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Gujarat High Court Chamber

Nos.: 209 and 230

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27th September, 2021

To
The Secretary,
The Hon'ble Gujarat Electricity Regulatory Commission
6th Floor, GIFT ONE
Road 5C, Zone 5, GIFT City
Gandhinagar 382 355

Sub: Petition under Section 86 read with Sections 62 and 181 of the
Electricity Act, 2003 for issuing necessary directives to Gujarat
Energy Development Agency to consider power generated from
co-fired biomass towards compliance of non-solar Renewable
Purchase obligation

Dear Sir,

Please find enclosed herewith five sets of Petition being filed on behalf of
our client, Reliance Industries Ltd. We request the Hon'ble Commission to
register the Petition and do the needful in this regard and oblige.

Yours Sincerely,
For Nanavati Associates,

Nisarg M. Desai
Nisarg M. Desai,
Advocate.

Encl: As above.

MR NO. 2859

28.9.2021

Hh

Pl. accept the fees of Rs. 10,000/- subject
to verification of GENE (Fees, Fines & charges)
Regulations, 2005.
Within
28/09/2021
AD (Legal)

**BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY COMMISSION,
GANDHINAGAR**

PETITION NO. _____ OF 2021

Reliance Industries Limited

.... Petitioner(s) / Appellant(s)/
Applicant(s)

Versus

Gujarat Energy Development Agency

.... Respondent(s)/Opponent(s)

VAKALATNAMA

I/WE, Reliance Industries Limited
do hereby Nominate, authorize and appoint

**NANAVATI ASSOCIATES
ADVOCATES**



**Satyam Corporate, Square, Block-B, Behind Rajpath Club, Nr. Friends Avenue,
Off. S.G. Highway, Bodakdev, Ahmedabad- 380 059**

Represented by Dharmishtha K. Nanavati, Keyur D. Gandhi, Pranit K. Nanavati, Kunal K. Nanavati, Nirav Joshi, Nisarg M. Desai, Raheel S. Patel, Kunal J. Vyas, Laukik Pant, Divyesh D. Bais, Pooja Rohan Shah, Shriyang Masruwala, Gaurav Dave and Jaimin Mistry hereinafter called the Advocates, to be my/our Advocates in the above noted matter and authorize them: -

To act, appear and plead in the above noted matter in this Court or any other Court where the same may be tried or heard or in the appellate courts.

To sign, file and present pleadings, applications, appeals, cross objections or petitions for execution, review, revision, restoration, withdrawal, compromise or other petitions, replies objections or affidavits or other documents as may be deemed necessary or proper for the prosecution of the said case at all stages.

To file and take back documents.

To withdraw or compromise the said case or submit to arbitration any differences or disputes that may arise in or touching upon any matter relating to the said case.

To take out execution proceedings.

To deposit, draw and receive moneys, cheques and grant receipts therefore and to do all things and acts which may be necessary to be done for the progress and in the course of the prosecution of the said case.

To appoint, instruct any other legal practitioner, authorizing him to exercise the power and authorities hereby conferred upon the advocate/s;

AND I/WE agree to ratify all acts done by the aforesaid advocate/s in pursuance of this authority.

Date this 27th day of September, 2021

Nisarg Desai

Accepted

Phone : (079) 40038081-05

FAX 079-40038086

Lawyers Chamber No.230

Phone : 27663980

e-mail : efiling@nanavatiassociates.com

For, Reliance Industries Ltd.

Asish B Shah

Client(s) Signature : Authorised Signatory

Name : _____

Designation : _____

Company Seal : _____



**BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY
COMMISSION, GANDHINAGAR**

PETITION NO. OF 2021

Reliance Industries Limited

...Petitioner

Versus

Gujarat Energy Development Agency

...Respondent

I N D E X

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1.	--	Memo of Petition	1 - 17
2.	A	Copy of the Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources Regulation), 2010	18 - 28
4.	B	Copy of the Notification dated 01.07.2015 of this Hon'ble Commission.	29
5.	C	Copy of the Policy dated 17.11.2017 issued by Ministry of Power.	30 - 32
6.	D	Copy of the Advisory dated 24.11.2017 issued by Central Electricity Authority.	33 - 41
7.	E	Copy of the Order dated 09.02.2018 passed by this Hon'ble Commission.	42 - 108
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9.	G	Copy of the Notification dated 26.09.2019 issued by Ministry of New and Renewable Energy.	111 -
10.	H	Copy of the Order dated 18.02.2020 passed by Central Electricity Regulatory Commission.	112 - 122

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12.	J (Colly.)	Copies of the Petitioner's Letters dated 09.03.2021 and 21.07.2021.	125 - 128
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Place: Ahmedabad
Date: __.09.2021


For Nanavati Associates
Advocates for Petitioner



**BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY
COMMISSION, GANDHINAGAR**

PETITION NO. OF 2021

IN THE MATTER OF: Petition under Section 86 read with Sections 62
 & 181 of the Electricity Act, 2003.

AND

IN THE MATTER OF: Regulation 12 of GERC (Procurement of
 Renewable Energy from Renewable Energy
 Sources) Regulations 2010.

IN THE MATTER OF: Regulation 4, 5 and 8 of Gujarat Electricity
 Regulatory Commission (Procurement of energy
 from Renewable Sources), 2010.

AND

IN THE MATTER OF: Gujarat Electricity Regulatory Commission
 (Procurement of energy from Renewable Sources)
 (First Amendment) Regulations, 2014.

AND

IN THE MATTER OF: Gujarat Electricity Regulatory Commission
 (Procurement of energy from Renewable Sources)
 (Second Amendment) Regulations, 2018.

AND

IN THE MATTER OF: Petition for issuing necessary directives to
 Gujarat Energy Development Agency to consider
 power generated from co-fired biomass towards
 compliance of non-solar Renewable Purchase
 obligation.

AND

IN THE MATTER OF:

Reliance Industries Limited
Having its Office at: "Vraj",
Off. Sindhu Bhavan Road,
Opp. Kadamb Villa Bungalow,
Besides Orion Ceremonial Lawns,

Arzesh



Bodakdev, Ahmedabad – 380054.

... Petitioner

Versus

Gujarat Energy Development Agency
4th Floor, Block No. 11&12,
Udyog Bhavan, Sector – 11,
Gandhinagar – 382 017.

... Respondent

MOST RESPECTFULLY SHEWETH THAT:

Preamble: -

1. The Petitioner is filing the present petition seeking appropriate directions under Proviso 4.1 of Regulation 4 and Proviso 8.1, 8.2, 8.3 of Regulation 8 of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010 to consider units generated through Biomass co-firing along with coal at its Captive Power Plants situated in Dahej Manufacturing Division (DMD) and Hazira Manufacturing Division (HMD) towards compliance of its non-solar Renewable Purchase Obligation (RPO). The Petitioner Reliance Industries Limited (“**RIL**”) also seeks a direction to Gujarat Energy Development Agency (“**GEDA**”), the state nodal agency, to consider the power generated from Biomass cofiring towards Non-Solar RPO compliance.

BRIEF FACTUAL BACKGROUND: -

2. The Petitioner is in the business, inter-alia, of producing petroleum and petrochemicals and has captive power plants at all major manufacturing sites in the state fulfilling the energy requirement of their industries through captively produced powers. The Petitioner has installed coal based captive Power Plants (CPP) of 270 MW at Dahej and 360 MW at Hazira.
3. The Petitioner states that this Hon’ble Commission had issued the Notification No. 3 of 2010 containing the Regulations called as



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“Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Energy Sources Regulation), 2010” (hereinafter referred to as “**GERC RPO Regulations**”). Perusal of Clause 3 of the said Regulations makes it clear that it is also applicable to Petitioner and the Petitioner, being an obligated entity has to fulfill the Renewable Purchase Obligation (RPO) as per defined minimum quantum of purchase (in percentage) from renewable energy sources specified in Table 1 of Clause 4.1 of the said Regulations. Annexed hereto and marked as “**Annexure-A**” is a copy of the said GERC RPO Regulations. the Regulation 4.1 inter alia provides quantum of Renewable Power Purchase Obligation (RPO) quoted herein below for ready reference:

“4. Quantum of Renewable Purchase Obligation (RPO)

4.1 Each distribution licensee shall purchase electricity (in kWh) from renewable energy sources, at a defined minimum percentage of the total consumption of its consumers including T&D losses during a year. Similarly, Captive and Open Access user(s) / consumer(s) shall purchase electricity (in kwh) from renewable energy sources, at a defined minimum percentage of his/her total consumption during a year.

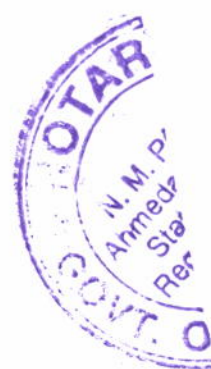
The defined minimum percentages are given below in the Table 1.

Year	Minimum Quantum of Purchase (in %) from renewable energy sources (in terms of energy in kWh).			
	Total (%)	Wind (%)	Solar (%)	Others (Biomass, Bagasse, Hydro and MSW) (%)
(1)	(2)	(3)	(4)	(5)
2010-11	5%	4.5%	0.25%	0.25%
2011-12	6%	5%	0.5%	0.5%
2012-13	7%	5.5%	1%	0.5%

If the above-mentioned minimum quantum of power purchase from solar and other renewable energy sources is not available in a particular year, then in such cases, additional wind or other energy, over and above that shown in column 3 and 5, shall be utilized for fulfillment of the RPO in accordance with column 2.

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Provided further that such obligation to purchase renewable energy shall be inclusive of the purchases, if any, from renewable energy sources already being made by the obligated entity concerned:

Provided also that the power purchases under the power purchase agreements for the purchase of renewable energy sources already entered into by the distribution licensees shall continue to be made till their present validity, even if the total purchases under such agreements exceed the percentage as specified hereinabove.

Moreover Regulation 8 of the said regulation provides for Captive User(s) /Consumer(s)

8. Captive and Open Access User(s)/ Consumer(s)

8.1 The quantum of RPO mentioned in clause 4.1 shall be applicable to captive and open access user(s)/ consumer(s) from the date as would be notified in the Official Gazette.

8.2 Every Captive and Open access consumer(s)/ user(s) shall have to submit necessary details regarding total consumption of electricity and purchase of energy from renewable sources for fulfillment of RPO on yearly basis on or before 30th April to the State Agency. 8.3 Captive and Open Access Consumer(s)/ User(s) shall purchase renewable energy as stated in Table I of these Regulations. If the Captive user(s) and Open Access consumer(s) are unable to fulfil the criteria, the shortfall of the targeted quantum would attract payment of regulatory charge as per clause 9.

8.4 Captive/ Open Access consumer(s)/ User(s) may fulfil its RPO through the renewable energy certificate as provided in clause 5 above

4. On 04.03.2014, this Hon'ble Commission issued Notification No. 2 of 2014 being Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) (First Amendment) Regulations, 2014 wherein this Hon'ble Commission specified the minimum quantum of purchase from the renewable energy sources for the FY 2010-11 till FY 2016-17.
5. On 01.07.2015, this Hon'ble Commission issued Notification No. 2 of 2015 wherein the Renewable Purchase Obligation ("RPO") was made applicable on captive users with effect from 01.07.2015. Annexed hereto and marked as "**Annexure-B**" is a copy of the aforesaid notification dated 01.07.2015.



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6. The Petitioner states that Ministry of Power had issued the Policy dated 17.11.2017 for biomass utilization for power generation through co-firing in pulverized coal fired boilers. The Policy also advised that the appropriate commission will determine the compensation to be allowed in tariff for increase in cost of generation on account of using bio-mass pellets, viz. cost of pellets, increase in auxiliary power consumption and plant heat rate, etc. Annexed hereto and marked as **“Annexure-C”** is a copy of the aforesaid Policy dated 17.11.2017 issued by the Ministry of Power.
7. The Petitioner states that the Central Electricity Authority (**“CEA”**) issued an Advisory dated 24.11.2017 for Biomass Utilization for Power Generation through co-firing in pulverized coal fired boilers dated 24.11.2017. Annexed hereto and marked as **“Annexure-D”** is a copy of the said Advisory dated 24.11.2017 issued by the CEA.
8. This Hon’ble Commission had issued Order No.1 of 2018 dated 09.02.2018 for determination of tariff for procurement of power by the distribution licensee and others from biomass-based power projects and bagasse-based cogeneration projects for control period up to FY 2019-20. The Hon’ble Commission has allowed the power plants based on biomass to fire coal up to 15% of the total quantum of energy and directed biomass developers to submit the information duly certified by Comptroller and Auditor General empanelled Chartered Accountant on monthly consumption of each biomass at the beginning of each quarter to Nodal Agency and Discom(s) with whom PPA has been signed. Annexed hereto and marked as **“Annexure-E”** is a copy of the aforesaid Order no.01 of 2018 dated 09.02.2018 of this Hon’ble Commission.

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9. On 23.04.2018, this Hon'ble Commission issued Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) (Second Amendment) Regulations, 2018 ("**GERC RPO Second Amendment Regulations**"). By the said amendment it substituted the following Table-I and II:-

TABLE-I

Year	Minimum Quantum of Purchase (in %) from renewable energy sources (in terms of energy in kWh).			
	Wind (%)	Solar (%)	Others (Biomass, Bagasse, Hydro and MSW) (%)	Total (%)
(1)	(2)	(3)	(4)	(5)
2010-11	4.5	0.25	0.25	5.0
2011-12	5.0	0.5	0.5	6.0
2012-13	5.5	1.0	0.5	7.0
2013-14	5.5	1.0	0.5	7.0
2014-15	6.25	1.25	0.5	8.0
2015-16	7.0	1.5	0.5	9.0
2016-17	7.75	1.75	0.5	10.0

TABLE-II

Year	Minimum Quantum of Purchase (in %) from renewable energy sources (in terms of energy in kWh).			
	Wind (%)	Solar (%)	Others (Biomass, Bagasse, Hydro and MSW) (%)	Total (%)
(1)	(2)	(3)	(4)	(5)
2017-18	7.75	1.75	0.5	10.00
2018-19	7.95	4.25	0.5	12.70
2019-20	8.05	5.5	0.75	14.30
2020-21	8.15	6.75	0.75	15.65
2021-22	8.25	8.0	0.75	17.00

"4) Substitution of para 2 of Principal Regulation 4.1:

If the above mentioned minimum quantum of power purchase either from Solar or Wind or Others (including Biomass, Bagasse, Hydro and MSW) is not available in a particular year of FY 2017-18 to 2021-22, then in such cases, additional renewable energy available either from Solar or Wind or Others shall be utilised for fulfillment of RPO in accordance with Column 5."

Annexed hereto and marked as "**Annexure-F**" is a copy of the said Notification dated 23.04.2018 of GERC RPO Second Amendment Regulations.

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10. The Ministry of New and Renewable Energy ("**MNRE**"), vide its Notification dated 26.09.2019 bearing No. 19/2/2019-BPD, clarified that the power generated from co-firing of biomass in the thermal power plants is a renewable energy and is eligible for meeting non-solar RPO. It also requested CERC to formulate and notify a procedure/methodology for quantifying the energy produced from biomass in biomass co-fired thermal power plants in a reliable and accurate manner which then would form the basis for respective State Electricity Regulatory Commissions (SERCs) and other relevant agencies for computing the energy produced from biomass in biomass co-fired thermal power plants and also for determination of tariff, wherever applicable. Annexed hereto and marked as "**Annexure-G**" is a copy of the said Notification dated 26.09.2019 issued by MNRE.

11. The Petitioner states that the CERC, vide its order dated 18.02.2020 issued methodology for estimating the energy generated from biomass in biomass co-fired coal based thermal power plants, including Captive Power Plants and co-generation Plants. CERC also directed that the generating company shall maintain separate fuel accounts for coal and bio-mass and separate Gross Calorific Value (GCV) accounts for coal and bio-mass and same shall be made available to authorized representatives of beneficiaries and they shall be allowed inspection during the period when bio-mass is being co-fired. It further ordered that the generating company shall publish the quantum of bio-mass fired and energy generated from bio-mass based on the formulae specified in the said order. Annexed hereto and marked as "**Annexure-H**" is a copy of the said order of CERC dated 18.02.2020.



