Commission's website www.gercin.org in downloadable format, for inviting comments/objections/suggestions from stakeholders by 18.10.2024.

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

1.9. Public Hearing

The Commission examined the objections/suggestions received from the stakeholders on the discussion paper.

The Commission fixed the date for public hearing on the discussion paper on 25.10.2024 at the Commission's Office, Gandhinagar.

A list of stakeholders participated in the public hearing and presented their objections/suggestions is provided 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.

Chapter 2: TARIFF FOR BIOMASS AND BAGASSE BASED COGENERATION AND OTHER COMMERCIAL ISSUES

2.1 Tariff Framework

2.1.1 Proposed in Discussion Paper

The Commission in Order No. 1 of 2018 and Order No. 3 of 2022 mandated the distribution licensees for procurement of power from Biomass and Bagasse based Cogeneration projects at the tariff determined by the Commission in the said Orders under Section 62 of the Act.

The Commission notes that the Tariff Policy 2016 notified by the Central Government on 28.01.2016 in pursuance of the Section 3 of the Act stipulates that the Appropriate Commission may determine preferential tariff for procurement of power by distribution licensees from non-conventional sources of energy till issue of notification of procure power from renewable energy sources through competitive bidding by Central Government. 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.

(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."

2.1.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.1.3 Analysis and Commission's Ruling

As proposed in the discussion paper the Comission decides to continue with the cost-plus tariff methodology as adopted by the Commission in the previous Tariff Orders for procurement of power from biomass and bagasse-based co-generation projects by the distribution licensees in the state during the control period of this tariff order. Accordingly, the Commission directs that the distribution licensees may procure electricity from the prospective Biomass and Bagasse based Cogeneration Projects as per the tariff determined by the Commission under Section 62 of the Act. Further the Commission while calculating the tariff shall take into account any incentive or subsidy offered by the Central and State Government, including the AD benefit if availed by the generating company, for the Biomass and Bagasse based Cogeneration plant.

2.2 Clause 2.2 (a): Control Period

2.2.1 Proposed in Discussion Paper

The Commission in the discussion paper proposed that the control period of the tariff order shall be effective from 01.04.2023 up to 31.03.2027.

2.2.2 Suggestions/Objections of the Stakeholders

The Commission notes has not received any comments/suggestions from the stakeholders in this regard.

2.2.3 Analysis and Commission's Ruling

The Commission noted that the Ministry of Power notified the Electricity (Promoting Renewable Energy Through Green Energy Open Access) Rules, 2022 on 6th June 2022 (MoP Rules) outlining the policy and regulatory provisions for promotion of renewable sources of energy through Open Access. Further, the MoP Rules are effective from the date of its Notification. The previous Order No. 03 of 2022 dated 27.06.2022 was having control period up to 31.03.2023 and thereafter no extension in control period of said order is granted. Therefore, in order to give effect to the provision of Green Energy Open Access Rules 2022 notified by Ministry of Power under the Electricity Act, 2003 and specifically when there was no tariff order of the Commission after 31.03.2023 with respect to Biomass and Bagasse based Co-generation Power Projects, the Commission feal it more appropriate to adopt the regulatory provisions outlined in MoP Green Energy Open Access Rules, 2022 and proposed in the discussion paper to define the Control Period of new tariff order effective from

01.04.2023 i.e. after expiry of Control Period of previous Order No. 03 of 2022.

Accordingly, the Commission with an intention to provide clarity on the tariff framework, decides to define the Control Period of the Order effective from 01.04.2023 to 31.03.2027, for procurement of power generated from Biomass and Bagasse based Cogeneration Projects in the State of Gujarat by Distribution Licensees, under the powers conferred to it under Sections 61(h), 62(1) (a), and 86(1) (b) & (e) of the Electricity Act, 2003, and National Electricity Policy, 2005, and Tariff Policy, 2016.

2.3 Clause 2.2 (b & c): Plant and machinery & Useful life of plant

2.3.1 Proposed in Discussion Paper

The Commission in the discussion paper proposed that the Biomass and Bagasse based power projects using new plant and machinery will be eligible to sell power to distribution licensees of Gujarat at the tariff proposed by the Commission in this Order. The Useful Life for the Biomass and Bagasse based Cogeneration Projects to be commissioned under PPAs signed during the new Control was proposed as 25 years from their date of commissioning.

2.3.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

2.3.3 Analysis and Commission's Ruling

The Commission decides that the Biomass and Bagasse based power projects using new plant and machinery will be eligible to sell power to distribution licensees of Gujarat at the tariff determined by the Commission in this Order. The normative useful life of for the Biomass and Bagasse based Cogeneration Projects under the PPA signed during new control period, shall be 25 years from their date of commissioning.

2.4 Clause 2.2 (d): Tariff Structure and Design

2.4.1 Proposed in Discussion Paper

The Commission in the discussion paper proposed to determine a single-part tariff with two components for procurement of electricity from biomass-based power projects and bagasse-based cogeneration projects by the distribution licensee to be commissioned under PPAs signed during the control period of the Order.

Fixed component of tariff shall be levelized over the useful life of the plant and the depreciation benefit shall be internalised for those availing the accelerated depreciation benefit. Variable cost component of tariff shall be specified for each year of the control period by considering annual escalation of fuel cost as proposed in the discussion paper. The biomass power and bagasse-based co-generation project to be commissioned under the PPA signed during the control period of new tariff order shall be eligible to get the fixed component of tariff over the useful life of 25 years of the plant and yearly variable component of tariff as specified in the tariff order. The Biomass and Bagasse Cogeneration Projects Commissioned during the control period of previous tariff Orders of the Commission shall be eligible for yearly variable cost component of tariff determined by the Commission in this new tariff order while they shall continue to get levelized fixed cost component as per the previous tariff orders of the Commission as applicable. At the end of the control period, the Commission shall re-assess the fuel price market and re-determine the variable cost component of tariff for Biomass and Bagasse based Cogeneration projects, which will be specified in the subsequent tariff orders to be issued by the Commission.

2.4.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.4.3 Analysis and Commission's Ruling

The Commission decides to retain the tariff structure and tariff design as elaborated in the discussion paper.

2.5 Clause 2.2 (e): Eligibility criteria

2.5.1 Proposed in Discussion Paper

In the discussion paper, it is proposed that The biomass power project based on Rankine Cycle Technology and Bagasse based Cogeneration projects using non fossil fuel and boilers, turbine, generators and associated auxiliaries, to be commissioned under the PPA signed during the new control period as proposed in this discussion paper shall be eligible to sell power to distribution licensees of Gujarat at tariff determined by the Commission under the Tariff Order. The bagasse-based co-generation projects to be commissioned under the PPA signed during the control period of new tariff order needs to fulfil the following minimum

qualification requirements of bagasse/non-fossil-fuel based co-generation project as specified by Ministry of Power, Govt. of India…..

2.5.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

2.5.3 Analysis and Commission's Ruling

The Commission decides to retain the eligibility criteria of fulfilling the minimum qualification requirements as specified by Ministry of Power for Biomass and Bagasse based cogeneration projects as elaborated above, during the control period of this tariff order.