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12. Regulation 2.1 (p) of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010 defines renewable energy sources as:

*“(p) 'Renewable energy sources' in this context means non-conventional, renewable electricity generating sources such as mini / micro hydel, wind, solar, **biomass** and bagasse-based cogeneration, urban / municipal waste, or such other sources, (which are generally inexhaustible and can be replenished in a short period of time) as approved by the Ministry of New and Renewable Energy, Government of India or by the State of Gujarat;”*

13. The Ministry of New and Renewable Energy has approved that the power generated from co-firing of biomass in thermal power plant is a renewable energy vide notification no. 19/2/2019-BPD dated 26th September, 2019.
14. Accordingly, in terms of Regulation 2.1 (p) of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010, biomass co-firing is renewable source of energy.
15. Biomass has been categorized as Renewable power and with issuance of procedure for determination of units generated through biomass co-firing by Hon'ble CERC, such units will qualify renewable power and same can be used to meet Non-Solar RPO of an obligated entity.
16. Based on the aforesaid MNRE Notification dated 26.09.2019 and CERC Order dated 18.02.2020 and Regulation 2.1 (p) of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010, the Petitioner planned to use biomass co-firing at its Dahej and Hazira Coal based captive power plants to meet non-solar RPO. Accordingly, the Petitioner submitted a letter dated 02.02.2021 to Respondent GEDA, i.e., the nodal

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agency to approve the proposal to start use of biomass. The Petitioner commenced cofiring of biomass at its Dahej CPP and Hazira CPP from February, 2021 and April, 2021 respectively and is also submitting month wise details of biomass cofired and power generated from such cofiring as per methodology notified by CERC. Annexed hereto and marked as **“Annexure-I”** is a copy of letter dated 02.02.2021 of the Petitioner.

17. The Petitioner, further, vide its letter dated 09.03.2021 and 21.07.2021 addressed to the Secretary, Gujarat Electricity Regulatory Commission, requested the Hon'ble Commission to issue necessary orders to implement the Hon'ble CERC order in the State of Gujarat and to issue necessary directives to the Respondent GEDA to consider power generated from co-fired biomass towards compliance of non-solar RPO. Annexed hereto and marked as **“Annexure-J (Colly.)”** are the copies of letters dated 09.03.2021 and 21.07.2021 of the Petitioner to this Hon'ble Commission.
18. The Petitioners states that this Hon'ble Commission, vide its Letter dated 10.08.2021 bearing No. GERC/Legal/2021/No. informed to the Petitioner that for any decision or direction of the Commission, the person/entity may file a petition before the Commission as per the provisions of GERC (Conduct of Business) Regulations, 2004 and GERC (Fees, Fines and Charges) Regulations, 2005. Annexed hereto and marked as **“Annexure-K”** is a copy of letter dated 10.08.2021 of this Hon'ble Commission.
19. Accordingly, the Petitioner is filing the present Petition so as to give effect to co-firing of biomass at its Dahej and Hazira coal based CPPs and seeking an order from this Hon'ble Commission for the purpose

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of notifying directives/procedure to GEDA, the nodal agency for monitoring of RPO from co-firing of biomass.

SUBMISSIONS OF THE PETITIONER: -

20. The Petitioner submits that since its coal based Power Plants situated at Dahej and Hazira are captive generation plants, it is an obligated entity within the ambit of Regulation 3 and 4 of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Notification No. 3 of 2010 and thus it has to fulfill its RPO. The Petitioner also submits that this Hon'ble Commission vide its Notification No. 2 of 2015 had made RPO applicable to Captive Power Plants and hence the Petitioner had decided to use biomass co-firing at its Dahej and Hazira Captive Power Plants of 270 MW and 360 MW respectively.
21. The Petitioner respectfully submits that the Renewable Energy Sources has been defined in "Clause 2.1(p)" of the above mentioned GERC (RPO) Regulations, 2010 which is reproduced as follows: -

"2.1(p) 'Renewable energy sources' in this context means nonconventional, renewable electricity generating sources such as mini/ micro hydel, wind, solar, biomass and bagasse-based cogeneration, urban/municipal waste, or such other sources, (which are generally inexhaustible and can be replenished in a short period of time) as approved by the Ministry of New and Renewable Energy, Government of India or by the State of Gujarat"

Ministry of New and Renewable Energy has approved that the power generated from co-firing of biomass in thermal power plant is renewable energy wide notification no. 19/2/2019-BPD dated 26.09.2019. Accordingly, in terms of Regulation 2.1 (p) of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010, biomass co-firing is renewable source of energy and hence Petitioner being an obligated

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entity can use power generated from bio-mass co-firing at its coal based captive Power Plants at Dahej and Hazira towards its Non-Solar RPO compliance.



22. The Petitioner respectfully submits that NTPC had successfully demonstrated the co-firing of 7% blend of biomass pellets with coal in its Dadri power plant. The same can also be replicated in other coal fired power plants including power plants of the Petitioner situated at Hazira and Dahej. As per the aforementioned policy issued by Ministry of Power, approximately 2.5 to 3.0 lakh tones of Biomass pellets are required for 7% blending in a thermal power plant of 1000 MW Capacity. Hence bio-mass co-firing is required to be implemented in the State of Gujarat towards compliance of non-solar RPO and accordingly, the present Petition.

23. The Petitioner submits that with increasing environmental awareness, biomass co-firing has been adopted by power plants all over the world as a strategy to combat pollution. The Policy dated 17.11.2017 of the MoP expressly mentions that UNFCCC recognizes biomass co-firing as a carbon neutral technology for mitigation of carbon emission from coal-based power plants. It is also submitted that the Policy also highlights environmental benefits of using the said technology of Biomass pellets co-firing in coal-based power plants like eliminate/minimize burning of agro-residue and promote its use as fuel in power plants in co-firing mode; improve air quality index while creating additional income for farmers; encourage the establishment of decentralized pellets manufacturing units. Hence it is the need of hour that Petitioner is allowed to use this technology of biomass co-firing at its coal based CPPs at Dahej and Hazira and

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appropriate directives/procedures and regulations are required to be formulated by this Hon'ble Commission in this regard.

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24. The Petitioner respectfully submits that the CERC, vide its Order dated 18.02.2020 in Suo Moto Petition No. 12/SM/2019 had formulated the methodology for estimation of electricity generated from biomass in biomass co-fired thermal power plants. The CERC, in the said Order, had observed that Auxiliary Energy Consumption (AEC) is worked out on the basis of using Special Energy Meter (SEM) installed on generator terminal by the generators and Regional Power Committee in constitution with respective regional Load Dispatch Centre or State Load Dispatch Centre shall ensure that the SEMs installed by the generator should get calibrated from time to time for energy accounting and for this purpose captive power plant and co-generation plant shall ensure appropriate metering arrangement at generator terminal. The CERC further directed that the generating Company shall maintain separate fuel accounts for coal and bio mass with opening balance and closing balance in kg and also maintain separate GCV (in kCal/kg) accounts for coal and bio-mass duly signed by the authorized official of the generating company and is also required to publish the quantum of bio-mass fired and the energy generated from bio-mass based on formulae specified therein. The Petitioner states that it is submitting month wise details of biomass co-fired and power generated from such co-firing as per the methodology notified by CERC. It is further submitted that this Hon'ble Commission is required to take into consideration bio-mass cofired at Petitioners Dahej and Hazira coal based captive power plants for compliance towards its non-solar RPO. This Hon'ble Commission may be

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pleased to adopt/notify procedure in this regard on the lines similar to the aforesaid CERC Order.

25. The Petitioner submits that the GERC RPO Regulations inter-alia provide that the Captive Power Producers can fulfill RPO obligations through Renewable Energy Certificates or through consumption of Renewable power including power generated through firing of biomass. Regulation 8 is reproduced herein below for ready reference: -

8. Captive and Open Access User(s)/ Consumer(s)

8.1 The quantum of RPO mentioned in clause 4.1 shall be applicable to captive and open access user(s)/ consumer(s) from the date as would be notified in the Official Gazette.

8.2 Every Captive and Open access consumer(s)/ user(s) shall have to submit necessary details regarding total consumption of electricity and purchase of energy from renewable sources for fulfillment of RPO on yearly basis on or before 30th April to the State Agency.

8.3 Captive and Open Access Consumer(s)/ User(s) shall purchase renewable energy as stated in Table 1 of these Regulations. If the Captive user(s) and Open Access consumer(s) are unable to fulfil the criteria, the shortfall of the targeted quantum would attract payment of regulatory charge as per clause 9.

8.4 Captive/ Open Access consumer(s)/ User(s) may fulfil its RPO through the renewable energy certificate as provided in clause 5 above.

The Petitioner is an obligated entity and is required to fulfil its RPO and same can be done by giving effect to co-firing of bio-mass in its coal based Captive Power Plants situated at Dahej and Hazira.

26. It is pertinent to note that this Hon'ble Commission, vide its Order dated 09.02.2018 had directed the biomass developers to submit the Information on monthly consumption of each biomass at the beginning of each quarter to nodal agency and Discom(s) with whom PPA has been signed and the said information should be duly signed by Comptroller and Auditor General empanelled Chartered

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Accountant. Accordingly, the Petitioner is submitting month wise details of biomass co-fired according to the methodology which is notified by CERC. The Petitioner prays that this Hon'ble Commission may lay down directives/procedure and direct the Respondent GEDA to monitor co-firing of biomass by the Petitioner towards compliance of its non-solar RPO.

27. The Petitioner craves leave to add, alter, amend the grounds as stated in the Petition, as and when necessary.

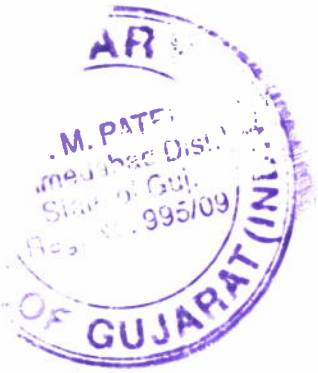
PRAYER CLAUSE: -

28. In the aforementioned facts and circumstances, the Petitioner most respectfully prays:

- A. That this Hon'ble Commission be pleased to approve the co-firing of bio-mass of Petitioner at its Coal based Captive Power Plants situated at Dahej Manufacturing Division and Hazira Manufacturing Division towards compliance of its non-solar RPO from February, 2021 onwards;
- B. That this Hon'ble Commission be pleased to issue necessary directives/Procedures to Gujarat Energy Development Agency, the nodal agency to consider power generated from co-fired biomass towards compliance of its non-solar Renewable Purchase Obligation (RPO);
- C. That this Hon'ble Commission be pleased to implement the procedure as per Order dated 18.02.2020 passed by Central Electricity Regulatory Commission in the State of Gujarat.

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- D. That this Hon'ble Commission be pleased to consider power generated from cofiring of Biomass towards compliance of petitioners Solar RPO after fulfillment of Non-Solar RPO.
- E. Any other order this Hon'ble Commission may deem fit in the matter.

DECLARATION

The subject matter of the Petition has not been raised by the Petitioner before any other competent forum and that no other competent forum is currently seized of the matter or has passed any orders in relation thereto.

Place: Ahmedabad
Date: 27/09/2021

Nisarg Desai
For Nanavati Associates
Advocates for Petitioner

for petitioner





**BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY
COMMISSION, GANDHINAGAR**

PETITION NO. OF 2021

IN THE MATTER OF: Petition under Section 86 read with Sections 62
 & 181 of the Electricity Act, 2003.

AND

IN THE MATTER OF: Regulation 12 of GERC (Procurement of
 Renewable Energy from Renewable Energy
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 Regulatory Commission (Procurement of energy
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AND

IN THE MATTER OF: Gujarat Electricity Regulatory Commission
 (Procurement of energy from Renewable Sources)
 (First Amendment) Regulations, 2014.

AND

IN THE MATTER OF: Gujarat Electricity Regulatory Commission
 (Procurement of energy from Renewable Sources)
 (Second Amendment) Regulations, 2018.

AND

IN THE MATTER OF: Petition for issuing necessary directives to
 Gujarat Energy Development Agency to consider
 power generated from co-fired biomass towards
 compliance of non-solar Renewable Purchase
 obligation.

AND

IN THE MATTER OF:

Reliance Industries Limited
Having its Office at: "Vraj",
Off. Sindhu Bhavan Road,
Opp. Kadamb Villa Bungalow,
Besides Orion Ceremonial Lawns,

Prasid



Bodakdev, Ahmedabad – 380054.

... Petitioner

Versus

Gujarat Energy Development Agency
4th Floor, Block No. 11&12,
Udyog Bhavan, Sector – 11,
Gandhinagar – 382 017.

... Respondent

AFFIDAVIT VERIFYING THE PETITION

1. I, Ashish Shah S/o. Balchandra Shah, Adult, residing at Ahmedabad, do solemnly affirm and say as follows:-
2. I am a General Manager of Reliance Industries Limited, the Petitioner Company herein and I have read the Petition pertaining to the above case and I am competent and duly authorized by the Petitioner Company to make this Affidavit.

Solemnly Affirmed at Ahmedabad on this 27th day of September, 2021, that the contents of the above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed therefrom.

Place: Ahmedabad
Date: 27.09.2021

IDENTIFIED BY ME

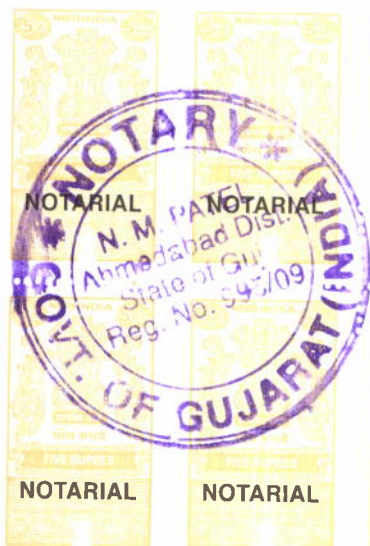
ADVOCATE/CLERK

SR. NO. 1101 2021
SOLEMNLY AFFIRMED
BEFORE ME

N. M. Patel
N. M. PATEL NOTARY
DATE: 27-9-21

For, Reliance Industries Ltd.

Ashish Shah
Authorized Signatory
Deponent



ANNEXURE : A

Extra No. 273

REGISTERED No. G/GNR/2 18



सत्यमेव जयते

The Gujarat Government Gazette

EXTRAORDINARY

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Separate paging is given to this Part in order that it may be filed as a Separate Compilation.

PART IV-C

Statutory Rules and Orders (Other than those published in Parts I, I-A and I-L) made by Statutory Authorities other than the Government of Gujarat including those made by the Government of India, the High Courts, the Director of Municipalities, the Commissioner of Police, the Director of Prohibition and Excise, the District Magistrates and the Election Commission, Election Tribunals, Returning Officers and other authorities under the Election Commission.

GUJARAT ELECTRICITY REGULATORY COMMISSION (GERC)

Procurement of Energy from Renewable Sources

Notification No. 3 of 2010

In exercise of the powers conferred under sections 61, 66, 86 (1)(e) and 181 of the Electricity Act 2003 (36 of 2003) and all powers enabling it in that behalf, Gujarat Electricity Regulatory Commission hereby makes the following Regulations for promoting the sale of power from renewable energy sources to any person and for procurement of energy from renewable sources by distribution licensee within the State of Gujarat.

1. Short Title, Extent and Commencement

- These Regulations shall be called the Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010.
- These Regulations extend to the whole of the State of Gujarat.
- These Regulations, excluding clause 8 shall come into force on the date of their publication in the Gazette.
- Clause 8 of these Regulations shall come into force from a date to be notified by the Commission separately.

2. Definitions and Interpretation

2.1 In these Regulations, unless the context otherwise requires –

- 'Act' means the Electricity Act, 2003 (Act 36 of 2003);
- 'Area of Supply' means the area within which a distribution licensee is authorized to supply electricity;
- 'Central Agency' means the agency operating the National Load Dispatch Centre or such other agency as the Central Commission may designate from time to time;

- (d) 'Central Commission' means the Central Electricity Regulatory Commission referred to in subsection (1) of section 76 of the Act;
- (e) 'Certificate' means the renewable energy certificate issued by the Central Agency in accordance with the procedures laid down by it and under the provisions specified in the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010;
- (f) 'Commission' means Gujarat Electricity Regulatory Commission;
- (g) 'Distribution Licensee' means a licensee authorized to operate and maintain a distribution system for supplying electricity to the consumers in his area of supply;
- (h) 'Floor price' means the minimum price as determined by the Central Electricity Regulatory Commission in accordance with its (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 at and above which the certificate can be dealt in the power exchange;
- (i) 'Forbearance price' means the ceiling price as determined by the Central Electricity Regulatory Commission in accordance with its (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 within which only the certificates can be dealt in the power exchange;
- (j) 'MNRE' means the Ministry of New and Renewable Energy;
- (k) 'Obligated entity' means the entity mandated under clause (e) of subsection (1) of section 86 of the Act to fulfil the renewable purchase obligation and identified under clause 3 of these Regulations;
- (l) 'Person' shall include any company or body corporate or association or body of individuals, whether incorporated or not, or artificial juridical person;
- (m) 'Power Exchange' means any exchange operating as the power exchange for electricity in terms of the orders issued by the Central Commission;
- (n) 'Preferential tariff' means the tariff fixed by the Commission for sale of energy from a generating station based on renewable energy sources to a distribution licensee;
- (o) 'Quantum of purchase' means percentage share of total purchase of electricity from renewable energy sources as specified in these Regulations. The quantum would be the sum of all direct purchases from generating stations based on renewable energy sources and purchase from any other licensee, which would arise from renewable energy sources;
- (p) 'Renewable energy sources' in this context means nonconventional, renewable electricity generating sources such as mini/ micro hydel, wind, solar, biomass and bagasse based cogeneration, urban/municipal waste, or such other sources, (which are generally inexhaustible and can be replenished in a short period of time) as approved by the Ministry of New and Renewable Energy, Government of India or by the State of Gujarat;
- (q) 'State' means the state of Gujarat;
- (r) 'State agency' means the agency in the State of Gujarat to be designated by the Commission to act as the agency for accreditation and recommending the renewable energy projects for registration and to undertake functions under these Regulations;
- (s) 'Supply', in relation to electricity, means the sale of electricity to a licensee or consumer;
- (t) 'Year' means a financial year.

Words and expressions used and not defined in these Regulations but defined in the Act shall have the meanings assigned to them in the Act. Expressions used herein but not specifically defined in these Regulations or in the Act but defined under any law passed by a competent legislature and applicable to the electricity industry in the state shall have the meaning assigned to them by such law. Expressions used herein but not specifically defined in the Regulations or in the Acts or any law passed by a competent legislature shall have the meaning as is generally assigned in the electricity industry.

2.2 Interpretation

For the interpretation of these Regulations, unless the context otherwise requires:

- a. words in the singular or plural term, as the case may be, shall also be deemed to include the plural or the singular term, respectively;
- b. the terms "include" or "including" shall be deemed to be followed by "without limitation" or "but not limited to" regardless of whether such terms are followed by such phrases or words of like import;
- c. references herein to the "Regulations" shall be construed as a reference to these Regulations as amended or modified by the Commission from time to time in accordance with the applicable laws in force;
- d. the headings are inserted for convenience and may not be taken into account for the purpose of interpretation of these Regulations;
- e. references to the statutes, Regulations or guidelines shall be construed as including all statutory provisions consolidating, amending or replacing such statutes, Regulations or guidelines, as the case may be, referred to.

3. Applicability of Renewable Purchase Obligation

These Regulations shall apply to:

- (1) Distribution licensee
- (2) Any other person consuming electricity (i) generated from conventional Captive Generating Plant having capacity of 5 MW and above for his own use and / or (ii) procured from conventional generation through open access and third party sale.

4. Quantum of Renewable Purchase Obligation (RPO)

- 4.1 Each distribution licensee shall purchase electricity (in kWh) from renewable energy sources, at a defined minimum percentage of the total consumption of its consumers including T&D losses during a year. Similarly, Captive and Open Access user(s) / consumer(s) shall purchase electricity (in kWh) from renewable energy sources, at a defined minimum percentage of his/her total consumption during a year.

The defined minimum percentages are given below in the Table 1.

Table 1

Year	Minimum Quantum of purchase (in %) from renewable energy sources (in terms of energy in kWh)			
(1)	Total (2)	Wind (3)	Solar (4)	Biomass, bagasse and others (5)
2010-11	5%	4.5%	0.25%	0.25%
2011-12	6%	5.0%	0.5%	0.5%
2012-13	7%	5.5%	1.0%	0.5%

If the above mentioned minimum quantum of power purchase from solar and other renewable energy sources is not available in a particular year, then in such cases, additional wind or other energy, over and above that shown in column 3 and 5, shall be utilized for fulfillment of the RPO in accordance with column 2.

Provided further that such obligation to purchase renewable energy shall be inclusive of the purchases, if any, from renewable energy sources already being made by the obligated entity concerned:

Provided also that the power purchases under the power purchase agreements for the purchase of renewable energy sources already entered into by the distribution licensees shall continue to be made till their present validity, even if the total purchases under such agreements exceed the percentage as specified hereinabove.

4.2 The Commission may, *suo-motu* or at the request of a licensee, revise the percentage targets for a year as per clause 4.1 of these Regulations keeping in view supply constraints or other factors beyond the control of the licensee.

4.3 For the FY 2009-10, the RPO specified for the years 2008-09, vide Commission's Notification No.15 of 2005 shall be applicable.

4.4 The RPO specified for the Financial Year 2012-13 shall be continued beyond 2012-13 till any revision is effected by the Commission in this regard.

5. **Certificates under the Regulations of the Central Commission**

5.1 Subject to the terms and conditions contained in these Regulations, the Certificates issued under the Central Electricity Regulatory Commission's (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 shall be 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.

Provided that in the event of the obligated entity fulfilling the renewable purchase obligation by purchase of certificates, the obligation to purchase electricity from generation based on renewable energy other than solar can be fulfilled by purchase of non-solar certificates and the obligation to purchase electricity from generation based on solar as renewable energy source can be fulfilled by purchase of solar certificates only. If solar certificates are not available in a particular year, then in such cases, additional non-solar certificates shall be purchased for fulfillment of the RPO in accordance with Table 1.

5.2 Subject to such direction as the Commission may give from time to time, the obligated entity shall act consistent with the Central Electricity Regulatory Commission's (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010 notified by the Central Electricity Regulatory Commission with regards to the procurement of the certificates for fulfillment of the Renewable Purchase Obligation under these Regulations.

5.3 The Certificates purchased by the obligated entities from the power exchange in terms of the regulation of the Central Commission mentioned in clause 5.1 of these Regulations shall be deposited by the obligated entities with the Commission within 15 days of the purchase.

6. **State Agency**

a) The Commission shall designate an agency as the State Agency for accreditation and recommending the renewable energy projects for registration and to undertake functions under these Regulations.

b) The State Agency shall function in accordance with the directions issued by the Commission and shall act in accordance with the provisions of the Central Electricity Regulatory Commission (Terms and Conditions for recognition and issuance of Renewable Energy Certificate for Renewable Energy Generation) Regulations, 2010.

c) The State Agency shall submit quarterly status to the Commission in respect of compliance of renewable purchase obligation by the obligated entities in the format as stipulated by the Commission and may suggest appropriate action to the Commission, if required, for compliance of the renewable purchase obligation.

d) The Commission may from time to time fix the remuneration and charges payable to the State Agency for discharge of its functions under these Regulations.

7. **Distribution Licensee**

7.1 Each distribution licensee shall indicate, along with sufficient proof thereof, the estimated quantum of purchase from renewable energy sources for the ensuing year in tariff/ annual performance review petition in accordance with Regulations notified by the Commission. The estimated quantum of purchase shall be in accordance with clause 4.1 of these Regulations of the approved power purchase quantity for the ensuing year(s). In the event of the actual consumption in the license area being different from that approved by the Commission, the RPO shall be deemed to have been modified in

accordance with clause 4.1. If the distribution licensee is unable to fulfil the obligation, the shortfall of the specified quantum of that year would be added to the specified quantum for the next year. However, credit for excess purchase from renewable energy sources would not be adjusted in the ensuing year.

- 7.2 Despite availability of renewable energy sources, if the distribution licensee fails to fulfil the minimum quantum of purchase from renewable energy sources, it shall be liable to pay compensation as per clause 9 of these Regulations.

8. Captive and Open Access User(s)/ Consumer(s)

- 8.1 The quantum of RPO mentioned in clause 4.1 shall be applicable to captive and open access user(s)/ consumer(s) from the date as would be notified in the Official Gazette.

- 8.2 Every Captive and Open access consumer(s)/ user(s) shall have to submit necessary details regarding total consumption of electricity and purchase of energy from renewable sources for fulfillment of RPO on yearly basis on or before 30th April to the State Agency.

- 8.3 Captive and Open Access Consumer(s)/ User(s) shall purchase renewable energy as stated in Table 1 of these Regulations. If the Captive user(s) and Open Access consumer(s) are unable to fulfil the criteria, the shortfall of the targeted quantum would attract payment of regulatory charge as per clause 9.

- 8.4 Captive/ Open Access consumer(s)/ User(s) may fulfil its RPO through the renewable energy certificate as provided in clause 5 above.

9. Consequences of default

- 9.1 If an obligated entity does not fulfil the renewable purchase obligation as provided in these Regulations during any year and also does not purchase the certificates, the Commission may direct the obligated entity to deposit into a separate fund, to be created and maintained by such obligated entity, such amount as the Commission may determine on the basis of the shortfall in units of RPO and the forbearance price decided by the Central Commission:

Provided that the fund so created shall be utilised, as may be directed by the Commission, partly for purchase of the certificates and partly for development of transmission infrastructure for evacuation of power from generating stations based on renewable energy sources.

Provided that the obligated entities shall not be authorized to use the fund created in pursuance of the above, without prior approval of the Commission;

Provided further that the Commission may empower an officer of the State Agency to procure from the Power Exchange the required number of certificates to the extent of the shortfall in the fulfillment of the obligations, out of the amount in the fund:

Provided also that the distribution licensee shall be in breach of its license condition if it fails to deposit the amount directed by the Commission within 15 days of the communication of the direction.

Provided that in case of any genuine difficulty in complying with the renewable purchase obligation because of non-availability of power from renewable energy sources or the RECs, the obligated entity can approach the Commission to carry forward the compliance requirement to the next year:

Provided further that where the Commission has consented to carry forward of compliance requirement, the provision regarding payment of regulatory charges as specified above shall not be applicable.

10. Grid Connectivity

- 10.1 Any person generating electricity from renewable energy sources, irrespective of installed capacity, shall have open access to any Licensee's transmission system and/or distribution system or grid as the case may be. On an application from such person, the transmission licensee or distribution licensee shall provide appropriate interconnection facilities, as far as feasible, before Commercial Operation Date of the renewable energy project. Such interconnection shall follow the grid connectivity Standards as specified in the Indian Standard Grid Code, State Grid Code and/or the manner prescribed by the Central Electricity Authority.

The STU/SLDC/Licensee shall make best efforts to strengthen the system to provide timely open access to transmit power from renewable energy sources.

11. Cross-Subsidy

Third Party Sale from renewable energy sources shall be exempted from the cross-subsidy surcharge determined by the Commission from time to time. However, no banking facility shall be provided for supply (third party sale) from renewable energy sources through open access. Further, ABT compatible interface metering system capable of energy accounting for each block of 15 minutes shall be provided at both supply as well and drawal point.

For third party sale, energy generation from renewable energy sources in each 15 minute time block shall be set off against the captive/ open access user(s) consumption in the same 15 minute time block.

12. Power to remove difficulties

12.1 The Commission shall *suo motu* or on an application from any person generating electricity from renewable energy sources or a distribution licensee or captive user or open access consumer may review, add, amend or alter these Regulations and pass appropriate orders to remove any difficulty in exercising the provisions of these Regulations.

13. Repeal

13.1 The previous Regulation No.15 of 2005 dt. 29th October, 2005 is hereby repealed.

Place : Ahmedabad
Date : 17 April, 2010.

Sd/-
SANJAY NANDAN AGRAWAL
SECRETARY
Gujarat Electricity Regulatory Commission.

ગુજરાત વિદ્યુત નિયંત્રક આયોગ

નવીનીકરણપાત્ર સાધનોમાંથી વીજળીની પ્રાપ્તિ ૨૦૧૦ના જાહેરનામા નં. ૩/૨૦૧૦

૨૦૦૩ ના વીજળી અધિનિયમ ૨૦૦૩નો અધિનિયમ ૩૬) ની કલમ ૬૧, ૬૬, ૮૬, (૧) (ઈ) અને ૧૮૧ અન્વયે મળેલી સત્તાઓ અને તે અંગે તેને શક્તિમાન બતાવતી તમામ સત્તાઓની રૂએ ગુજરાત વિદ્યુત નિયંત્રક આયોગ, નવીનીકરણપાત્ર વીજળી સાધનોમાંથી પ્રાપ્ત વીજળીનું કોઈપણ વ્યક્તિ વેચાણ કરવા પ્રોત્સાહન આપવા અને ગુજરાત રાજ્યની અંદર વિતરણ પરવાનેદાર દ્વારા નવીનીકરણપાત્ર સાધનોમાંથી વીજળી પ્રાપ્ત કરવા અંગેના નીચેના વિનિયમો અહીં કરે છે.

૧. ટૂંકું શીર્ષક, વ્યાપ અને પ્રારંભ :

(૧) આ વિનિયમો ગુજરાત વિદ્યુત નિયંત્રક આયોગ (નવીનીકરણપાત્ર) સાધનોમાંથી વીજળી પ્રાપ્તિ), વિનિયમો ૨૦૧૦ કહેવાશે.

(૨) આ વિનિયમો સમગ્ર ગુજરાત રાજ્ય સુધી વ્યાપ્ત છે.

(૩) આ વિનિયમો ખંડ ૩ ને બાદ કરતાં રાજપત્રમાં તેથી પ્રસિધ્ધ થાય તે તારીખથી અમલમાં આવશે.

(૪) આ વિનિયમોનો ખંડ-૮ આયોગ અલગ રીતે જાહેર કરે તે તારીખથી અમલમાં આવશે.

૨. વ્યાખ્યા અને અર્થઘટન :

૨.૧ આ વિનિયમોમાં સંદર્ભથી અન્યથા જરૂરી હોય તે સિવાય : -

(ક) “અધિનિયમ” એટલે ૨૦૦૩ નો વીજળી અધિનિયમ (૨૦૦૩ નો ૩૬ મો અધિનિયમ)

(ખ) “પુરવઠા વિસ્તાર” એટલે વિતરણ પરવાનેદાર જ્યાં વીજળી પૂરી પાડવા અધિકૃત હોય તે વિસ્તાર

(ગ) “કેન્દ્રીય સંસ્થા” એટલે રાષ્ટ્રીય વીજભાર રવાનગી કેન્દ્રનું સંચાલન કરતી સંસ્થા અથવા કેન્દ્રીય આયોગ વખતોવખત નિર્દિષ્ટ કરે તેવી અન્ય સંસ્થા.