2.6 Clause 2.2 (f): Scheduling of Power and applicability of Intra-State ABT

2.6.1 Proposed in Discussion Paper

The Commission noted that the generation from biomass-based power projects and bagasse-based co-generation projects is predictable and hence, can be scheduled in accordance with the Intra-State ABT guidelines. Therefore, the Biomass and Bagasse based Cogeneration projects are required to follow Scheduling and Despatch procedures as per the Intra –State ABT Order/Regulations notified by the Commission during the control period of new tariff order. However, biomass power projects up to 4 MW capacity would be exempted from the provision of scheduling due to its small size and difficulties of monitoring by the SLDC. The Commission proposes to continue with the same provisions of scheduling.

2.6.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.6.3 Analysis and Commission's Ruling

The Commission decides that the Biomass and Bagasse based Cogeneration projects are required to follow Scheduling and Despatch procedures as per the Intra –State ABT order / Regulations notified by the Commission and as amended from time to time, during the control period of new tariff order. However, biomass power projects up to 4 MW capacity would be exempted from the provision of scheduling due to its small size and difficulties of monitoring by the SLDC.

2.7 Clause 2.2 (g): Applicability of Merit Order Dispatch Principle

2.7.1 Proposed in Discussion Paper

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

2.7.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

2.7.3 Analysis and Commission's Ruling

The Commission decides that the Biomass and Bagasse based Cogeneration plants irrespective of plant capacity shall be considered as 'MUST RUN' power plants and shall not be subjected to 'Merit Order Dispatch' principles.

2.8 Clause 2.2 (h) (Metering Point & Interconnection Point

2.8.1 Proposed in Discussion Paper

The Commission in the discussion paper defined that the interconnection point shall be at the line isolator on outgoing feeder on HV side of generator transformer and the metering point shall be at the interconnection point of the generator bus-bar with the transmission or distribution system concerned, as the case may be.

2.8.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.8.3 Analysis and Commission's Ruling

The interconnection points in case of Biomass and Bagasse based Cogeneration plant shall be at the line isolator on outgoing feeder on HV side of generator transformer and the metering point in case of Biomass and Bagasse based Cogeneration plant shall be at the interconnection point of the generator bus-bar with the transmission or distribution system concerned, as the case may be.

2.9 Clause 2.2 (i) Treatment for Subsidy or incentive by the Central/State Government

2.9.1 Proposed in Discussion Paper

In the discussion paper, it was provided that the Commission while calculating the tariff shall take into account any incentive or subsidy offered by the Central and State Government, including the AD benefit if availed by the generating company, for the Biomass and Bagasse based Cogeneration plant.

2.9.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.9.3 Analysis and Commission's Ruling

The Commission decides to retain the provisions with regard to giving the treatment for Subsidy or incentive by the Central/State Government, if any availed by the project developers for computation of tariff, as proposed in the discussion paper.

2.10 Clause 2.3: Benchmarking of Capital Cost for Biomass Power and Bagasse based Cogeneration Projects

2.10.1 Proposed in Discussion Paper

a. Benchmark capital cost for Biomass based Power Project

In the discussion paper, it is stated as under:

The main cost components of biomass/ bagasse based power project are (i) Boiler, (ii) Turbine and generators, (iii) condenser, (iv) control cabinets, (v) chimney for flue gases, (vi) transformer and associated equipment, (vii) land and its development, (viii) processing fee of Gujarat Energy Development Agency (GEDA), (ix) erection and commissioning charges, (x) creation of evacuation system up to the interconnection point

In order to arrive at the benchmark capital cost for biomass power projects in the new control period, the Commission has studied the benchmark cost considered by CERC as well as other SERCs in their tariff orders / Regulations. The Commission noted that the CERC RE Tariff Regulations 2024 specifies the capital cost of Rs. 6.33 Crores/MW for biomass power project using water-cooled condenser and Rs. 6.85 Cr/MW for biomass power projects using Air-Cooled condenser which also includes cost towards creation of evacuation system up to the

interconnection point. The Capital cost specified by other SERCs in their recent tariff orders / Regulations varied in the range of Rs. 4.92 Crores/MW to Rs. 5.92 Crores/MW for biomass power project using water-cooled condenser and Rs. 6.03 to Rs. 6.85 Crores/MW for biomass power projects using Air-Cooled condenser.

The Commission has also analysed the changes in WPI of steel and E&M over the period FY 2017-18 to FY 2023-24 as per data published by the Office of Economic Advisor, Ministry of Commerce and Industry to notice the change in the cost of steel and E&M equipment which constitute a major part of capital cost.

After considering all the above aspects, the Commission proposes to fix benchmark capital cost of Rs 5.75 Crores/MW for biomass power projects using water cooled condenser and Rs. 6.11 Crores/MW for biomass power projects using air cooled condenser considering their design requirements and additional features during the control period of new Tariff order.

b. Benchmark capital cost for Bagasse based Cogeneration Project

The Commission in Tariff Order No. 1 of 2018 had specified the capital cost of Rs. 4.66 Crores/MW for Bagasse based Cogeneration which also includes cost towards creation of evacuation system up to the interconnection point. It was decided that GETCO/DISCOM shall be responsible for laying the power evacuation line beyond the interconnection point to the nearest GETCO/DISCOM sub-station.

The Commission noted that the CERC RE Tariff Regulations, 2024 specifies the capital cost of Rs. 5.62 Crores/MW for Bagasse based Cogeneration project. The Capital cost specified by other SERCs in their recent tariff orders/Regulations varied in the range of Rs. 4.67 Crores/MW to Rs. 4.92 Crores/MW for Bagasse based Cogeneration project. After analysing the changes in WPI of steel and E&M over period of FY 2017-18 to FY 2023-24, the Commission proposed to fix the benchmark capital cost of Rs 5.22 Crores/MW for Bagasse based Cogeneration projects to be Commissioned during control period of new tariff order.

2.10.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.10.3 Analysis and Commission's Ruling

As proposed in the discussion paper, the Commission decides to fix normative capital cost of Rs. 5.75 Crores/MW for biomass power projects using water cooled condenser and Rs. 6.11 Crores/MW for biomass power projects using air cooled condenser during the control period of this Tariff order. Similarly, the Commission decides to fix normative capital cost for Bagasse based Co-generation Power Project at Rs. 5.22 Crores/ MW as proposed in the Discussion paper.

2.11 Clause 2.3.3: Power evacuation System cost

2.11.1 Proposed in Discussion Paper

In previous Tariff Order No. 01 of 2018 and Order No. 03 of 2022, the Commission had considered the cost associated with erection of the transformer, associated equipment and creation of power evacuation infrastructure up to the interconnection point as part of the capital cost of Biomass and Bagasse based co-generation Power Project. GETCO/DISCOM was made responsible for laying the evacuation infrastructure beyond interconnection point.

2.11.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

2.11.3 Analysis and Commission's Ruling

The Commission decides to consider the cost associated with erection of the transformer, associated equipment and creation of power evacuation infrastructure up to the interconnection point as part of the capital cost as proposed in the discussion paper. GETCO/DISCOM shall create the necessary evacuation infrastructure beyond interconnection point.

2.12 Clause 2.3.4: Operations and maintenance cost

2.12.1 Proposed in Discussion Paper

The Commission in the discussion paper proposes to consider O&M charges as 5% of the capital cost in the first year of project commissioning with an escalation of 5.72% per annum in subsequent years for Biomass based power projects. Whereas, in case of bagasse-based co-generation projects, the Commission proposes to consider O&M charges as 3% of the capital cost in the first year of project commissioning with an escalation of 5.72% per annum thereafter.

2.12.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.12.3 Analysis and Commission's Ruling

The Commission decides to fix the O&M charges as 5% & 3% of the capital cost in the first year of project commissioning with an escalation of 5.72% per annum in subsequent years respectively for Biomass based power projects and Bagasse based cogeneration projects for tariff determination purpose during the control period of this order.

2.13 Clause 2.3.5: Plant Load Factor (PLF)

2.13.1 Proposed in Discussion Paper

In the discussion paper, the Commission considered PLF of 70% during 1st year of commissioning covering the stabilization period and 80% from 2nd year onwards for Biomass based power projects. Whereas for Bagasse based Cogeneration Projects, based on number of days of operation of plant in the State of Gujarat (180 days in season and 60 days in off season), a normative PLF of 60% was considered for tariff determination.

2.13.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.13.3 Analysis and Commission's Ruling

In case of Biomass based projects, the Commission decides to fix the normative PLF of 70% during 1st year of commissioning covering the stabilization period and 80% from 2nd year

onwards. Whereas for Bagasse based Cogeneration Projects, based on number of days of operation of plant in the State of Gujarat (180 days in season and 60 days in off season), the Commission decided to fix a normative PLF of 60% for tariff determination purpose.

2.14 Clause 2.3.6: Auxiliary Consumption

2.14.1 Proposed in Discussion Paper

The Commission in the discussion paper proposes to fix the auxiliary consumption as 10% of gross generation for Biomass based projects and for bagasse-based co-generation projects, the auxiliary consumption was proposed to 8.5% of gross generation as per recommendation of CEA.

2.14.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.14.3 Analysis and Commission's Ruling

The Commission decides to fix the normative auxiliary consumption as 10% and 8.5% of gross generation respectively for Biomass and Bagasse cogeneration project for tariff determination purpose during control period of this Order.

2.15 Clause 2.3.7: Station Heat Rate (SHR)

2.15.1 Proposed in Discussion Paper

The Commission in the discussion paper proposes SHR of 3800 kCal/kWh for biomass-based power projects using water-cooled condenser. In case of the biomass-based power projects using air-cooled condensers, SHR of 3950 kCal/kWh was proposed by recognizing the fact that the condenser pressure in such projects is required to be kept at high level which results in higher SHR than the water-cooled condenser. In case of bagasse-based cogeneration projects, Station Heat Rate of 3600 kCal/kWh was proposed by the Commission.

2.15.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.15.3 Analysis and Commission's Ruling

The Commission decides to fix the normative SHR of 3800 kCal/kWh and 3950 kCal/kWh for biomass-based power projects using water-cooled condenser and biomass-based power projects using air -cooled condenser respectively. In case of bagasse-based cogeneration projects, the Commission decides to fix normative SHR of 3600 kCal/kWh for tariff determination purpose during control period of this Order.

2.16 Clause 2.3.8 & 2.3.9: Gross calorific value (GCV) and Cost of Fuel

The Commission based on the state specific study conducted by TERI and after previous publication / after hearing the stakeholders vide Order dated 09.02.2018 adopted the findings of the TERI Report and declared weighted average GCV of Biomass as 4423 Kcal/kg and weighted average cost of biomass as Rs. 3764/MT. In case of Bagasse based Cogeneration projects based on TERI Report, the Commission decided to consider the GCV of 2250 Kcal/kg and cost of Bagasse equal to Rs. 2075/MT.

To take care of fuel cost inflation during the intervening period, the Commission had derived the Weighted Average growth rate considering Wholesale Price Index' of High Speed Diesel' and cocking coal and Consumer Price Index of Agricultural labour during FY 2017-18 to FY 2023-24 with the help of data published by Office of Economic Adviser, Department for Promotion of Industry and Internal Trade, GoI and Consumer Price Index of Agricultural labour by Ministry of Labour Employment. After considering an additional allowance for Trading margin and other competitive use of biomass/bagasse, the Commission arrive at representative Biomass and Bagasse cost of Rs. 5044/MT and Rs. 2780/MT for tariff determination purpose during first year of control period of new tariff order. The Commission decided to escalate the Biomass and Bagasse fuel cost at the rate of 5% per annum during subsequent three years of the control period.

Based on above analysis, in the discussion paper the Commission proposes to consider the weighted average GCV of Biomass as 4423 Kcal/kg and weighted average cost of biomass as Rs. 5044 /MT. In case of Bagasse based Cogeneration projects the Commission decided to consider the GCV of 2250 Kcal/kg and cost of Bagasse equal to Rs. 2780/MT for tariff determination purpose during the control period of this Order.

2.16.1 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.16.2 Analysis and Commission's Ruling

The Commission decides to fix average GCV of Biomass as 4423 Kcal/kg and weighted average cost of biomass as Rs. 5044/MT. For Bagasse based cogeneration power projects, the Commission decides to fix GCV of Bagasse fuel as 2250 Kcal/kg and cost of Bagasse as Rs. 2780 / MT for tariff determination purpose during control period of this order. Further, the Commission decides to escalate the biomass and bagasse fuel cost at the rate of 5% per annum during subsequent years of the control period.

2.17 Use of Fossil Fuel

2.17.1 Proposed in Discussion Paper

The discussion paper provides that use of Fossil fuel shall not be allowed. The Commission had discontinued the use of Fossil Fuel as a supplementary fuel in Biomass power and Bagasse based Cogeneration project since Order No. 03 of 2022. The Commission proposes to continue with the same provision during the Control period of new tariff order.

2.17.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.17.3 Analysis and Commission's Ruling

Use of Fossil fuel in Biomass and Bagasse based cogeneration plants shall not be allowed.

2.18 Clause 2.4.1: Debt Equity Ratio

2.18.1 Proposed in Discussion Paper

The Commission proposes debt-equity ratio as 70:30 for the new control period as per provisions in Tariff policy and GERC MYT Regulations 2024.

2.18.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.18.3 Analysis and Commission's Ruling

The Commission decides to retain debt equity ratio as 70:30.

2.19 Interest on term loan and Loan tenure

2.19.1 Proposed in Discussion Paper

In the discussion paper the Commission proposed to consider the interest rate on term loan as SBI MCLR rate (8.15%) plus 200 basis points which works out to 10.15 % for computation of interest on term loan and loan repayment period as 15 years for tariff determination purpose.

2.19.2 Suggestions/Objections of the Stakeholders

GUVNL submitted that normative weighted average rate of interest shall be restricted to one-year SBI MCLR (or any replacement thereof declared by SBI from time to time being in effect applicable for 1-year period) plus 150 basis points during the year in case actual weighted average interest rate exceed one –year SBI MCLR as per provisions in GERC MYT Regulations 2024.