- (ધ) “કેન્દ્રીય આયોગ” એટલે અધિનિયમની કલમ-૭૬ની પેટા કલમ (૧) માં ઉલ્લેખ કરેલ કેન્દ્રીય વીજળી નિયંત્રણ આયોગ
- (ચ) “પ્રમાણપત્ર” એટલે કેન્દ્રીય સંસ્થા દ્વારા ઠરાવેલ કાર્યપદ્ધતિ અનુસાર અને કેન્દ્રીય વીજળી નિયંત્રણ આયોગ (નવીકરણપાત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્ર માન્ય કરીને આપવા અંગેની શરતો) વિનિયમો, ૨૦૧૦ માં નિર્દિષ્ટ જોગવાઈઓ અન્વયે સંસ્થાએ આપેલ નવીકરણપાત્ર વીજળી પ્રમાણ પત્ર
- (છ) “આયોગ” એટલે ગુજરાત વિદ્યુત નિયંત્રક આયોગ
- (જ) “વિતરણ પરવાનેદાર” એટલે તેના પુરવઠાના વિસ્તારમાં ગ્રાહકોને વીજળી પૂરી પાડવાની વિતરણ વ્યવસ્થાના સંચાલન અને જાળવણી કરવા અધિકૃત પરવાનેદાર
- (ઝ) “તળિયાના ભાવ” એટલે કેન્દ્રીય વીજળી નિયંત્રણ આયોગ દ્વારા તેના (નવીકરણપાત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્રની માન્યતાને તે આપવા અંગેની શરતો) ૨૦૧૦ના વિનિયમો અનુસાર નક્કી કરાવેલ ન્યૂનતમ ભાવ, જે અન્વયે પ્રમાણપત્ર વીજળી વિનિયમોમાં હાથ ધરી શકાશે.
- (ઞ) “ફોરબેરન્સ પ્રાઈઝ” એટલે કેન્દ્રીય વીજળી નિયંત્રણ આયોગ, તેના ૨૦૧૦ના વિનિયમો અનુસાર (નવીકરણપાત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્રની માન્યતા અને તે આપવા અંગેની શરતો) જે અન્વયે વીજળી વિનિયમો અનુસાર નક્કી કરવામાં આવે તે ટોચના ભાવ. જે અંતર્ગત માત્ર પ્રમાણપત્રો વીજળી વિનિયમ અંગે હાથ ધરી શકાશે.
- (ઠ) MNRE એટલે નવીન અને નવીકરણપાત્ર ઊર્જા મંત્રાલય
- (ડ) “જવાબદાર હસ્તિ” એટલે અધિનિયમની કલમ-૮૬ની પેટા કલમ(૧) ના ખંડ (ઈ) અન્વયે નવીકરણપાત્ર વીજળી ખરીદીની જવાબદારી પરિપૂર્ણ કરવા આદેશ અપાયેલ અને આ વિનિયમોના ખંડ-૩ અન્વયે મુકરર કરેલ હસ્તિ
- (ઢ) “વ્યક્તિ” માં સંસ્થાપિત હોય ન હોય, તેવી કોઈપણ કંપની, કોર્પોરેટ સંસ્થા કે એસોસિએશન કે વ્યક્તિઓની સંસ્થા અથવા કૃત્રિમ અદાવતી વ્યક્તિ
- (ણ) “વીજળી વિનિયમ” એટલે કેન્દ્રીય આયોગે ઇશ્યૂ કરેલા આદેશોના સંદર્ભમાં વીજળી માટે વીજળી વિનિયમ તરીકે સંચાલિત કોઈપણ વિનિયમ (એક્સચેન્જ),
- (ત) “અગ્રાધિકાર પ્રશુલ્ક” એટલે નવીકરણપાત્ર વીજળી પર આધારિત વીજ મથકમાંથી વીજળીનું વિતરણ પરવાનેદારો વેચાણ કરવા આયોગે નક્કી કરેલ પ્રશુલ્ક,
- (થ) “ખરીદીનો જથ્થો” એટલે આ વિનિયમોમાં નિર્દિષ્ટ કર્યા પ્રમાણે નવીકરણપાત્ર વીજળી સાધનોમાંથી વીજળીની કુલ ખરીદીનો ટકાવારી હિસ્સો જથ્થો એટલે નવીકરણપાત્ર વીજળી સાધનો પર આધારિત વીજ-મથકોમાંથી તમામ સીધી ખરીદી અને નવીકરણપાત્ર વીજળી સાધનોમાંથી ઉત્પન્ન અન્ય કોઈપણ પરવાનેદાર પાસેથી કરેલી ખરીદીનો સરવાળો થશે.
- (દ) આ સંદર્ભમાં “ નવીકરણપાત્ર વીજળી સાધનો” એટલે બિનપરંપરાગત, નવીકરણપાત્ર વીજળી ઉત્પાદન સાધનો, જેમકે મીની માઈક્રો હાઈડલ, પવન, સૌર્ય, બાયોમાસ અને બાયોગેસ આધારિત સહ-ઉત્પાદન, શહેરી/મ્યુનિસિપલ કચરો અથવા આ બીજાં સાધનો (જે સામાન્ય રીતે) જે વપરાઈ જતાં નથી અને ટૂંકા સમયમાં ફરીથી ભરાઈ જાય છે તેવાં નવીન અને નવીકરણપાત્ર ઊર્જા મંત્રાલય, ભારત સરકાર અથવા ગુજરાત રાજ્ય દ્વારા મંજૂર કર્યા મુજબનાં સાધનો :
- (ધ) “રાજ્ય” એટલે ગુજરાત રાજ્ય
- (ભ) “રાજ્ય સંસ્થા” એટલે નવીકરણપાત્ર વીજળી પરિયોજનાઓમાંથી નોંધણી માટે માન્યતા આપવા અને ભલામણ કરવા અને વિનિયમો હેઠળ કાર્યો હાથ ધરવાં સંસ્થા તરીકે કામ કરવા આયોગ દ્વારા નામ નિર્દિષ્ટ ગુજરાત રાજ્યની સંસ્થા,
- (પ) વીજળીના સંબંધમાં “પુરવઠા” એટલે પરવાનેદાર કે ગ્રાહકને વીજળીનું વેચાણ
- (ફ) “વર્ષ” એટલે નાણાંકીય વર્ષ.

આ વિનિયમોમાં વપરાયેલ અને વ્યાખ્યા ન અપાયેલ, પરંતુ અધિનિયમમાં વ્યાખ્યા અપાયેલ શબ્દો અને શબ્દપ્રયોગોને અર્થ અધિનિયમોમાં તેને માટે નિર્દિષ્ટ કરાયેલ અર્થ રહેશે. અહીં વપરાયેલ પરંતુ વિનિયમો કે અધિનિયમોમાં વ્યાખ્યાની ન અપાયેલ પરંતુ સક્ષમ વિધાનસભા દ્વારા પસાર કરાયેલ કોઈપણ કાયદા હેઠળ વ્યાખ્યા કરાયેલ અને રાજ્યમાં વીજળી ઉદ્યોગને લાગુ પડતા શબ્દપ્રયોગોનો અર્થ આવા કાયદામાં નિર્દિષ્ટ કરાયા મુજબનો અર્થ રહેશે. અહીં વપરાયેલ પરંતુ

વિનિયમો કે અધિનિયમો કે સક્ષમ વિધાનસભાએ પસાર કરેલ કાયદામાં ખાસ વ્યાખ્યા ન અપાઈ હોય તેવા શબ્દપ્રયોગોનો અર્થ, વીજળી ઉદ્યોગના સામાન્ય તથા નિર્દિષ્ટ હોય તે મુજબનો રહેશે.

૨.૨ અર્થઘટન :

સંદર્ભથી અન્યથા જરૂરી હોય તે સિવાય આ વિનિયમોનું અર્થઘટન નીચે પ્રમાણે થશે.

- ક યથાપ્રસંગ એકવચન કે બહુવચન શબ્દોમાં, અનુક્રમે બહુવચન કે એકવચન શબ્દોનો સમાવેશ થતો હોવાનું ગણવામાં આવશે.
- ખ “સમાવિષ્ટ” અથવા “સહિત” શબ્દો, આવા શબ્દો પછી આયાત જેવા શબ્દો કે વાક્યાંશો આવે કે કેમ તે લક્ષમાં લીધા વિના “મર્યાદા રહિત” અથવા “તેટલા પૂરતું મર્યાદિત નથી” એમ આવતા હોવાનું ગણવામાં આવશે.
- ગ “વિનિયમો” ને લગતા અહીં આપેલા સંદર્ભોના અર્થ, અમલમાં હોય તે કાયદા અનુસાર આયોગ દ્વારા વખતોવખત ફેરફાર કે સુધારો કરાય તે પ્રમાણે આ વિનિયમોને લગતા સંદર્ભ તરીકે કરવામાં આવશે.
- ઘ શીર્ષકો અનુકૂળતા માટે આપ્યા છે અને તેને આ વિનિયમોના અર્થઘટનના હેતુ માટે વિચારણામાં લઈ શકાશે નહીં.
- ચ કાનૂનો, વિનિયમો કે માર્ગદર્શક સૂચનાઓને લગતા સંદર્ભો, યથાપ્રસંગ આવા કાનૂનો, વિનિયમો કે માર્ગદર્શક સૂચનાઓને એકત્રિત કરતી, સુધારણા કરતી કે ફેરબદલી કરવી વૈધાનિક જોગવાઈઓનો સમાવેશ કરતા હોવાનું ગણાશે.

૩. નવીકરણપાત્ર ખરીદી જવાબદારીની પ્રયોજ્યતા :

આ વિનિયમો લાગુ પડશે.

(૧) વિતરણ પરવાનેદાર

- (૨) (૧) પ મે.વો. અને તેથી વધુ ક્ષમતા ધરાવતા પરંપરાગત કેપ્ટિવ વીજ ઉત્પાદન પ્લાન્ટમાંથી તેના પોતાના ઉપયોગ માટે ઉત્પાદિત અને/અથવા (૨) ખુલ્લા પ્રવેશથી અને ત્રીજા પક્ષકારના વેચાણ મારફત પરંપરાગત વીજ ઉત્પાદનમાંથી મેળવેલ વીજળીનો વપરાશ કરનાર બીજી કોઈપણ વ્યક્તિ

૪. નવીકરણપાત્ર વીજળી ખરીદીના જથ્થાની જવાબદારી :

- ૪.૧ દરેક વિતરણ પરવાનેદાર, વર્ષ દરમિયાન પ્રવાહન અને વિતરણ ઘટ સહિત તેના વપરાશકારોના કુલ વપરાશથી નિયત ન્યૂનતમ ટકાવારીએ, નવીકરણપાત્ર ઉર્જા સાધનોમાંથી વીજળી (કિ. વો. કલાકમાં) ની ખરીદી કરશે.

તે જ પ્રમાણે, કેપ્ટિવ અને ખુલ્લા પ્રવેશના વપરાશકર્તા(ઓ)/ગ્રાહકો વર્ષ દરમિયાન તેની/તેણીની નિયત ન્યૂનતમ ટકાવારીએ નવીકરણપાત્ર ઉર્જા સાધનોમાંથી વીજળીની (કિ. વો. કલાકમાં) ખરીદી કરશે.

નિયત ન્યૂનતમ ટકાવારી કોઠા -૧ માં નીચે દર્શાવી છે.

કોઠો-૧

વર્ષ	નવીકરણપાત્ર ઉર્જા સાધનોમાંથી ખરીદીને (૦ % માં) ન્યૂનતમ જથ્થો (કિ. વો. કલાકમાં) વીજળીના સંદર્ભમાં			
	કુલ	પવન	સૌર્ય	બાયોમાસ, બાયોગેસ અને અન્ય
૧.	૨.	૩.	૪.	૫.
૨૦૧૦-૧૧	૫ %	૪.૫ %	૦.૨૫ %	૦.૨૫ %
૨૦૧૧-૧૨	૬ %	૫.૦ %	૦.૫ %	૦.૫ %
૨૦૧૨-૧૩	૭ %	૫.૫ %	૧.૦ %	૦.૫ %

ચોક્કસ વર્ષમાં સૌર્ય અને અન્ય નવીકરણપાત્ર ઉર્જા સાધનોમાંથી ખરીદીનો ઉપર્યુક્ત ન્યૂનતમ જથ્થો ન મળી શકે તો પછી આવા કેસોમાં ખાના ૩ અને ૫ માં દર્શાવ્યા ઉપરાંત વધારાની પવન કે અન્ય ઉર્જાનો ખાના-૨ અનુસાર નવીકરણપાત્ર ખરીદીની જવાબદારી પરિપૂર્ણ કરવા ઉપયોગમાં લેવાશે.

પરંતુ આવી નવીકરણપાત્ર વીજળી ખરીદવાની જવાબદારીમાં સંબંધિત જવાબદારીવાળી હસ્તિ દ્વારા નવીકરણપાત્ર વીજળી સાધનોમાંથી કોઈ ખરીદી કરાય તો તેનો સમાવેશ થશે.

પરંતુ, વિતરણ પરવાનેદારોએ, નવીનીકરણપાત્ર વીજળી સાધનોથી ખરીદી માટે કરેલ વીજ ખરીદી સમજૂતિઓ અન્વયે વીજળીની ખરીદી, તેની વર્તમાન કાયદેસરતા રહે ત્યાં સુધી, આવી સમજૂતિઓ હેઠળની કુલ ખરીદી અહીં ઉપર નિર્દિષ્ટ કર્યા મુજબની ટકાવારી કરતાં વધી જાય તો પણ ચાલુ રહેશે.

૪.૨ આયોગ પરવાનેદારની વિનંતીથી આયોગ, સ્વયં, પુરવઠા અવરોધો તથા પરવાનેદારના કાબૂ બહારના અન્ય પરિબળો ધ્યાનમાં રાખીને આ વિનિયમોના ખંડ ૪.૧ અનુસાર વર્ષ માટે ટકાવારીના લક્ષ્યાંકમાં ફેરફાર કરી શકશે.

૪.૩ ૨૦૦૮-૧૦ ના નાણાકીય વર્ષ માટે આયોગના ૨૦૦૫ના જાહેરનામા નં. ૧૫ અન્વયે ૨૦૦૮-૦૯ ના વર્ષ માટે નિર્દિષ્ટ RPO લાગુ પડશે.

૪.૪ ૨૦૧૨-૧૩ના નાણાકીય વર્ષ માટે નિર્દિષ્ટ નવીકરણપાત્ર વીજ-ખરીદી જવાબદારી, આ અંગે આયોગ દ્વારા કોઈ ફેરફાર અમલમાં ન મૂકાય ત્યાં સુધી ૨૦૧૨-૧૩ પછી પણ ચાલુ રહેશે.

૫. કેન્દ્રીય આયોગ વિનિયમો અન્વયે પ્રમાણપત્ર :

૫.૧ આ વિનિયમોમાં સમાવિષ્ટ શરતોને અધીન રહીને, કેન્દ્રીય વીજળી નિયંત્રણ આયોગના (નવીકરણપાત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્રની માન્યતા અને તે આપવા અંગેની શરતો) વિનિયમો ૨૦૧૦, નવીકરણપાત્ર વીજળી સાધનોમાંથી વીજળી ખરીદવાની જવાબદાર હસ્તિઓ માટે આ વિનિયમોમાં ઠરાવેલ આદેશાત્મક જવાબદારીઓ બજાવતા, કાયદેસર દસ્તાવેજ તરીકે ગણાશે.

પરંતુ જવાબદારી ધરાવનાર હસ્તિઓ પ્રમાણપત્રોથી ખરીદી દ્વારા નવીકરણપાત્ર ખરીદીની જવાબદારી પરિપૂર્ણ કરે તેવા કેસમાં, સૌર્ય સિવાય અન્ય નવીકરણપાત્ર વીજળી પર આધારિત ઉત્પાદનમાંથી વીજળી ખરીદવાની જવાબદારી, બિન-સૌર્ય, પ્રમાણપત્રમાંથી ખરીદી દ્વારા પરિપૂર્ણ કરી શકાશે અને નવીકરણપાત્ર વીજળી સાધન તરીકે સૌર્ય પર આધારિત ઉત્પાદનમાંથી વીજળીની ખરીદી માત્ર સૌર્ય પ્રમાણપત્ર ખરીદીને જ પરિપૂર્ણ કરી શકાશે. ચોક્કસ વર્ષમાં સૌર્ય પ્રમાણપત્રો ઉપલબ્ધ ન હોય તો આવા કેસોમાં, કોઠાના-૧ અનુસાર RPO ની પરિપૂર્ણતા માટે વધારાના બિન-સૌર્ય પ્રમાણપત્રો ખરીદવામાં આવશે.

૫.૨ આયોગ વખતોવખત આપે તેવા આદેશોને અધીન રહીને, જવાબદારીવાળી હસ્તિ, આ વિનિયમો અન્વયે નવીકરણપાત્ર ખરીદી જવાબદારી પરિપૂર્ણ કરવા પ્રમાણપત્રોની પ્રાપ્તિ કેન્દ્રીય વીજળી નિયંત્રણ આયોગ દ્વારા જાહેર કરાયેલ કેન્દ્રીય વીજળી નિયંત્રણ આયોગના (નવીકરણપાત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્રની માન્યતા અને તે આપવા અંગેની શરતો) વિનિયમો, ૨૦૧૦ સાથે સુસંગત રહીને કામ કરશે.

૫.૩ આ વિનિયમોના ખંડ ૫.૧ માં દર્શાવેલ કેન્દ્રીય આયોગના વિનિયમના સંદર્ભમાં જવાબદારીવાળી હસ્તિઓએ પાવર એક્સચેન્જમાંથી ખરીદેલ પ્રમાણપત્રો, જવાબદારીવાળી હસ્તિઓ ખરીદીના ૧૫ દિવસની અંદર આયોગ પાસે અનામત મૂકશે.

૬. રાજ્ય સંસ્થા :

(ક) નવીકરણપાત્ર વીજળી પરિયોજનાઓની માન્યતા અને તેની ભલામણ કરવા અને આ વિનિયમો હેઠળ કાર્યો હાથ ધરવાં આયોગ રાજ્ય સંસ્થા તરીકે એક સંસ્થા નામ નિર્દિષ્ટ કરશે.

(ખ) રાજ્ય સંસ્થા, આયોગે આપેલા આદેશો અનુસાર કામ કરશે અને કેન્દ્રીય વીજળી નિયંત્રણ આયોગ (નવીકરણપાત્ર વીજળી ઉત્પાદન માટે નવીકરણપાત્ર વીજળી પ્રમાણપત્રની માન્યતાઓ તે આપવા અંગેની શરતો) વિનિયમો, ૨૦૧૦ ની જોગવાઈઓ અનુસાર કામ કરશે.

(ગ) રાજ્ય સંસ્થા, આયોગને, તેણે નિયત કરેલા ઢાંચામાં જવાબદારીવાળી હસ્તિ દ્વારા નવીકરણપાત્ર ખરીદી જવાબદારીના પાલન અંગેની સ્થિતિ દર ત્રણ મહિને રજૂ કરશે તથા નવીકરણપાત્ર ખરીદી જવાબદારીના પાલન માટે જરૂરી જણાય તો આયોગને યોગ્ય પગલાં સૂચવશે.

(ધ) આયોગ, આ વિનિયમો અન્વયે રાજ્ય સંસ્થાએ બજાવવાનાં કાર્યો માટે તેને ચૂકવવાપાત્ર વળતર અને ચાર્જ વખતો-વખત નક્કી કરશે.

૭. વિતરણ પરવાનેદાર :-

૭.૧ દરેક વિતરણ પરવાનેદાર, આયોગ જાહેર કરેલ વિનિયમો અનુસાર આગામી વર્ષ માટે, પ્રશુલ્ક/વાર્ષિક કામગીરી સમીક્ષા પીટિશનમાં નવીકરણપાત્ર વીજળી સાધનોમાંથી ખરીદીનો અંદાજ જથ્થો, તેની પૂરતી સાબિતી સાથે દર્શાવશે. ખરીદીનો અંદાજીત જથ્થો, આગામી વર્ષ (વર્ષો) માટે મંજૂર કરેલ વીજળી ખરીદી જથ્થાના આ વિનિયમોના ખંડ ૪.૧ અનુસાર રહેશે. લાઇસન્સના વિસ્તારમાં ખરેખરો વપરાશ, આયોગે મંજૂર કર્યો હોય તે કરતાં જુદો હોય તેવા પ્રસંગે, ખંડ ૪.૧ અનુસાર નવીકરણપાત્ર ખરીદી જવાબદારીમાં ફેરફાર કર્યો હોવાનું ગણવામાં આવશે. વિતરણ પરવાનેદાર જવાબદારી પરિપૂર્ણ કરી શકે તેમ ન હોય તો, તે વર્ષના નિર્દિષ્ટ જથ્થાની ઘટ, આગામી વર્ષના નિર્દિષ્ટ જથ્થામાં ઉમેરવામાં આવશે. આમ છતાં નવીકરણપાત્ર વીજળી સાધનોમાંથી અતિશય ખરીદીની જમા-નોંધ આગામી વર્ષમાં સમાયોજિત કરાશે નહીં.

૭.૨ નવીકરણપાત્ર વીજળી સાધનોની પ્રાપ્યતા છતાં, વિતરણ પરવાનેદાર નવીકરણપાત્ર વીજળી સાધનોમાંથી ન્યૂનતમ જથ્થાની ખરીદી પરિપૂર્ણ કરવામાં નિષ્ફળ જાય તો તે આ વિનિયમોના ખંડ-૧ અનુસાર વળતર ચૂકવવા જવાબદાર બનશે.

૮. કેપિવ અને ખુલ્લા પ્રવેશના વપરાશકર્તા(ઓ)/ગ્રાહક (ગ્રાહકો) :-

૮.૧ ખંડ ૪.૧ માં દર્શાવેલ RPO નો જથ્થો, સરકારી રાજ્યપત્રમાં જાહેર કરાય તે તારીખથી કેપિવ અને ખુલ્લા પ્રવેશના વપરાશકર્તા(ઓ)/ગ્રાહકો(કો) ને લાગુ પડશે.

૮.૨ દરેક કેપિવ અને ખુલ્લા પ્રવેશના ગ્રાહક(કો)/વપરાશકર્તા(ઓ) અને, રાજ્ય સંસ્થાને ૩૦મી એપ્રિલ કે તે પહેલાં વાર્ષિક ધોરણે, RPO ની પરિપૂર્ણતા માટે નવીકરણપાત્ર સાધનોમાંથી વીજળીની ખરીદી અને વીજળીના કુલ વપરાશની જરૂરી વિગતો રજૂ કરવાની રહેશે.

૮.૩ કેપિવ અને ખુલ્લા પ્રવેશના વપરાશકર્તા(ઓ)/ગ્રાહક(ઓ), આ વિનિયમોના કોઠા-૧માં દર્શાવ્યા પ્રમાણે નવીકરણપાત્ર વીજળીની ખરીદી કરશે. કેપિવ વપરાશકર્તા(ઓ) અને ખુલ્લા પ્રવેશના ગ્રાહક(કો) માપદંડ પરિપૂર્ણ ન કરી શકે તો, લક્ષ્યાંકિત જથ્થાની ઘટ માટે ખંડ-૧ અનુસાર નિયંત્રક ચાર્જની ચૂકવણી કરવાની રહેશે.

૮.૪ કેપિવ / ખુલ્લા પ્રવેશના વપરાશકર્તા(ઓ)/ગ્રાહક(કો) ઉપરના ખંડ-૬ માં જોગવાઈ કર્યા પ્રમાણે નવીકરણપાત્ર વીજળી પ્રમાણપત્ર મારફત તેના RPO પરિપૂર્ણ કરી શકશે.

૯. કસૂરનાં પરિણામો :-

૯.૧ જવાબદાર હસ્તિ કોઈપણ વર્ષ દરમિયાન જોગવાઈ કર્યા પ્રમાણે નવીકરણપાત્ર ખરીદી જવાબદારી પરિપૂર્ણ ન કરે અને પ્રમાણપત્રો ન ખરીદે તો આયોગ જવાબદાર હસ્તિને ફરમાવી શકે કે તેણે ઉભા કરવાના જાળવવાના અલગ ફંડમાં, આયોગ RPO ના એકમોનાં ઘટને આધારે નક્કી કરે તેટલી રકમ અને કેન્દ્રીય આયોગ દ્વારા નક્કી કરાયેલ ફોરબેરેન્સ રકમ અનામત મૂકે.

પરંતુ આ રીતે ઉભા કરેલ ફંડનો ઉપયોગ, આંશિક પ્રમાણપત્રો ખરીદવા અને આંશિક નવીકરણપાત્ર વીજળી સાધનો પર આધારિત વીજ ઉત્પાદન મથકોમાંથી વીજળી ખાલી કરવા પ્રવાહન પૂર્વજરૂરી માળખું વિકસાવવા આયોગ ફરમાશે જે મુજબ કરશે.

પરંતુ જવાબદાર હસ્તિ, આયોગની પૂર્વમંજૂરી વિના ઉપરના અનુસંધાનમાં ઉભા કરેલ ફંડનો ઉપયોગ કરવાની સત્તા રહેશે નહીં.

પરંતુ આયોગ, ફંડની રકમમાંથી જવાબદારીને પરિપૂર્ણ કરવામાં પડેલી ઘટના પ્રમાણમાં પાવર એક્સચેન્જમાંથી જોઈતી સંખ્યાનાં પ્રમાણપત્રો મેળવતા રાજ્ય સંસ્થાના અધિકારીને સત્તા આપી શકે.

પરંતુ વિતરણ પરવાનેદાર, આદેશ આપ્યાના ૧૫ દિવસની અંદર આયોગ ફરમાવેલ રકમ અનામત મૂકવામાં નિષ્ફળ જાય તો તે લાઇસન્સની શરતનો ભંગ ગણાશે.

પરંતુ નવીકરણપાત્ર વીજળી સાધનો કે REC પાસેથી વીજળી ન મળવાને કારણે નવીકરણપાત્ર ખરીદી જવાબદારીનું પાલન કરવાના કોઈ સારી મુશ્કેલી હોય તો, જવાબદાર હસ્તિ, બીજા વર્ષની પાલન જવાબદારી આગળ ખેંચવા આયોગનો સંપર્ક કરી શકશે.

પરંતુ વધુમાં, આયોગ પાલનની આવશ્યકતા આગળ ખેંચવાની સંમતિ આપી હોય ત્યાં ઉપર નિર્દિષ્ટ કરેલ નિયંત્રક ચાર્જની ચુકવણી અંગેની જવાબદારી લાગુ પડશે નહીં.

૧૦. ગ્રિડ જોડાણ :

૧૦.૧ સ્થાપિત શક્તિને લક્ષમાં લીધા વિના કોઈ વ્યક્તિ નવીકરણપાત્ર વીજળી સાધનોમાંથી વીજળી ઉત્પન્ન કરતી હોય તો તેને, યથાપ્રસંગ કોઈપણ પરવાનેદારની પ્રવાહન સિસ્ટમ અને/અથવા વિતરણ સિસ્ટમ અથવા ગ્રિડમાં ખુલ્લો પ્રવેશ મળી રહેશે. આવી વ્યક્તિ પાસેથી અરજી મળતાં, પ્રવાહન જે વિતરણ પરવાનેદાર, નવીકરણપાત્ર વીજળી પરિયોજનામાંથી વાણિજ્યત સંચાલનની તારીખ પહેલાં, શક્ય હોય તેટલા પ્રમાણમાં યોગ્ય આંતર-જોડાણ પૂરું પાડશે. આવું આંતર-જોડાણ કર્યા બાદ ભારતીય માનક ગ્રિડ સંહિતા, રાજ્ય ગ્રિડ સંહિતા અને / અથવા કેન્દ્રીય વીજળી તંત્ર દ્વારા ઠરાવેલી રીતે પ્રમાણે ગ્રિડ જોડાણ ધોરણો અનુસરવાના રહેશે.

STU/SLDC/ પરવાનેદાર, નવીકરણપાત્ર વીજળી સાધનોમાંથી વીજળીનું વહન કરવા સમયસર ખુલ્લો પ્રવેશ પૂરો પાડવા સિસ્ટમને સંગીન કરવાના ઉત્તમ પ્રયત્નો કરશે.

૧૧. કોસ સબસીડી :-

નવીનકરણપાત્ર વીજળી સાધનોમાંથી ત્રીજા પક્ષકારના વેચાણને, આયોગના વખતોવખત નક્કી કરે કે કોસ સબસીડી સરચાર્જમાંથી મુક્ત રાખશે.

આમ છતાં, ખુલ્લા પ્રવેશ મારફત નવીકરણપાત્ર વીજળી સાધનોમાંથી પુરવઠા માટે (ત્રીજા પક્ષકારને વેચાણ) કોઈ બેન્કિંગ સુવિધા અપાશે નહીં. ૧૫ મિનિટમાં દરેક બ્લોક માટે વીજળી હિસાબ કરવા સક્ષમ ABT સુસંગત ઈન્ટરફેઝ મીટરીંગ સિસ્ટમ પુરવઠો તેમજ ઉપાડના એમ બંને સ્થળોએ પૂરી પડાશે.

ત્રીજા પક્ષકારને વેચાણ માટે, ૧૫ મિનિટના દરેક સમય બ્લોકમાં નવીકરણપાત્ર વીજળી સાધનોમાંથી વીજળી ઉત્પાદનો, તે જ ૧૫ મિનિટના સમય બ્લોકમાં કેપ્ટિવ/ખુલ્લા પ્રવેશ વપરાશકર્તાના વપરાશ સામે મજરે આપવામાં આવશે.

૧૨. મુશ્કેલીઓ દૂર કરવાની સત્તા :-

૧૨.૧ આયોગ સ્વયં અથવા નવીકરણપાત્ર વીજળી સાધનોમાંથી વીજળી ઉત્પન્ન કરનાર કોઈ વ્યક્તિ પાસેથી અથવા પરવાનેદાર કે કેપ્ટિવ વપરાશકર્તા કે ખુલ્લા પ્રવેશના ગ્રાહક પાસેથી અરજી મળ્યેથી આ વિનિયમોની સમીક્ષા, ઉમેરો, સુધારો કે ફેરફાર કરશે અને આ વિનિયમોની જોગવાઈઓ અમલી બનાવવામાં પડતી કોઈપણ મુશ્કેલીઓ દૂર કરવા યોગ્ય ઉદ્દેશો પસાર કરશે.

૧૩. રદ કરવું :-

૧૩.૧ તા. ૨૯ ઓક્ટોબર, ૨૦૦૮ નો અગાઉનો વિનિયમ નં. ૧૫ અહીં રદ કરવામાં આવે છે.

સ્થળ : અમદાવાદ

તારીખ : ૧૭ એપ્રિલ, ૨૦૧૦

સહી/-

સંજય નંદન અગ્રવાલ,

સચિવ

ગુજરાત વિદ્યુત નિયંત્રક આયોગ.

Extra No. 344

ANNEXURE : B

આર્થિક લવાજમનો દર રૂા. ૩૫૦૦/-



સત્યમેવ જયતે

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Separate paging is given to this Part in order that it may be filed as a Separate Compilation.

PART IV-C

Statutory Rules and Orders (Other than those published in Parts I, I-A and I-L) made by Statutory Authorities other than the Government of Gujarat including those made by the Government of India, the High Courts, the Director of Municipalities, the Commissioner of Police, the Director of Prohibition and Excise, the District Magistrates and the Election Commission, Election Tribunals, Returning Officers and other authorities under the Election Commission.



GUJARAT ELECTRICITY REGULATORY COMMISSION
Gandhinagar.

NOTIFICATION No. 2 of 2015

In exercise of the powers conferred under sections 61, 86(1)(e) and 181 of the Electricity Act, 2003 read with sub-regulation (iv) of Regulation 1 and Regulation 8 of the Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010 (Notification No.3 of 2010) (Principal Regulations) and Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) (First Amendment) Regulations, 2014 (Notification No. 2 of 2014), and all other powers enabling it in this behalf, the Gujarat Electricity Regulatory Commission hereby notifies the 1st day of July, 2015, as the date on which the sub-regulation (iv) of Regulations 1 and Regulation 8 of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010 (Notification No.3 of 2010) and amendments made in it shall come into force and the Renewable Purchase Obligation shall become applicable to Captive and Open Access User(s)/Consumer(s).

Place : Gandhinagar.

Date : 1/07/2015.

S. T. ANADA

I/C Secretary

Gujarat Electricity Regulatory Commission

IV-C-Ex. 344-1

344-1

Government Central Press, Gandhinagar.

ANNEXURE : C

Annex C

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POLICY OF MINISTRY OF POWER

FOR

BIOMASS UTILIZATION FOR POWER GENERATION

THROUGH CO- FIRING IN PULVERIZED COAL

FIREF BOILERS

Biomass Utilisation for Power Generation through Co-firing in Coal Based Power Plants

1. Introduction

Stubble burning has been cited as a major cause of recent smog in north-west India. Stubble burning is deliberate setting fire of the straw stubble that remains after harvesting of paddy and other crops. During the months of October and November of each year, farmers in north-west India burn an estimated 30-40 million tonnes of crop waste from their paddy fields after harvesting. The primary reasons for stubble burning are; (a) reduce the cost of clearing the field for next crop, (b) reduce the turnaround time between harvesting and sowing for next (winter) crop and (c) lack of other alternatives, viz. availability of appropriate agricultural implements, viz., implements to take out the stubble and "Happy Seeders" for zero tilling sowing etc.

1.1. Various options for safely disposing such bio-mass are (i) setting up power plants exclusively based on bio-mass, (ii) co-firing of pellets made out of bio-mass in the coal based thermal plants, (iii) *in-situ* in-incorporation of bio-mass into the soil using appropriate agricultural implements or composting and (iv) manufacturing of various products such as Ethanol, Bio CNG and Board etc.

2. Biomass co-firing in coal based power plants

The estimated 30-40 million metric tonnes of paddy straw that remains un-utilised and burnt in north-west India has potential to generate about 6000-8000 MW and 45000 million units of electricity annually, by co-firing it along with coal in existing coal fired power plants. Biomass co-firing has a potential to create a market for large scale consumption of agro residue and convert it into electricity in eco-friendly and cost effective manner while mitigating problem of air quality deterioration. Market mechanism for agro residue utilisation will also enable additional income to farmers.