2.19.3 Analysis and Commission's Ruling

The Commission agree to the suggestion of GUVNL and decides to fix normative interest rate 150 basis points above one – year MCLR announced by SBI as provided in GERC MYT Regulations 2024 for tariff determination purpose for tariff determination purpose.

2.20 Depreciation

2.20.1 Proposed in Discussion Paper

GERC Multi Year Tariff (MYT) Regulations, 2024 provides that depreciation rate should be calculated based on Straight Line Method. The MYT Regulations further provide that asset is to be depreciated up to 90% of its initial value (considering residual value as 10% of its initial value) over the entire asset life. To facilitate the principal loan repayment, the Commission decides to consider the depreciation rate as 4.67% per annum during the loan repayment period i.e. first 15 years; and beyond the loan tenure, the depreciation is allowed as per 'Straight Line Method' over the remaining useful life of the plant i.e. depreciation at rate of 2% per annum from 16th to 25th year. In view of this it is proposed to consider depreciation at the rate of 4.67% per annum for the first 15 years, and 2% from 16th year to 25th year for tariff determination purpose during the control period.

2.20.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.20.3 Analysis and Commission's Ruling

The Commission decides to retain the provisions as proposed in the Discussion paper.

2.21 Clause 2.4.4 & 2.4.5 Working Capital & Interest on working capital

2.21.1 Proposed in Discussion Paper

In the discussion paper the Commission for Biomass and Bagasse Cogeneration projects (with fuel cost component) had considered the components of working capital as follows:

- O&M expenses for one month
- Receivables of one month charges for sale of electricity.
- Maintenance spares at 1% of the capital cost escalated at 5% per annum.
- Fuel Cost for one month.

Thus, it was proposed to consider the interest on working capital equal to the SBI MCLR plus 250 basis points, which works out as 10.65 %.

2.21.2 Suggestions/Objections of the Stakeholders

GUVNL submitted that the interest on working capital shall be allowed at a rate equal to the one-year State Bank of India (SBI) Marginal Cost of Funds Based Lending Rate (MCLR) or any replacement thereof declared by SBI from time to time being in effect applicable for 1-year period, as applicable as on 1st April of the financial year in which the petition is filed plus 200 basis points.

2.21.3 Analysis and Commission's Ruling

The Commission agree to suggestion received from GUVNL and decides to fix interest on working capital at a rate equal to the one-year State Bank of India (SBI) Marginal Cost of Funds Based Lending Rate (MCLR) plus 200 basis points, which works out to be 10.15% as provided in GERC MYT Regulations 2024 for tariff determination purpose. Further, the Commission

decides to retain the provisions for working capital requirement as proposed in the discussion paper.

2.22 Clause 2.4.6: Return on Equity

2.22.1 Proposed in Discussion Paper

In line with GERC Multi Year Tariff Regulations, 2014, the Commission follows the principle of allowing 15.5% RoE for generating plants plus the applicable tax payment for conventional and renewable power projects. It is proposed to consider the RoE of 15.5% and the tax payment of MAT @ 17.47 % per annum for first 10 years and corporate tax @ 34.94% (IT Rate 30% + 12% Surcharge + 4% Cess) per annum for the next 15 years as a cost for the purpose of computing the tariff during control period of new tariff order.

2.22.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

2.22.3 Analysis and Commission's Ruling

The Commission decides to retain the Return on Equity and tax payment as proposed in the discussion paper.

2.23 Clause 2.4.7 & 2.4.8: Discount Rate and Additional benefit due to Accelerated Depreciation

2.23.1 Proposed in Discussion Paper

In the discussion paper, the Commission defines the Discount rate as the weighted average cost of capital (WACC) and calculated the same as 9.77% for levelized tariff computation.

As regard to Accelerated depreciation, following principles have been considered for ascertaining the Income Tax benefit on account of accelerated or additional depreciation for the purpose of tariff determination:

i. The assessment of benefit shall be based on normative Capital Cost, accelerated/ additional depreciation rate as per the relevant provisions of the Income Tax Act and the Corporate Income Tax rate.

ii. Capitalisation of Biomass and Bagasse based power projects for the full financial year.

iii. Per-unit benefit shall be derived on levelized basis at a discounting factor equivalent to the post-tax weighted average cost of capital.

Presently, RE project developers can avail accelerated depreciation at the rate of 40% in the first year on a written-down value (WDV) basis. In addition to this 40% depreciation, the amendment in the Finance Act has allowed an additional depreciation of 20% to the power projects during first year of project commissioning. With this, Biomass power and Bagasse the Commission consider RE project owners can avail accelerated depreciation at the rate of 40% in the first year on a written-down value (WDV) basis. In addition to this 40% depreciation, the amendment in the Finance Act has allowed an additional depreciation of 20% to the power projects during first year of project commissioning

2.23.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

2.23.3 Analysis and Commission's Ruling

The Commission decides to retain the aforesaid provisions/methodology for computation of Discount Rate and Additional tax benefit due to Accelerated Depreciation in the determination of tariff, as proposed in the discussion paper.

2.24 Computation of Tariff for Biomass Power

Based on the Commission's analysis the operational and financial parameters considered by the Commission for determination of tariff for biomass-based power projects are provided in the table below:

Parameters	Biomass Power Projects with Water Cooled Condenser	Biomass Power Projects with Air Cooled Condenser
Project Cost and O&M		
Total Project Cost (Land + Plant & Machinery + Erection Cost + Evacuation Infrastructure Cost up to Interconnection Point) (Rs. Lakh/MW)	575	611

Normative O&M Cost for first year	5% of Capital Cost	5% of Capital Cost
Escalation in O&M (per annum from 2nd year)	5.72%	5.72%
Performance Parameter		
PLF (%)	70% during 1st year and 80% from 2nd year onward	70% during 1st year and 80% from 2nd year onward
Auxiliary Consumption (%)	10%	10%
Project Life	25 Years	25 Years
Station Heat Rate (kCal/kWh)	3800	3950
Gross Calorific Value of Biomass (kCal/kg)	4423	4423
Cost of Fuel (Rs. /MT)	5044	5044
Fuel Cost escalation (%)	5% per annum	5% per annum
Financial Parameter		
Debt-Equity ratio	70:30	70:30
Loan Tenure	15 years	15 years
Interest on Term Loan	9.65%	9.65%
Interest on Working Capital	10.15%	10.15%
Depreciation	4.67% during first 15 yrs and 2% during balance of life of project	4.67% during first 15 yrs and 2% during balance of life of project
Minimum Alternate Tax	17.47%	17.47%
Corporate Income Tax	34.94%	34.94%
Return on Equity	15.5%	15.5%
Tariff	Levelized Fixed cost component of Tariff for 25 years a) Without AD benefit – Rs 2.16/kWh b) With AD benefit – Rs 2.00/kWh	Levelized Fixed cost component of Tariff for 25 years a) Without AD benefit – Rs 2.29/kWh b) With AD benefit – Rs 2.12/kWh
	Variable Component of Tariff during • FY 2023-24 – Rs 4.82/kWh • FY 2024-25 - Rs 5.06/kWh • FY 2025-26 - Rs 5.31/kWh • FY 2026-27- Rs 5.57/kWh	Variable Component of Tariff during • FY 2023-24 – Rs 5.01/kWh • FY 2024-25 - Rs 5.26/kWh • FY 2025-26 - Rs 5.52/kWh • FY 2026-27- Rs 5.79/kWh

Detail Tariff computation sheets for Biomass based Power project using Water cooled condenser and Air-Cooled condenser are attached as **Exhibit A & B** with this Order.