2.1 The existing power plant infrastructure cannot directly use raw agro residue bio-mass in a pulverised coal fired type boiler and it is required to be processed into dense bio-mass in the form of pellets. The densification of biomass in the form of pellets also reduces its transportation cost, which is a major component in overall fuel price. Promoting agro-residue processing capacity into pellets for power sector shall also create employment opportunities and develop entrepreneurship.

2.2 Biomass co-firing is a well proven technology. With increasing environmental awareness, power plants all over the world has adopted, biomass co-firing as a strategy to combat pollution. According to open source data, 230 plants across globe, majority located in European and American countries, have experience of biomass co-firing. UNFCCC recognizes biomass co-firing as a carbon neutral technology for mitigation of carbon emission from coal based power plants.



3. Status of Biomass co-firing in India

NTPC has successfully demonstrated the co-firing of 7% blend of biomass pellets with coal in its Dadri power plant. This can be replicated in other coal fired power plants too. The blend of coal and pellets can safely be pulverized in power plants having bowl mills/vertical roller mills/beater mills. However, this method is not suitable for power plant having ball and tube type of mills due to higher risk of fire hazard. Approximately, 2.5 to 3.0 lakh tonnes of Biomass pellets are required for 7% blending in a thermal power plant of 1000MW capacity.

4. Benefits of using biomass pellets co-firing in Coal based power plants

- a) Eliminate/minimize burning of agro-residue and create economic value of agro residue by promoting its use as fuel in power plants in co-firing mode.
- b) Improve the air quality index while creating additional income for farmers.
- c) Encourage the establishment of decentralised pellets manufacturing units and generate employment opportunities.

5. Biomass Utilisation for Power Generation through Co-firing in Coal based power plants.

Therefore, in order to promote use of the bio-mass pellets, all the Power plants/Utilities are hereby advised as follows:

- a) All fluidised bed and pulverised coal units(coal based thermal power plants) except those having ball and tube mill, of power generation utilities, public or private, located in India, shall endeavour to use 5-10% blend of biomass pellets made, primarily, of agro residue along with coal after assessing the technical feasibility, viz. safety aspects etc.
- b) CEA shall develop/issue Specifications for the pellets. CEA will also provide technical assistance/advise to Utilities on how to use bio-mass pellets for blending with coal in coal based thermal power plants.
- c) The Appropriate Commission will determine the compensation (for plants other than those whose Tariff has been already determined under section 62 of Electricity Act) to be allowed in tariff for increase in cost of generation on account of using bio-mass pellets, viz., cost of pellets, increase in auxiliary power consumption (APC) and plant heat rate (HR) etc. Increase in cost of generation will not be taken into account for the purpose of merit order for despatch of electricity. The Appropriate Commission shall devise a suitable mechanism to ensure the use of biomass as per (a) above.



ANNEXURE : D

Annex D
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सत्यमेव जयते
भारत सरकार
Government of India
विद्युत मंत्रालय
Ministry of Power
केंद्रिय विद्युत प्राधिकरण
Central Electricity Authority
सचिव कार्यालय
Office of the Secretary

No. CEA/TETD-TT/2017/M-25/1137-1251

Dated: 24.11.2017

To

All State Power Secretaries, Thermal Power Generating Plants/ Utilities (Public or Private), Power Equipment Manufacturers – As per list

Subject: Biomass Utilization for Power Generation through Co-firing in Pulverised Coal Fired Boilers- Advisory के बारे में ।

Dear Sir,

As you may be aware that stubble burning has been cited as a major cause of recent smog in North- West India. Stubble burning is deliberate setting fire of the straw stubble that remains after harvesting of paddy and other crops. Instead of burning in open fields, these can be collected, processed and can be used as Biomass fuel to generate power.

Biomass Co-firing is a well proven technology. With increasing environmental awareness, power plants all over the world have adopted Biomass Co-firing as a strategy to combat pollution. UNFCCC recognizes Biomass Co-firing as a carbon neutral technology for mitigation of carbon emission from coal based power plants.

NTPC have successfully demonstrated the Co-firing of 7% blend of Biomass pellets with coal in its Dadri Power Plant. This can be replicated in other coal fired power plants having bowl mills/vertical roller mills/ beater mills.

Ministry of Power vide letter No. 11/86/2017-Th.II dated 17th November, 2017 have forwarded 'Policy for Biomass Utilization for Power Generation through Co-firing in Pulverised Coal Fired Boilers' and has requested to issue the same to all the Power Plants/ Utilities (public or private), State Governments, Power equipment manufacturers and other stake holders. The Policy has been uploaded on CEA website www.cea.nic.in

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'In order to promote use of the Biomass pellets, all fluidized bed and pulverized coal units (coal based thermal power plants) except those having ball and tube mill, of power generating utilities, public or private, located in India, shall endeavor to use 5-10% blend of Biomass pellets made, primarily, of agro residue along with coal after assessing the technical feasibility, viz. safety aspects etc.'

Yours faithfully,


(P.C. Kureel)
Secretary, CEA

To

Central Utilities

1. Chairman & Managing Director, NTPC Ltd., NTPC Bhawan, Scope Complex, 7, Institutional Area, Lodhi Road, New Delhi-110003.
2. Chairman, Damodar Valley Corporation, DVC Towers, VIP Road, Kolkata- 700 054
3. Chairman & Managing Director, Neyveli Lignite Corporation Ltd., Corporate Office, Block-I, Neyveli - 607801 , Tamil Nadu

State Utilities

1. Managing Director, Andhra Pradesh Power Generation Corporation Limited, Vidyut Soudh, Hyderabad- 500 049 Andhra Pradesh
2. Managing Director, Assam Power Generation Corporation Ltd. , Bijuli Bhawan, 4th Floor, Palton Bazar, Guwahati 781001 Assam
3. Managing Director, Bihar State Power Generation Company Ltd., 1st Floor, Vidyut Bhawan, Bailey Road, Patna 800 021
4. Managing Director, Chhattisgarh State Power Generation Corporation Ltd., Dagniya, Raipur - 492 013 Chhattisgarh
5. Managing Director, Durgapur Projects Ltd., Dr. B C Roy Avenue, Disrict Burdwan, Durgapur- 713 201 West Bengal
6. Managing Director, Gujarat State Electricity Corporation Ltd., Sardar Patel Vidyut Bhawan, Race Course, Vadodara 390 007 Gujarat
7. Managing Director, Gujarat Urja Vikas Nigam Ltd., Sardar Patel Vidyut Bhawan, Race Course Road, Vadodara- 390 007 Gujarat
8. Managing Director, Haryana Power Generation Corporation Ltd., Room No. 411, 3rd Floor, Urja Bhawan, C-7, Sector-6, Panchkula - 134 112 Haryana
9. Managing Director, Jharkhand Urja Vikas Nigam Limited, Engineering Building HEC, Dhurwa, Ranchi 834 004 Jharkhand.
10. Managing Director, Karnataka Power Corporation Ltd., Shakti Bhawan, 82, Race Course Road, Bangalore- 560 001
11. Managing Director , Maharashtra State Power Generation Corporation Limited, Plot No. G-9, Prakashgad, Bandra (East), MUMBAI-400 051
12. Managing Director, Madhya Pradesh Power Generation Corporation Ltd., Shakti Bhawan, Vidyut Nagar, Rampur P.O. , Jabalpur- 482 008
13. Managing Director, Odisha Power Generation Corporation Ltd., Zone- A, 7th Floor, Fortune Towers, Chandrashekharapur, Bhubaneshwar -751 023 Odisha

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14. Chairman & Managing Director, Punjab State Power Corporation Limited, The Mall, Patiala -147 001 Punjab
15. Chairman & Managing Director, Rajasthan Rajya Vidyut Utpadan Nigam Ltd., Vidyut Bhawan, R.C. Dave Marg, Jyoti Nagar, Janpath Jaipur – 302 005 Rajasthan
16. Chairman & Managing Director, Tamil Nadu Generation and Distribution Corporation Limited, 10th Floor, NPKRR Maaligai, 144, Anna Salai, Chennai- 600 002
17. Chairman & Managing Director, Telangana State Power Generation Corporation Limited, Vidyut Soudha, Khairatabad, Hyderabad – 500082
18. Managing Director, U.P. Rajya Vidyut Utpadan Nigam Ltd., 7th Floor, Shakti Bhawan, 14, Ashok Marg, Lucknow – 226 001
19. Chairman & Managing Director, West Bengal Power Development Corporation Ltd., Bidyut Unnayan Bhaban, Block- LA, Plot No. 3/C, Sector- III, Salt Lake City, Kolkata- 700 098 West Bengal
19. Managing Director, Indraprastha Power Generation Co. Ltd., Office of PRO, Himadri, Rajghat Office Complex, New Delhi - 110 001

State Government

1. Chairman & Managing Director, Rural Electrification Corporation, Core- 4, SCOPE Complex, 7, Lodhi Road, New Delhi – 110003.
2. Chairman & Managing Director, Power Finance Corporation Ltd., Urjanidhi, 1, Barakhamba Lane, Connaught Place, NEW DELHI-110 001.
3. Principal Secretary Head (Energy Dept.), Government of Andhra Pradesh Secretariat, Hyderabad- 500 022 Andhra Pradesh
4. Additional Chief Secretary (Power), WPT&BC, Assam Secretariat, (Government of Assam), P.O. Assam Sachivalaya, Block-C, Ground Floor, Dispur - 781 006 Assam
5. Principal Secretary (Energy), Government of Bihar, Irrigation Building, Sinchai Bhawan, 1st Floor, Patna – 800 015 Bihar
6. Principal Secretary (Energy), Government of Chhattisgarh, Room No. 308, DKS Bhawn, Mantralaya, Raipur, Chhattisgarh
7. Chief Secretary (Power), Government of NCT of Delhi, 8th Floor, Players Building, Delhi Secretariat, I.P. Estate, New Delhi – 110 002
8. Principal Secretary (Energy Deptt.), Government of Gujarat, Sachivalaya, Block No. 5, 5th floor, Gandhi Nagar-382 010 Gujarat
9. Financial Commissioner & Principal Secretary (Power), Government of Haryana Room No. 603, 6th floor, New Secretariat Building, Sector-17, Chandigarh – 160 017 Haryana
10. Principal Secretary (Energy), Government of Jharkhand, Nepal House, Room No. 6, Doranda, Ranchi – 834002 Jharkhand

11. Addl. Chief Secy. & Principal Secy. (Energy), Energy Department, Government of Karnataka, Room No. 236, 2nd floor, Vikasa Soudha, Dr. Ambedkar Road, Bangalore - 560 001 Karnataka
12. Secretary (Energy), Government of Madhya Pradesh, Mantralaya, Bhopal- 462 001 Madhya Pradesh
13. Secretary (Energy), Government of Maharashtra, Industries Energy & Labour Deptt., 4th floor, Mantralaya, Room no. 401, Mumbai- 400 032
14. Commissioner-cum- Secretary, Department of Energy, Government of Odisha, Odisha Secretariat, Bhubaneshwar - 751 001 Orissa
15. Secretary (Power), Government of Punjab, Mini Secretariat, Sector- 9, Chandigarh - 160 009 Punjab
16. Secretary (Power), Chief Secretariat, Goubert Avenue, Puducherry - 605 001
17. Secretary (Energy), Government of Rajasthan, Main Building Secretariat, Janpath, Jaipur- 302 001 Rajasthan
18. Principal Secretary (Energy), Energy Department, Government of Tamil Nadu, Secretariat, Chennai - 600 009 Tamil Nadu
19. Principal Secretary, Energy Department, Government of Telangana, Room No. 328A, 2nd Floor, D- Block, T.S. Secretariat, Hyderabad - 500022 Telangana
20. Principal Secretary (Energy), Government of Uttar Pradesh, Lal Bahadur Shastri Bhawan, Annexe, 5th Floor, Lucknow - 226 004 Uttar Pradesh
21. Principal Secretary (Energy), Department of Power & NCES, Govt. of West Bengal, New Secretariat Building, I.K.S. Roy Road, 7th floor, Block 'A', Kolkata-700 001 West Bengal

Power Equipment Manufacturers

1. Chairman & Managing Director, Bharat Heavy Electrical Ltd., BHEL House, Asiad Village, Siri Fort, New Delhi - 110 049
2. General Manager, L&T MHI Boilers Private Ltd., 12/4 Delhi Mathura Road, Near Sarai Khawaja Chowk, Faridabad - 121003 Haryana
3. General Manager, L&T - MHI Turbine & Generators Pvt. Ltd., 1st Floor, Pankaj Building, Chhani Road, Vadodara - 390 024 Gujarat
4. CEO, Alstom Bharat Forge Power Limited, IHDP Building, Plot # 7, Sector- 127, NOIDA - 201301 Uttar Pradesh
5. Managing Director, Toshiba JSW Power Systems Private Limited, S. No. 74-95, Vaikkadu Village, Andarkuppam Check Post, Manali New Town, Chennai - 600103 Tamil Nadu

6. Vice President, Thermax Babcock & Wilcox Energy Solutions Private Limited, Energy House, D-2 Block, Plot No. 38 & 39, MIDC Area, R.D. Aga Road, Chinchawad, Pune – 411019
7. Managing Director, Doosan Power Systems India Pvt. Ltd., 18/2A, Sennerkuppam Bypass, Poonamallee, Chennai – 600056

IPPs / Generating Companies

1. Vice President, M/s Adani Power Limited, 8 A. Sambhav Building, Judges Bungalow Road, Bodakdev, Ahmedabad – 380 015 (Gujarat)
2. M/s Athena Chhattisgarh Power Pvt. Ltd., 7-1-24, B- Block, 5th Floor, B Block, Roxana Towers, Green Lands, Begumpet, Hyderabad- 500 016 Andhra Pradesh
3. M/s Atlas Power India Pvt. Limited, A-2, II Floor, Regency Splendour Apartments No. 25, Hall Road, Richards Town, Bangalore-560005
4. M/s Amaravati Thermal Power Private Limited, 6-3-1090, TSR Towers, Rajbhavan Road, Somajiguda, Hyderabad- 500082
5. M/s Astaranga Power Company Limited, 1259, Lakshmi Towers, Road No 36, Jubilee Hills, Hyderabad- 500033
6. Aban Power Company Ltd., 3rd Floor, 25 GN Chetty Road, T Nagar, Chennai – 600 017
7. Adhunik Power & Natural Resources Ltd., 208-209, 2nd Floor, Padma Tower-II, 22 Rajendra Place, New Delhi – 110 008
8. Alfa Infraprop Private Limited, 3rd Floor, Rider House, 136, Sector – 44, Gurgaon – 122 002
9. AES (India) Private Limited, 9th Floor, Tower – B, DLF Building No. 10, Cyber City, Phase – II, Gurgaon – 122 002 Haryana
10. BPL Power Projects (AP) Pvt. Limited, H. No. 8-2-293/82/NG/03, Plot No. 3, Road No. 69, Nandagiri Hills, Jubilee Hills, Hyderabad – 500 033
11. BGR Energy Systems Ltd., 443, Anna Salai Teynampet, Chennai – 600 018
12. Coastal Energen Pvt. Ltd., 7th Floor, Buhari Towers, 4, Moores Road, Chennai -600 006
13. M/S Corporate Power Ltd., Insignia Tower, EN1, Sector-V, Salt Lake, 3rd Floor, Kolkatta 700 091
14. CESC Limited, CESC House, Chowringhee Square, Kolkata- 700 001
15. CLP Power India Private Limited, 15th Floor, Oberoi Commerz, International Business Park, Oberoi Garden City, Goregaon (E), Mumbai – 400 063
16. Coastal Gujarat Power Limited (A Tata Power Company), Tunda Vandh Road, Tunda Village, Mundra, Kutch – 370 421
17. DHARIWAL Infrastructure (P) Ltd., CF-366, Salt lake City, Sector-1, Kolkata – 700064

18. Himanshu Jhavar, Sr. Vice President, D.B. Power Ltd., G-3A / 4-6, Kamanwala Chambers, New Udyog Mandir – 2, Mogul Lane, Mahim (W), Mumbai- 400 016
19. M/s East Coast Energy Pvt. Limited, 7-1-24, B Block, 5th Floor Roxena Towers, Greenland, Begumpet, Hyderabad 550 016 Andhra Pradesh
20. Essar Power Limited, Essar House, Prakash Deep, 10th Floor, 7 Tolstoy Marg, New Delhi – 110 001
21. Executive Vice President (Power Projects), GMR Energy Limited, IBC Knowledge Park, Phase 2, D- Block, 9th Floor, 4/1, Bannerghatta Road, Bangalore- 560 029
22. GVK Power & Infrastructure Limited, Paigah House, 156-159, Sardar Patel Road, Secundrabad – 500 003 Andhra Pradesh
23. M/s India Bulls Realtech Limited, “Indiabulls House”, 448-451, Udyog Vihar, Phase-V, Gurgaon-122001
24. M/s Ind-Barath Power (Utkal) Limited, Plot No 30-A, Road No 1, Film Nagar, Jubilee Hills, Hyderabad- 500 033
25. M/s. Ideal Energy Projects Ltd., 122, Telecom nagar, Pratap Nagar, Nagpur – 410022.
26. Director, Jindal Power Limited, Jindal Centre, 12, Bhikaji Cama Place, New Delhi- 110066
27. M/s Jindal India Thermal Power Limited, Plot No 12, Local Shopping Complex, Sector B-1, Vasant Kunj, New Delhi- 110 070
28. Sr. Vice President, M/s JSW Energy Limited, Jindal Mansion, 5A, Dr. G. Deshmukh Marg, Mumbai- 400026
29. M/S Jhabua power Ltd., 6th-7th Floor, Vatika Point, M.G.Road Phase II, Opposite First India Palace, Sector- 53, Gurgaon – 122 002
30. Avantha Power & Infrastructure Limited, 6th & 7th Floor, Vatika City Point, M.G. Road, Gurgaon – 122002
31. M/s Krishnapatnam Power Corporation Limited, Plot No 322, Road No 25, Jubilee Hill, Hyderabad-500033
32. M/s KVK Energy & Infrastructure (P) Limited, 6-3-1109/A/1, 3rd Floor, Navabharath Chambers, Somajiguda, Raj Bhavan Road, Hyderabad-500082
33. M/s Kineta Power Private Limited, Uma Enclave, 5th Floor, Road No. 9, Banjara Hills, Hyderabad-500 034
34. Head of SBU & CEO, Lanco Infratech Limited, Plot No 397, Udyog Vihar, Phase-III, Gurgaon-122 016 Haryana
35. Vice President (Technical), Lanco Anpara Power Limited, Plot No 397, Udyog Vihar, Phase-III, Gurgaon-122 016 Haryana

36. General Manager, Fuel Sourcing Group (E&C Power), Larsen & Toubro Limited, G-4, 2nd Floor, Gate No.1, Powai Campus, Saki-Vihar Road, Mumbai- 400072
37. M/S Lanco Amarkantak power Ltd., Plot No. 397, Phase-III, Udyog Vihar, Gurgaon-122016, Haryana
38. M/s Maithon Power Limited, (JV of Tata Power & DVC), C- 43, Sector-62, Noida 201 307 (UP)
39. M/s Moser Baer Power & Infrastructure Limited, 43 B, Okhala Industrial Estate, New Delhi- 110020
40. Meenakshi Energy Private Limited, Meekashi House, 8-2-418, Road No. 7, Banjara Hills, Hyderabad – 500 034
41. M/s NSL Power Limited, NSL ICON, Door No. 8-2-684/2/A, Plot Nos. 1to 4, 4th Floor Road No. 12, Banjara Hills, Hyderabad-500034
42. M/s Reliable Thermal Power limited, C-101, Ground Floor, East of Kailash, New Delhi-110065
43. Shri J. P. Chalsani, Chief Executive Director, Reliance Power Limited, Reliance Energy Centre, Shanta Cruz East, Mumbai-400 055
44. R.K.M. POWERGEN PVT LTD, 2nd & 3rd Floor, 14 Dr. Giri Appa Road, T. Nagar, Chennai-600017
45. M/s Sahara India Power Corporation Limited, Sahara India Centre, 5th Floor, 2, Kapoorthala Complex, Aliganj, Lucknow-226024
46. M/s Sheshadri Power & Infrastructure (P) Ltd., Surya Towers, 6th Floor, 105, Sardar Patel Road, Secundrabad-500003
47. M/s SJK Powergen Limited, 501, Waves Apartments, 4th Floor, Opp. R.K. Beach, Adjacent to SAIL Office, Visakhapatnam- 530 003
48. M/s SKS Ispat and Power Limited, 501 B, Elegant Business Park, Andheri Kurla Road, J.B. Nagar, Andheri (E), Mumbai-400 059
49. M/s SLS Energy Private Limited, 1445, "Vajras", 1st Floor, 28th Main, Southend 'A' Cross Jayanagar, 9th Block (East), Bangalore-560069
50. M/s Sophia Power Company Ltd., Indiabulls House, 448-451, Udyog Vihar, Phase-V, Gurgaon-122001
51. Chief Operating Officer, Spectrum Power Generation Limited, Plot No 231, 8-2-293/82/A/231, 3rd Floor, Road No. 36, Jubilee Hills, Hyderabad-500 033
52. M/s SRM Energy Private Limited, 43, Free Press House, 215, Nariman Point, Mumbai-400021
53. M/s Sterlite Energy Pvt. Ltd., 1st Floor, City Mart Commercial Complex, Baramundra, Bhubaneswar-751003

54. M/s. Simhapuri Energy pvt. Ltd., Madhucon, Greenland, 6-3-866/2, 3rd Floor, Begumpet, Hyderabad-500016
55. Managing Director, Tata Power Company Limited, 24, Homi Mody Street, Mumbai-400 001
56. Shri K. Chandrashekhar, Director (Projects), Tata Power Company Limited, Dharavi Receiving Station, Matunga, Mumbai-400 019
57. M/s Torrent Power Limited, Torrent House, Off Ashram Road, Ahmedabad-380009
58. DGEN Mega Power Project, Torrent Energy Limited, Plot No. Z-9, Dahej SEZ Area (Eastern Side), Taluka Vagra, Distt. Bharuch – 392130 Gujarat
59. M/s VIDEOCON Industries Limited, VIDEOCON Towers, 12th Floor, E-1, Jhandewalan Extn., New Delhi-110055
60. VANDANA VIDYUT Ltd., Vandana Bhawan, MG Road, Raipur – 492 001, Chhattisgarh
61. Wardha Power Company Private Limited, Sony Apartment, 2nd Floor, 19, REbella Road, Bandra West, Mumbai – 400 050
62. CEO, Jinbhuvish Power Generation Pvt. Limited, 155- A, Mittal Tower, Nariman Point, Mumbai- 400 021
63. Managing Director, Godawari Power and Ispat Ltd., Plot No. 428/2, Phase I, Industrial Area, Distt. Raipur. Siltara – 493111 Chhattisgarh
64. Managing Director, Godawari Power and Ispat Ltd., Hira Arcade, 1st Floor, New Bus Stand, Pandri, Raipur – 492001 Chhattisgarh

ANNEXURE :: E

Annex E

BEFORE THE GUJART ELECTRICITY REGULATORY COMMISSION
GANDHINAGAR

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In the matter of:

Study on biomass availability and determination of biomass prices in the six districts of Gujarat carried out by TERI as an Independent Consultant by GERC.

CORAM:

Shri Anand Kumar, Chairman

Shri K.M. Shringarpure, Member

Shri P.J. Thakkar, Member

Date: 09/02/2018

ORDER

Background:

1. The Commission has initiated this proceeding by engaging an Independent Agency, The Energy and Resources Institute (TERI) as consultant to carry out a study to assess the availability of biomass and determination of price of biomass in different districts of the State of Gujarat.
- 1.1. The aforesaid study was entrusted by the Commission to TERI in compliance to the decision and direction of the Hon'ble APTEL in Appeal No. 132 & 133 of 2012 and upheld by the Hon'ble Supreme Court vide its Judgment/Order dated 05.07.2016 in Civil Appeal No. 1973 & 1974 of 2014. The relevant portion of the Judgment dated 2.12.2013 in Appeal No. 132 & 133 of 2012 of the Hon'ble APTEL is reproduced below:

“31. Considering all the above factors, we feel that this is an appropriate case where the State Commission should examine and consider to re-determine the biomass fuel price. It should not be considered as a review of its earlier order dated 17.5.2010. In fact this should be considered as re-determination of tariff invoking the powers of the State Commission under the Electricity Act, 2003 to review the tariff in the circumstances of the case to avert closure of the biomass fuel based projects in the State.

32. In view of above, we remand the matter to the State Commission for consideration of re-determination of biomass fuel price and consequently the tariff. However, we want to make it clear that we are not rendering any specific finding about what should be the price of biomass fuel. But the revised price of biomass fuel shall be applicable prospectively.

34. Summary of our findings:

The State Commission has the powers to reconsider the price of biomass fuel and consequently revise the tariff of the biomass based power plants in the State in view of the circumstances of the case as the biomass plants in the State are partially closed and operating at suboptimal Plant Load Factor due to substantial increase in the price of biomass fuel and in order to avert their closure. In our opinion in the circumstances of the case, this is a fit case for the State Commission to reconsider and re-determine the biomass fuel price.

35. In view of above, the Appeals are allowed and the matter is remanded to the State Commission for re-consideration of the biomass fuel price and consequently re-fixing of the tariff of Biomass Based Power Projects. The State Commission is directed to pass the consequential order within four months from the date of communication of this judgment. No order as to costs.”

As per the aforesaid directive of Hon’ble APTEL, the Commission is mandated to re-determine the price of Biomass fuel and consequently the tariff taking into

consideration the availability of biomass and its price prevailing in the State based on the scientific study. Accordingly, the Commission has assigned the aforesaid task to TERI.

- 1.2. TERI has carried out the study in six districts of the State of Gujarat namely, Amreli, Bhavnagar, Junagadh, Bharuch, Vadodara and Sabarkantha. The existing biomass power plants which are located in the districts of Amreli, Junagadh and Bhavnagar have executed Power Purchase Agreements (PPAs) with GUVNL for supply of electricity generated from biomass at the tariff agreed between the parties as per the Generic Tariff determined by the Commission vide Order No. 5 of 2010 dated 17.05.2010.
- 1.3. TERI has collected the primary data by visiting various agricultural fields and industries associated with the biomass utilization in aforesaid six districts and ascertained the availability of biomass and its utilization by interacting with the farmers and the agencies/organizations/industries.
- 1.4. TERI has also collected the secondary data from various Departments of the State Government as recorded in the report.
- 1.5. TERI has also evaluated the availability of biomass taking into consideration cultivation of various crops and availability of residue from such crops in the form of husk, stalks, straw, shell, bagasse etc.

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- 1.6. Based on their study TERI has derived the price of various biomass available in the State and also determined various parameters like its GCV, moisture content, dust/sand content etc. in different districts of the State as a part of the aforesaid study and compiled it in their report.
- 1.7. TERI has studied the agriculture scenario and crop patterns in different parts of the State for the period from 2012-13 to 2016-17. However, TERI has based their study report considering the availability of data of Directorate of Agriculture, Gandhinagar, Gujarat.
- 1.8. TERI has in its study verified the availability of biomass and its use for alternative purposes also. The study has been carried out specifically for six districts including Junagadh, Amreli and Bhavnagar Districts where the biomass based power plants have been set up by the project developers who have signed PPAs with GUVNL to supply the power generated from their power plants. The details of biomass availability, its utilisation and cost of such biomass with consideration of the farmers' remuneration, labour charges, shredding cost, transportation, moisture content, dust/sand/stone percentage in the biomass and weight loss due to such factors, loading and unloading cost, etc. have been worked out by them. Based on such details, TERI has determined the cost of biomass in the aforesaid districts of the State. Similar methodology is also adopted by them while

determining the biomass availability and price of the biomass in other districts namely, Sabarkantha, Bharuch and Vadodara.

2. The report of TERI was uploaded on the Commission's website and public notice was also issued in the following newspapers inviting comments and suggestions from the stakeholders:

- 1) Business Standard dated 17.06.2017
- 2) Divya Bhaskar News Paper dated 17.06.2017
- 3) Sandesh News Paper dated 17.06.2017

In response to above the Commission received objections and suggestions from the following stakeholders.

- (i) Abellon Clean Energy Limited
- (ii) Gondal Chamber of Commerce & Industry
- (iii) Gujarat Urja Vikas Nigam Limited
- (iv) Junagadh Power Projects Private Limited
- (v) Amreli Power Projects Limited
- (vi) Utility Users' Welfare Association

- 2.1. Hearing was held on 07.07.2017. The submissions made by the Stakeholders/Objectors during the hearing as well as vide their written submissions on the discussion paper are dealt with in the following paragraphs.

Objections by Stakeholders

3. Shri A. Mohan Reddy, on behalf of M/s Amreli Power Projects Limited and M/s Junagadh Power Projects Limited submitted as under:

- 3.1. The observation of TERI in respect of Cotton Stalk for Amreli district that “the reason for burning this stalk is due to cost involved in uprooting it from the field with no alternative use of the stalk thereafter” is not correct. In some cases, the farmers supply the stalk to the power plants which will be in wet form having moisture of 50-60%. In majority cases the Agents would supply cotton stalk in the form of stalks or the material is chipped in the field and chipped material is supplied to the power plant. It is not possible for the power plants to collect the material directly from the farm as it would involve 200-300 tractors. These facts are not captured by TERI in their Report.
- 3.2. TERI has indicated that the farmers are paid remuneration of Rs. 300-500 per ton which is far from truth. It is minimum Rs. 1000/ton.
- 3.3. Groundnut shell is always supplied by the agents and not by the oil mills directly. The agents have a strong network and have arrangements with oil mills.
- 3.4. At table 3.7 of it's Report, TERI has considered selling price of ground nut shell from oil mills to power plant at Rs. 2.50 to Rs. 4.00 (Avg. Rs. 3.25) per kg. whereas selling price by contractor to the power plant is Rs. 3.00 to Rs. 4.50 (Avg. Rs. 3.75) per kg. However, while calculating the estimated cost of groundnut shell as stated at Table 3.15 of the report it has considered Rs. 2,500 to 3,000 per ton or an average of Rs. 2,750 per ton i.e. Rs. 2.75 per kg.

- 3.5. When it is a fact that ground nut shell is supplied by agents only and they have estimated a price of Rs. 3.00 to Rs. 4.50 per kg., the average price should have been Rs. 3,750 per ton. It is always experienced that in reality the price of groundnut shell varies from Rs. 3,500 per ton to Rs. 5,500 in off-season.
- 3.6. TERI has not made serious attempt for collection of facts. No evidence is furnished in the report in respect of the prices considered for determination of fuel cost. TERI did not speak to the power plant developers to seek any clarification on the data collected by them. There is contradiction between prices provided in the tables and final determination of cost.
- 3.7. In Junagadh, price of Groundnut shell during season starts at Rs. 3,800 and goes up to Rs. 5,500 (average Rs. 4,650/-). TERI has not brought out these facts anywhere in the report and considered the price of Rs. 3.5 to Rs. 4.5 (Avg. Rs. 4) per kg. and while arriving at the weighted avg. cost of fuel, has considered groundnut shell price as Rs. 2,750 which is contrary to their own price assumptions of Rs. 3.5 to Rs. 4.5 per kg and actual facts when the price was ranging from Rs. 3,800 to 5,500/ton.
- 3.8. TERI has stated that groundnut shell is packed in gunny bags and transported to users, which is not correct. The groundnut shell while being sold to the power plants and other end users is filled into trucks loosely, compacted and covered for transportation.