2.25 Computation of Tariff for Bagasse-based Cogeneration Projects

Based on the foregoing discussion, the operational and financial parameters considered by the Commission for determination of tariff for Bagasse based Cogeneration power projects are provided in the table below:

Parameters	Bagasse based Cogeneration Project
Project Cost and O&M	
Total Project Cost (Land + Plant & Machinery + Erection Cost + Evacuation Infrastructure Cost up to Interconnection Point) (Rs. Lakh/MW)	522
Normative O&M Cost for first year	3% of Capital Cost
Escalation in O&M (per annum from 2nd year)	5.72%
Performance Parameter	
PLF (%)	60%
Auxiliary Consumption (%)	8.5%
Project Life	25 Years
Station Heat Rate (kCal/kWh)	3600
Gross Calorific Value of Biomass (kCal/kg)	2250
Cost of Fuel (Rs. /MT)	2780
Fuel Cost escalation (%)	5% per annum
Financial Parameter	
Debt-Equity ratio	70:30
Loan Tenure	15 years
Interest on Term Loan	9.65%
Interest on Working Capital	10.15%
Depreciation	4.67% during first 15 yrs and 2% during balance of life of project
Minimum Alternate Tax	17.47%
Corporate Income Tax	34.94%
Return on Equity	15.5%
Tariff	Levelized Fixed cost component of Tariff for 25 years a) Without AD benefit – Rs 2.15/kWh b) With AD benefit – Rs 1.99/kWh
	Variable Component of Tariff during • FY 2023-24 – Rs 4.86/kWh • FY 2024-25 - Rs 5.10/kWh • FY 2025-26 - Rs 5.36/kWh • FY 2026-27 - Rs 5.63/kWh

Detail Tariff computation sheets for Bagasse based Cogeneration project is attached as **Exhibit C** with this Order.

The Biomass power and Bagasse based co-generation project to be commissioned under the PPA signed during the control period of this tariff order shall be eligible to get the above fixed component of tariff over the useful life of 25 years of the plant and yearly variable component of tariff as specified in the tariff order of the Commission from time to time. The Biomass and Bagasse Cogeneration Projects commissioned during the control period of previous tariff Orders of the Commission and executed PPA with the GUVNL/DISCOM, if any, shall be eligible for yearly above variable cost component of tariff determined by the Commission in this new tariff order while they shall continue to get levelized fixed cost component of tariff as per the previous tariff orders of the Commission read with provisions of PPA executed between the parties, as applicable.

Chapter 3: Other Commercial issues

3.1 Clause 3.1: Transmission and Wheeling Charges

3.1.1 Proposed in Discussion Paper

The Commission in the discussion paper proposes following wheeling charges for Biomass and Bagasse based cogeneration projects intending to avail open access for sale/use of electricity.

- **Wheeling of Power for Third Party Sale**

a) In case of injection of energy at 66 KV level or above and drawl of energy below 66 KV voltage level in such case, wheeling of Power for third party sale from Biomass & Bagasse Power Projects shall be allowed on payment of transmission charges, transmission losses and wheeling charges and losses as determined by the Commission from time to time as applicable to green energy open access transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time

b) In case point of injection and drawl at 11 KV or below levels lies within area of same DISCOM, the wheeling of energy from Biomass and Bagasse based Cogeneration Project shall be allowed upon payment of Wheeling Charges and Wheeling Losses of energy fed to grid, as applicable to green energy open access transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time.

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

- **Wheeling of Power for Captive Use**

a) In case of injection of the electricity at 66 KV level or above and drawl of electricity up to 66 KV level, the transmission of energy from Biomass & Bagasse Power Projects from the injection point to drawl place shall be allowed for captive use by paying transmission charges and losses determined by the Commission from time to time, as applicable to

Green Energy Open Access Transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time.

b) In case of injection of energy at 66 KV level or above and drawl of energy below 66 KV voltage level in such case, wheeling of Power for captive from Biomass & Bagasse Power Projects shall be allowed on payment of transmission charges, transmission losses and wheeling charges and losses as determined by the Commission from time to time as applicable to green energy open access transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time.

c) In case point of injection and drawl at 11 KV or below levels lies within area of same DISCOM, the wheeling of energy for captive use from Biomass and Bagasse based Cogeneration Project shall be allowed upon payment of Wheeling Charges and Wheeling Losses of energy fed to grid, as applicable to green energy open access transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time.

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

green energy open access transaction as per GERC Green Energy Open Access Regulations, 2024 and amendments in it from time to time along with delayed payment surcharge thereon.

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

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

The various provisions related to Captive Generating Plant (CGP) and consumption of energy from such plant as stipulated in the GERC Green Energy Open Access Regulations, 2024 shall be applicable for Biomass power and Bagasse based Cogeneration Project.

- **Wheeling of Power to More than One Locations**

Biomass power and Bagasse based Cogeneration Project Developers, who desire to wheel electricity to more than one location for captive use/third-party sale, shall pay 5 paise per unit on energy fed in the grid to the concerned DISCOM in whose area power is consumed in addition to above mentioned transmission charges and losses, as applicable.

3.1.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.1.3 Analysis and Commission's Ruling

The Commission decides to retain the wheeling related provisions for third party sale, captive use and wheeling of power to more than one location as proposed in the discussion paper.

3.2 Clause 3.2: Metering Point & Interconnection Point

3.2.1 Proposed in Discussion Paper

The Commission proposes following with regard to Metering arrangement:

i. The interconnection point will be at the line isolator on outgoing feeder on HV side of generator transformer and the metering point will be at the interconnection point of the generator bus-bar with the transmission or distribution system concerned, as the case may be. The Biomass power and Bagasse based Cogeneration project shall provide energy metering and communication facility in accordance with the (a) the CEA (Installation and Operation of meters) (Amendment) Regulations 2014 and its subsequent amendments, (b) Gujarat Electricity Grid Code 2013 and its subsequent amendments (c) GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments, (d) the GERC Distribution Code 2004 and its subsequent amendments and (e) GERC (Terms and Conditions of Green Energy Open Access) Regulations, 2024 and its subsequent amendments.

ii. The Biomass power and Bagasse based Cogeneration project developers shall have to provide four quadrant ABT compliant meters at the interface point which shall conform to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2014, as amended from time to time. GETCO/DISCOM to stipulate necessary specifications in this regard. The ABT meter shall be AMR compatible.

iii. For the purpose of commercial settlement and energy accounting, the metering point shall be at the receiving end sub-stations of DISCOM/ GETCO as the case may be. The electricity generated shall be metered and readings taken jointly by The Biomass power and Bagasse based Cogeneration project developer with the representative of DISCOM and GETCO at the metering point, on monthly basis.

iv. The Biomass power and Bagasse based Cogeneration project above 4 MW capacity shall install Remote Terminal Unit (RTU) at the pooling station at their own cost for transferring the real time data to SLDC for its monitoring purpose, and in accordance with the GERC orders from time to time.

v. State Load Dispatch Centre shall certify actual injected energy and energy drawn (if any) from local DISCOM on monthly basis.

vi. Energy metering and communication facility shall be provided by the developer of The Biomass power and Bagasse based Cogeneration projects in accordance with the following Regulations/Codes/Orders and their subsequent amendments:

a) Central Electricity Authority (Installation and Operation of meters) Regulations 2014 and its subsequent amendments.

b) Gujarat Electricity Grid Code 2013 and its subsequent amendments.

c) GERC (Terms and Conditions of Intra-State Open Access) Regulations, 2011 and its subsequent amendments.

d) GERC Distribution Code 2004 and its subsequent amendments.

e) GERC (Terms and Conditions for Green Energy Open Access), Regulations 2024 and its subsequent amendments.

vii. For the purpose of energy accounting, all The Biomass power and Bagasse based Cogeneration Project Developer shall have to provide ABT compliant (four quadrant) meters and if the power is to be wheeled to consumers' premises, then ABT cum Tariff compatible meter is to be installed at the consumers' premises also. While in case of consumer seeking open access below 1 MW, installation of Special Energy Meter capable of energy recording on 15 Minute Time Block basis at consumption end shall be allowed. GEDA, GETCO and DISCOMs shall ensure the energy accounting of active and reactive energy from the Biomass power and Bagasse based Cogeneration project each consumer/customer. Energy Accounting shall be done by SLDC.

3.2.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

3.2.3 Analysis and Commission's Ruling

The Commission decides to retain the Metering related provisions for Biomass and Bagasse based Cogeneration projects as proposed in the discussion paper during the control period of this Order.

3.3 Clause 3.3: Renewable Energy Certificates for Third-Party Sale and Captive Use of power generated from biomass power projects and bagasse-based co-generation projects

3.3.1 Proposed in Discussion Paper

The Commission proposes that the biomass and bagasse-based co-generation projects registered in the REC mechanism, shall be governed by the CERC (REC) Regulations and its amendments from time to time to be eligible for availing RECs.

3.3.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.3.3 Analysis and Commission's Ruling

The Commission decides to retain the REC related provisions for Third-Party Sale and Captive Use of power generated from biomass power projects and bagasse-based co-generation projects as proposed in the discussion paper during the control period of this Order.

3.4 Clause 3.4: Pricing of Reactive Power

3.4.1 Proposed in Discussion Paper

Reactive Power is required by the Biomass power and Bagasse based Cogeneration project from the grid including during requirement initial start-up and station transformers. Hence, in order to maintain grid stability, it is necessary to limit such reactive power consumption from the grid by installation of suitable compensation devices.

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

3.4.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.4.3 Analysis and Commission's Ruling

The Commission decides to retain the provisions for pricing of Reactive Power for biomass power projects and bagasse-based co-generation projects as proposed in the discussion paper during the control period of this order.

3.5 Clause 3.5: Sharing of Clean Development Mechanism (CDM) Benefits

3.5.1 Proposed in Discussion Paper

It is proposed that the sharing of CDM benefits or any other benefit such as carbon credit or any other benefits under Clean Development Mechanism or any other mechanism under any provision from any source providing such benefits to the Biomass power and Bagasse based Cogeneration project for which it shall qualify to receive such benefit on the energy generation from the Biomass and Bagasse based Cogeneration based power generation project shall apply to the concerned authority to avail/receive the benefit for the project. The benefits which shall be receivable or received shall be shared with the procurer of power and/or licensee as under:

1) 100% of the gross proceeds on account of such CDM benefit or any other benefit under Clean Energy Mechanism from any source to be retained by the project Developer in the first year after the date of commercial operation of the generating station.

2) In the second year, the share of the Beneficiaries like power procurer/licensee shall be 10% which shall be progressively increased by 10% every year till it reaches 50%, where after the proceeds shall be shared in equal proportion, by the Generating Company and the Beneficiaries like power procurer/licensee." The above approach is proposed to be adopted for all prospective Biomass and Bagasse based Cogeneration power projects.

3.5.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.5.3 Analysis and Commission's Ruling

The Commission decides to retain the CDM related provisions for biomass power projects and bagasse-based co-generation projects as proposed in the discussion paper during the control period of this order.

3.6 Clause 3.6: Banking of Surplus Energy

3.6.1 Proposed in Discussion Paper

Biomass and bagasse-based co-generation projects generate power with controlled supply of fuel and hence the power generated from such projects can be predicted and scheduled to maintain grid discipline. Hence, such projects are required to schedule their power as per the provisions of ABT mechanism as amended from time to time. Accordingly, in regard to Biomass and Bagasse based Power Projects set up for captive use/ third party sale, the Commission in its earlier Tariff Order No. 01 of 2018 and Order No. 03 of 2022 provided for allowing set off wheeled energy at the recipient unit (s) in the same 15-minute time block basis. The Commission proposes to continue the same practice for the next control period. The Commission, therefore, decides not to allow any banking facility to biomass-based power projects and bagasse-based co-generation projects either selling power to third party or wheeling for self-use.

3.6.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.6.3 Analysis and Commission's Ruling

The Commission decides to keep the banking related provisions for Biomass and Bagasse based Cogeneration projects as proposed in the discussion paper either consuming power as third party consumer or wheeling for self-use for the next control period.

3.7 Clause 3.7: Purchase of Surplus Power from Biomass Power and Bagasse based Co-generation Projects Opting for Captive Use and Third-Party Sale under Open Access

3.7.1 Proposed in Discussion Paper

Biomass power and bagasse-based co-generation projects are required to schedule the power as per the provisions of ABT mechanism. In case of Biomass power and bagasse based cogeneration projects set up for captive use/ third party sale, the Commission proposes that surplus power over and above the settlement of wheeled energy given in same 15 minute time block basis at the recipient unit shall be treated as per provisions under intra state ABT mechanism or any new mechanism as may be introduced by the Commission during the

control period of new tariff order.

3.7.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.7.3 Analysis and Commission's Ruling

The Commission decides to retain the provisions for Purchase of Surplus Power from Biomass Power and Bagasse based Co-generation Projects Opting for Captive Use and Third-Party Sale under Open Access as proposed in the discussion paper.

3.8 Clause 3.8: Contract Demand for Commissioning/Start-up Power

3.8.1 Proposed in Discussion Paper

The biomass power projects selling power to distribution licensee, the start –up power and standby power would be at par with the energy charges applicable to the HT industrial consumer of similar connected load / category. Further as a promotional measure, the Commission has exempted such projects from payment of demand charges for commissioning and start-up power requirement. For the bagasse-based co-generation projects, such requirement of standby power can be met from the existing power supply available for the sugar factory.

3.8.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.8.3 Analysis and Commission's Ruling

The Commission decides to retain the treatment for commissioning / start –up power and its billing for Biomass Power and Bagasse based Co-generation Projects as proposed in the discussion paper during the control period of this tariff order.

3.9 Clause 3.9: Security Deposit

3.9.1 Proposed in Discussion Paper

The Commission proposes that the Biomass Power & Bagasse based Cogeneration project

developers are required to furnish Bank Guarantee of Rs. 10 Lakh/MW as a security deposit after entering into PPA with Distribution Licensees. 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.

3.9.2 Suggestions/Objections of the Stakeholders

The Commission has not received any comments/suggestions from the stakeholders in this regard.

3.9.3 Analysis and Commission's Ruling

The Commission decides to retain the Security Deposit related provisions for Biomass Power and Bagasse based Co-generation Projects as proposed in the discussion paper during the control period of this tariff Order.

3.10 Clause 3.10: Information and Data sharing by Biomass and Bagasse based Cogeneration Project

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:

1) Opening Balance of Biomass & Bagasse fuel, if any
2) Opening Balance of Calorific Value of Biomass & Bagasse fuel, if any
3) Quantity of Biomass & Bagasse received
4) Calorific Value of Biomass & Bagasse received, if determined by approved laboratory
5) Quantity of Biomass & Bagasse utilised for generation of electricity
6) Calorific Value of Biomass & Bagasse fuel utilised
7) Gross Electricity Generation
8) Auxiliary consumption
9) Net Electricity Generation as per SEA of SLDC
10) Closing Balance of Quantity of Biomass & Bagasse fuel,

11) Closing Balance of Calorific Value of Biomass & Bagasse fuel etc.

The above information shall be provided with monthly invoices raised by the Biomass & Bagasse Developer (Supplier) to the Nodal Agency (GUVNL)/DISCOM (Procurer).

Moreover, the Biomass & Bagasse 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 the Biomass & Bagasse Project Developer. It is made clear that any electricity generated through use of any other fuel other than Biomass & Bagasse fuel shall not be allowed.

3.10.1 Suggestions/Objections of the Stakeholders

The Commission has not received any comments / suggestions from the stakeholders in this regard.

3.10.2 Analysis and Commission's Ruling

The Commission decides to retain the Information and Data sharing procedure specified in the discussion paper for Biomass and Bagasse based Cogeneration Projects. The Commission direct the Biomass and Bagasse based Cogeneration generators/owners to adhere to the above procedure and share the information on daily/monthly/annual basis to DISCOM/ GUVNL without failure

3.11 Applicability of the Order

The Biomass power and Bagasse based co-generation project to be commissioned under the PPA signed during the control period of this Order shall be eligible to get the fixed component of tariff determined in this order over the useful life of 25 years of the plant and yearly variable component of tariff as specified in the tariff order of the Commission from time to time. The Biomass and Bagasse Cogeneration Projects Commissioned during the control period of previous tariff Orders of the Commission and executed PPA with the GUVNL/ DISCOM, if any, shall be eligible for above yearly variable cost component of tariff determined by the Commission in this tariff order while they shall continue to get levelized fixed cost component

of tariff as per the previous tariff orders of the Commission read with provisions of PPA executed between the parties, as applicable.

Further, we are of the view that to promote the renewable energy available from biomass/bagasse co-generation projects, if any project developers approach the distribution licensees, the distribution licensees may consider the proposal and enter into the PPA with project developer with the provisions that the SCOD of such project may have available time up to 36 months from date of signing of the PPA and the fixed component of the tariff receivable by generators should be lower of applicable tariff in two control periods, i.e., (i) date of signing of the PPA and (ii) date of actual SCOD.

Sd/-	**Sd/-**	**Sd/-**
[S. R. Pandey]	**[Mehul M. Gandhi]**	**[Anil Mukim]**
Member	**Member**	**Chairman**

Place: Gandhinagar.

Date: 21 /03/2025.

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

Sr. No.	Name of Stakeholders
1.	Gujarat Urja Vikas Nigam Limited

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

Sr. No.	Name of Stakeholders
1.	Gujarat Urja Vikas Nigam Limited

EXIBIT A: Tariff Computation Sheet for Biomass Power Projects using Water Cooled Condenser

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Net Energy sold (lakh Kwh)	55.19	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07
Costs (Rs. Lakh)																									
O&M	28.75	30.39	32.13	33.97	35.91	37.97	40.14	42.44	44.86	47.43	50.14	53.01	56.04	59.25	62.64	66.22	70.01	74.01	78.25	82.72	87.45	92.46	97.75	103.34	109.25
Depreciation (SLM)	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	26.83	11.50	11.50	11.50	11.50	11.50	11.50	11.50	11.50	11.50	11.50
Interest on term loan	37.55	34.96	32.37	29.78	27.19	24.60	22.01	19.42	16.83	14.24	11.65	9.06	6.47	3.88	1.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	6.43	7.37	7.68	8.01	8.35	8.72	9.10	9.51	9.93	10.38	10.89	11.39	11.91	12.46	13.04	13.53	14.20	14.89	15.63	16.40	17.21	18.06	18.95	19.89	20.88
Return on Equity	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74	26.74
Tax on equity	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	4.67	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34	9.34
Fuel cost	265.73	318.88	334.82	351.56	369.14	387.60	406.98	427.33	448.69	471.13	494.69	519.42	545.39	572.66	601.29	631.36	662.93	696.07	730.88	767.42	805.79	846.08	888.38	932.80	979.44
Total Cost (Rs lakh)	396.70	449.84	465.25	481.56	498.84	517.13	536.47	556.93	578.56	601.42	630.28	655.79	682.73	711.17	741.18	758.69	794.71	832.56	872.33	914.12	958.03	1004.17	1052.66	1103.61	1157.15
Fixed cost (Rs lakh)	130.97	130.97	130.43	130.00	129.70	129.53	129.49	129.60	129.87	130.29	135.60	136.37	137.34	138.51	139.89	127.33	131.78	136.49	141.45	146.70	152.24	158.09	164.28	170.81	177.70
Fuel cost (Rs lakh)	265.73	318.88	334.82	351.56	369.14	387.60	406.98	427.33	448.69	471.13	494.69	519.42	545.39	572.66	601.29	631.36	662.93	696.07	730.88	767.42	805.79	846.08	888.38	932.80	979.44
Tariff																									
Fixed tariff (Rs / kWh)	2.37	2.08	2.07	2.06	2.06	2.05	2.05	2.05	2.06	2.07	2.15	2.16	2.18	2.20	2.22	2.02	2.09	2.16	2.24	2.33	2.41	2.51	2.60	2.71	2.82

Variable tariff (Rs / kWh)	4.82	5.06	5.31	5.57	5.85	6.15	6.45	6.78	7.11	7.47	7.84	8.24	8.65	9.08	9.53	10.01	10.51	11.04	11.59	12.17	12.78	13.41	14.09	14.79	15.53
Tariff (Rs/kWh)	7.19	7.13	7.38	7.64	7.91	8.20	8.51	8.83	9.17	9.54	9.99	10.40	10.82	11.28	11.75	12.03	12.60	13.20	13.83	14.49	15.19	15.92	16.69	17.50	18.35
Discount Rate			9.52%																						
Levelized Fixed Tariff (Rs / kWh)			**2.16**																						

EXIBIT B: Tariff Computation Sheet for Biomass Power Projects using Air Cooled Condenser

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Net Energy sold (lakh Kwh)	55.19	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07	63.07
Costs (Rs. Lakh)																									
O&M	30.55	32.30	34.14	36.10	38.16	40.35	42.65	45.09	47.67	50.40	53.28	56.33	59.55	62.96	66.56	70.37	74.39	78.65	83.15	87.90	92.93	98.25	103.86	109.81	116.09
Insurance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Depreciation (SLM)	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	28.52	12.22	12.22	12.22	12.22	12.22	12.22	12.22	12.22	12.22	12.22
Interest on term loan	39.90	37.15	34.39	31.64	28.89	26.14	23.39	20.64	17.88	15.13	12.38	9.63	6.88	4.13	1.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	6.73	7.71	8.03	8.37	8.73	9.11	9.51	9.93	10.38	10.84	11.38	11.89	12.44	13.01	13.62	14.13	14.82	15.55	16.32	17.12	17.97	18.85	19.79	20.77	21.80
Return on Equity	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41	28.41
Tax on equity	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96	4.96	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93	9.93
Fuel cost	276.22	331.47	348.04	365.44	383.71	402.90	423.04	444.20	466.41	489.73	514.21	539.92	566.92	595.26	625.03	656.28	689.09	723.55	759.73	797.71	837.60	879.48	923.45	969.62	1018.10
Total Cost (Rs lakh)	415.29	470.51	486.50	503.44	521.39	540.39	560.49	581.75	604.23	627.99	658.11	684.63	712.64	742.22	773.44	791.33	828.87	868.30	909.75	953.29	999.05	1047.14	1097.66	1150.76	1206.55
Fixed cost (Rs lakh)	139.07	139.04	138.46	138.00	137.68	137.49	137.44	137.55	137.82	138.27	143.89	144.71	145.73	146.95	148.41	135.05	139.77	144.76	150.02	155.58	161.45	167.66	174.21	181.13	188.44
Fuel cost (Rs lakh)	276.22	331.47	348.04	365.44	383.71	402.90	423.04	444.20	466.41	489.73	514.21	539.92	566.92	595.26	625.03	656.28	689.09	723.55	759.73	797.71	837.60	879.48	923.45	969.62	1018.10
Tariff																									

Fixed tariff (Rs / kWh)	2.52	2.20	2.20	2.19	2.18	2.18	2.18	2.18	2.19	2.19	2.28	2.29	2.31	2.33	2.35	2.14	2.22	2.30	2.38	2.47	2.56	2.66	2.76	2.87	2.99
Variable tariff (Rs / kWh)	5.01	5.26	5.52	5.79	6.08	6.39	6.71	7.04	7.39	7.76	8.15	8.56	8.99	9.44	9.91	10.41	10.93	11.47	12.05	12.65	13.28	13.94	14.64	15.37	16.14
Tariff (Rs/kWh)	7.52	7.46	7.71	7.98	8.27	8.57	8.89	9.22	9.58	9.96	10.43	10.85	11.30	11.77	12.26	12.55	13.14	13.77	14.42	15.11	15.84	16.60	17.40	18.25	19.13

Levelized Fixed Tariff Calculations	
Discount Rate	9.52 %
Levelized Fixed Tariff (Rs / kWh)	**2.29**

EXHIBIT C: Tariff Calculations for Bagasse based Co-Generation Power Plant

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Net Energy sold (lakh Kwh)	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09	48.09
Costs (Rs. Lakh)																									
O&M	15.66	16.56	17.50	18.50	19.56	20.68	21.86	23.11	24.44	25.83	27.31	28.87	30.53	32.27	34.12	36.07	38.13	40.31	42.62	45.06	47.64	50.36	53.24	56.29	59.51
Depreciation (SLM)	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	24.36	10.44	10.44	10.44	10.44	10.44	10.44	10.44	10.44	10.44	10.44
Advance Against Depreciation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on term loan	34.09	31.73	29.38	27.03	24.68	22.33	19.98	17.63	15.28	12.93	10.58	8.23	5.88	3.53	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital	5.53	5.75	5.99	6.23	6.49	6.77	7.06	7.36	7.68	8.02	8.41	8.79	9.18	9.60	10.03	10.39	10.89	11.42	11.98	12.57	13.18	13.83	14.51	15.22	15.97
Return on Equity	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27	24.27
Tax on equity	4.24	4.24	4.24	4.24	4.24	4.24	4.24	4.24	4.24	4.24	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48	8.48
Fuel cost	233.79	245.48	257.75	270.64	284.17	298.38	313.30	328.96	345.41	362.68	380.81	399.85	419.85	440.84	462.88	486.03	510.33	535.84	562.64	590.77	620.31	651.32	683.89	718.08	753.99

Total Cost (Rs lakh)	341.94	352.40	363.50	375.28	387.78	401.03	415.07	429.94	445.68	462.34	484.23	502.86	522.55	543.35	565.33	575.68	602.55	630.78	660.43	691.59	724.32	758.70	794.83	832.78	872.66
Fixed cost (Rs lakh)	108.15	106.92	105.75	104.65	103.61	102.66	101.78	100.98	100.27	99.66	103.42	103.00	102.70	102.51	102.44	89.65	92.22	94.93	97.80	100.82	104.01	107.38	110.94	114.70	118.67
Fuel cost (Rs lakh)	233.79	245.48	257.75	270.64	284.17	298.38	313.30	328.96	345.41	362.68	380.81	399.85	419.85	440.84	462.88	486.03	510.33	535.84	562.64	590.77	620.31	651.32	683.89	718.08	753.99
Tariff																									
Fixed tariff (Rs / kWh)	2.25	2.22	2.20	2.18	2.15	2.13	2.12	2.10	2.09	2.07	2.15	2.14	2.14	2.13	2.13	1.86	1.92	1.97	2.03	2.10	2.16	2.23	2.31	2.39	2.47
Variable tariff (Rs / kWh)	4.86	5.10	5.36	5.63	5.91	6.20	6.51	6.84	7.18	7.54	7.92	8.31	8.73	9.17	9.62	10.11	10.61	11.14	11.70	12.28	12.90	13.54	14.22	14.93	15.68
Tariff (Rs/kWh)	7.11	7.33	7.56	7.80	8.06	8.34	8.63	8.94	9.27	9.61	10.07	10.46	10.87	11.30	11.76	11.97	12.53	13.12	13.73	14.38	15.06	15.78	16.53	17.32	18.15

Levelized Fixed Tariff Calculations	
Discount Rate	9.52%
Levelized Fixed Tariff (Rs / kWh)	**2.15**