- 3.9. Further, for cotton stalk, when farmers supply the material directly from the field, the moisture content varies from 40% to 60%. Even when it is supplied by the agents in the form of stalk or chips, the moisture content remains at 40-50%. TERI has simply assumed it at 15% without any basis.
- 3.10. GCV of cotton stalk as per TERI report is 4472 kCal/kg., which cannot be this high. It is not known how the sample was selected and what part of the sample was delivered to lab. Under no circumstances GCV will be higher than 3400 kCal/kg. and in support of their arguments, they submitted a lab report indicating GCV as 3240 kCal/kg. Also, when the sample was tested by TERI at Noida lab, most probably 7-8 days would have passed since it was uprooted and the moisture level would have significantly dropped by then.
4. Shri Tarun Rokadiya, on behalf of M/s Abellon Clean Energy Limited submitted as under:
- 4.1. TERI has used a combination of primary and secondary data while developing the report.
- 4.2. TERI has stated that one of the key limitations was that "there is no commercial use and no established supply chain mechanism for field residues" and consequently "price determination is largely based on inputs from farmers". It implies that TERI has relied heavily on the inputs received from farmers and did

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- not independently validate the farm-to-gate supply chain or the process steps required from sourcing to receipt of biomass and post-process steps of biomass.
- 4.3. Though TERI has assumed the remuneration to farmer, the price expectation of farmer is much higher if approached by a company and/or trader.
- 4.4. TERI in the report, at 'Section 2.5 - Biomass Cost Analysis', has stated that "the cost of man-day is around Rs. 200 as per the interaction with farmer groups", which is incongruent with the prevailing minimum labour wages of around Rs. 350-375/day.
- 4.5. TERI has considered only the operational expenses (fuel, labour) as a part of the shredding cost but not considered the owning cost of such pre-processing equipment. Pre-processing equipment is expensive and not generally owned by the farmers as it is not part of their core farm equipment. Such equipment has to be supplied by the biomass power plant operator, which adds to the overall cost of biomass. This has not been considered by TERI.
- 4.6. Reaching out to individual farms level for arranging collection & transportation of waste is not possible and there are traders/entrepreneurs that organise collection of biomass. Accordingly, there is a trader margin of about Rs. 125-150/Ton, which has not been captured by TERI in the cost build-up.

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- 4.7. Transportation cost has been assumed for 25 kms. only, whereas in reality the biomass is being transported as far as 50 kms. This additional cost needs to be considered. TERI has not captured the actual transportation cost from any farm to any of the biomass power plants in the region but only made assumptions.
- 4.8. TERI has considered the cost-build up during single season and that too at the time of its survey. Cost of biomass is substantially higher as the harvesting seasons come to a close. The demand for cotton stalks remains constant but the supply starts shrinking. Farmers/traders take advantage of this and increase the price. TERI should have considered the average price during peak/off-peak supply season in its report and accordingly taken a weighted average.
- 4.9. TERI has not detailed the sampling methodology and apparently represents a totally unscientific approach. Only one sample of each type of biomass was analysed as evident from Annexure XII of TERI's report, which is insufficient considering their visit to several farms across six districts in Gujarat. Enough samples should have been drawn to create a database and run statistical analysis to arrive at average GCV with some measure of confidence.
- 4.10. Only 16-40 grams of biomass sample was submitted to lab for analysis, which is highly insufficient to derive conclusion. Sample should have been taken as-is from farm level and also it is unclear what part of the biomass was submitted for analysis. The data therefore cannot be considered reliable/representative.

- 4.11. There is no data on the age of the sample and source from where it was taken as this has significant impact on the moisture content and hence heat value. Cotton stalk has high moisture (30-40%) when it is uprooted from the field. Moisture of biomass at the farm level is not captured.
- 4.12. TERI has not made any efforts to cross-reference or validate its submission on GCV of biomass considering that it is only significantly out of range with what has been approved by GERC in previous control order and proposed (3400 Kcal/kg) in this control period but also with respect to biomass heat value considered by other leading States in India.
- 4.13. TERI has not interacted with the biomass power developers or visited the plants or captured biomass sample from plants, but has interacted with Sugar mills, briquette manufacturers and oil companies during the field study and has ignored capturing data/info from the important stakeholders.
- 4.14. He also made representation on the commercial aspects as proposed in the Discussion Paper, such as waiver of CSS, EHV/PF rebate, applicability of proposed commercial aspect to all the projects including existing, etc.
5. Shri V. T. Patel, on behalf of Gujarat Urja Vikas Nigam Limited submitted as under:

- 5.1. TERI has analysed Biomass fuel price and other parameters mainly on the basis of interactions with few farmers and other industries. These numbers are too small to be considered as representative figures for respective district as a whole to arrive at any decision on that basis.
- 5.2. It is submitted that there is a large variation in the district wise price of cotton stalk considered in the report which is unusual as all the districts except Vadodara and Bharuch are having geographic similarities and having more or less similar crop patterns i.e. predominantly cotton and groundnut.
- 5.3. In the Report it is stated that cotton stalks do not have much commercial uses and are often disposed of by burning it in Agricultural field or ploughed back to soil and also at present there are no transactions with respect to cotton stalk. No details are provided about the farmer's remuneration but the same is assumed based on the interactions with the farmers. It will not be appropriate or prudent to consider remuneration to farmers on the assumption basis at Rs. 200-500 per Tonne based on interactions with farmers during survey and more particularly when the report itself states that there is no alternative use of cotton stalk and farmers are willing to sell at labour cost.
- 5.4. Also in the absence of organized market, consideration of higher remuneration will lead to vicious cycle wherein higher cost consideration will result into further

request for increase in biomass price and so on. Hence, average remuneration to farmers should not be considered more than Rs. 200/Ton.

- 5.5. In the report, district wise different labour cost towards uprooting, bundling and loading has been considered at Rs. 800-1200 per Ton (Avg. Rs. 1000/Ton) on the basis of interaction with few farmers. However, the report ignores that the activities related to uprooting, bundling and collection of cotton stalk are carried out manually involving labour only on small scale/individual basis, otherwise activities on large scale basis such as collection of cotton stalk as a biomass fuel for power generation will involve mechanized work with very less manual intervention and less time consuming. Accordingly, cost towards uprooting, bundling and collection of cotton stalk involving mechanised work may not be more than 700 Rs. /ton.
- 5.6. Report considers the shredding cost at Rs. 350/ton on assumption basis, however, shredding is carried out using the shredding machine which is part of Biomass project itself under Plant & Machineries and its operating cost is part of O&M cost. No further cost is required to be considered as a part of biomass fuel cost.
- 5.7. Report considers the cost of transportation at Rs. 300-500/Ton (Avg. Rs 450/Ton), with transportation being carried out through tractors and for upto 25 kms. For Tractors having capacity of approx. 5 tonne, the transportation cost works out at Rs. 45/km, which is excessive and far from reality and may not be

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more than Rs. 30 per km. Accordingly, cost of transportation should not be more than Rs. 300 per Ton. Also no extra cost of unloading biomass should be considered in the age of hydraulic tractors.

- 5.8. It is not correct to consider the weight loss merely on the basis of statement of biomass power producers. Lab test certificate on GCV analysis of cotton stalk states 7.70% whereas in the report it is taken at 15% on assumption basis. Weight loss due to storage/dust etc. taken as 5% is on higher side and is without any basis. The weight loss on this account may not be more than 2%. Accordingly, overall weight loss for cotton stalk may not be more than 10%. Commission may, therefore, consider average landed price of cotton stalk not more than Rs. 1350 per tonne, uniformly across all 6 districts.
- 5.9. As per the report when groundnut shell is to be purchased from oil mills, there is no logic to consider the cost component in the name of farmers' remuneration.
- 5.10. As per the test certificate attached with the Report, the GCV of Groundnut shell is 4315 kCal/kg as against GCV of 4472 kcal/kg of cotton stalk. Since equivalent heat value of groundnut shell is lower than cotton stalk, there is no justification to consider higher cost for groundnut shell. It should not be more than Rs. 2500/Tonne for all three districts including the cost of loading and unloading.
- 5.11. Transportation of Groundnut shell should not be more than Rs. 350/Ton as Trucks being the transportation mode with 10 tonne capacity and fare of Rs. 35/km.

- 5.12. Dry groundnut shells are generated in the oil mill during crushing process, hence, it is not correct to consider moisture content for such dry by-product at 5%. The weight loss due to dust/storage etc. may not be more than 2% and accordingly overall weight loss may not be more than 2%. Thus, landed cost of groundnut shell should not be more than Rs. 2900/Ton for all three districts.
- 5.13. It is stated in the report that apart from cotton, sugarcane crop is predominant in Bharuch District. Since the bagasse based power project is envisaged to be set up as co-located, co-generation power project, in the various orders of the Commission, there is no requirement to consider overheads such as transportation, loading, unloading and traders margin etc. for sugarcane bagasse. Therefore, the Commission may consider the average cost of bagasse as not more than Rs. 1750 per Tonne being average of Rs. 1600-1900.
- 5.14. As inferred from the Report, Castor stalk is predominant in Vadodara and Sabarkantha districts and Paddy straw in Vadodara district. There is not much difference in the characteristics of castor stalk/paddy straw as a biomass fuel in comparison to cotton stalk in terms of alternative use of these fuels and other related costs. Hence, average landed price of castor stalk and paddy straw in line with the average landed price of cotton stalk should not be more than Rs. 1350/Ton.

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- 5.15. Proportion of various types of biomass fuels considered in the report is inconsistent and contrary. For certain districts, say Junagadh and Amreli, though it is stated that ample quantity of cotton stalk is available, its proportion is considered on lower side (35%) whereas for other districts higher proportion of cotton stalk is considered (80%- Bhavnagar, 90% - Bharuch and 100%-Vadodara) disregarding the stated difficulties of storage, self-heating etc. If higher proportion of cotton stalk is considered for certain districts, there is no logic and justification for considering the proportion of cotton stalk at lower side for other districts on the basis of stated difficulties, specifically when surplus cotton stalk is said to be available in ample quantity for these three districts also.
- 5.16. Consideration of higher proportion of groundnut shell in case of Junagadh and Amreli is contrary to the findings in the report itself. Given the availability of large quantum of cotton stalk and limited surplus generation of groundnut shell from oil mills and its higher landed cost with lower GCV in comparison to cotton stalk, it is prudent and reasonable to consider utilization of cotton stalk proportion for Amreli, Junagadh and Bhavnagar at 90% cotton stalk and 10% groundnut shell.
- 5.17. The determination of price for Biomass fuel in the report may be made applicable prospectively.

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6. Shri Chetan Bundela, on behalf of Torrent Power Limited submitted that he has nothing to comment on the Report of TERI. The Commission may validate the Report and take appropriate view in this regard. However, other aspects relating to Biomass/Bagasse projects as proposed in the Discussion paper may not be considered in the present proceedings but separately, if any.
7. Utility Users' Welfare Association has submitted as under:
 - 7.1. It is stated in the report that "Bio-Coal Industries are buying groundnut shell at Rs. 3.50 to 4.50 per kg and selling bio coal at Rs. 5 to 6 per kg. Looking to the current scenario of price of indigenous and imported coal, which range in Rs. 1700-1900 with GCV of 4800-5000 Kcal/Kg and Rs. 2000-2500 with GCV of 5800-6000 Kcal/Kg respectively, who is going to pay the rate of Bio-Coal of Rs. 5000-6000 per ton and vice versa. Moreover, which Bio-Coal industry will buy groundnut shell at Rs. 3.50-Rs. 4.50 per kg, when coal itself is cheaper than the groundnut shell. So the sanctity of the report as long as the price of groundnut shell and cotton stalk is concerned is required to be verified.
 - 7.2. Also, when the Bio-Coal manufacturers can manage to get 54000 tons of only groundnut shell per year as stated by TERI, it is the responsibility of the power project developers to arrange the required quantum of biomass at the least price.

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- 7.3. As per the GCV and price of Biomass considered in TERI Report, with 15% of conventional fossil fuel allowed, the fuel price will be lower than that determined by the Commission in generic Order No. 5 of 2010 dated 17.5.2010.
- 7.4. TERI has not approached the Agricultural University in Anand, Junagadh and Dantiwada for the collection of proper data and to discover the real price of the biomass.
- 7.5. Transportation charges, loading and unloading charges considered in TERI Report inflate the biomass prices.
- 7.6. The biomass power project developers have failed to manage and procure the biomass for required quantum and at reasonable prices.
- 7.7. Challenge of disposal of biomass waste is the social responsibility of all the stakeholders and a need of hour but it should not be the case that such social responsibilities and the need is converted into the greed and business of windfall gain at the cost of society and consumers.
- 7.8. Fixing the price of biomass fuel is a key question to be considered as price of different types of biomass is not stable and is varying as per the phenomenon of economics i.e. demand and supply.

- 7.9. The Commission vide its Order No. 5/2010 dated 17.5.2010 directed all the Biomass project developers to submit monthly details of the category of fuel used duly certified by Chartered Accountant to GEDA as nodal agency. Hence, it is necessary to call for and verify such details of biomass fuel used by these power project developers submitted to GEDA in compliance with the Order.
8. Gondal Chambers of Commerce & Industry has requested the Commission to apply the biomass prices as stated by TERI in its Report.

Commission's Observation:

9. We have considered the submissions made by various stakeholders and shared the same with TERI. Taking into consideration the comments/suggestions from various stakeholders TERI has since carried out the necessary changes wherever required and has revised their report which is now available on the Commission's website (www.gercin.org). The Commission has decided the price including GCV of different biomass based on final report as well as the suggestions of the stakeholders.
- 9.1. The major contention of the stakeholders with diversified views is on the cost of the biomass and its GCV. The project developers stated that the cost of biomass considered by TERI in its report is quite lower than the actual price of biomass prevailing in the market. While utilities and consumers' organisation have stated that the price of biomass considered by TERI is quite high.

- 9.2. We note that TERI has evaluated the availability of various types of biomass based on the cropping pattern in various parts of the State, land used for agriculture purpose in the different districts, harvesting time, cultivation of various types of crops, quantum of residue available from such crops received from the Director of Agriculture, Government of Gujarat etc. Moreover, it has also evaluated the residues available from various crops and the total quantum of different types of biomass generated in the State. TERI has also considered different uses of biomass like (i) utilisation as fodder to animals, (ii) cooking purpose, (iii) industrial purpose, (iv) utilisation for other products like Bio-Coal manufacturing, (v) captive use by Oil Mills etc. TERI has also considered the use of different types of biomass by the mid-day meal institutions etc. and derived the quantum of biomass availability in different districts of the State for power generation.
- 9.3. As far as the cost of biomass is concerned, TERI has interacted with the farmers about the labour cost payable for uprooting the crops from the farms, remuneration to the farmers for the biomass specifically cotton stalks, castor stalk etc., loading charges and transportation charges. The market price of biomass during different periods of the years i.e. during the season when crops are available in plenty and during off season when no crops are available has been evaluated by TERI. TERI has also considered the cost for shredding of cotton stalks, loading and unloading cost of biomass.

- 9.4. While deriving the biomass price, TERI has considered percentage of moisture content in different types of biomass, and weight loss due to moisture content. It has also considered the percentage of dust and sand/stone content in the biomass and weight loss in Kg/tonne on account of the same. TERI has also considered the additional cost towards the additional quantum of biomass needed on account of loss due to moisture content and dust/sand particles in the biomass. TERI has evaluated different types of biomass availability and has derived the cost of biomass as fuel for the power plants in six different districts of the State.
- 9.5. A summary of different types of biomass in six districts as a crop residue, its GCV, moisture content, weight loss due to moisture, weight loss due to dust, sand/stone, total weight loss and net surplus availability of biomass and the cost of such biomass is stated in the table below:

Junagadh

Table 9.1: Estimated surplus of Cotton stalk in the district

A	Total cotton stalk generated in the district (K.M.T)	360.56
B	Estimated demand of cotton stalk in domestic cooking and other works (K.M.T)	72.11
C	Estimated demand of cotton stalk in Bio coal industries (K.M.T)	18.03
D	Total annual demand of cotton stalk (K.M.T) [B+C]	90.14
E	Estimated net surplus cotton stalk (K.M.T) [A – D]	270.42

Table 9.2: Estimated surplus of Groundnut shell in the district

A	Total groundnut shell generated in the district (K.M.T)	195.86
B	Total groundnut shell consumed by bio coal industries (K.M.T)	54.00
C	Estimated annual groundnut shell consumed by oil mills (K.M.T)	13.50
D	Estimated annual groundnut shell lost while groundnut eating (K.M.T)	39.17
E	Total annual consumption of groundnut shell (K.M.T) [B+C+D]	106.67
F	Estimated surplus groundnut shell (K.M.T) [A-E]	89.19
G	Potential surplus of groundnut shell (K.M.T) [A-C-D]*	143.19

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* Potential surplus includes the quantity of groundnut shell which is currently consumed by bio coal industries but can be potentially available for alternate competitive use.

Table 9.3 Biomass Production (Generation), Consumption, and Surplus (K.M.T/annum)

Type of crop residue	Production	Consumption/Demand House Hold/Bio-coal	Surplus
Cotton stalk	360.56	90.14	270.42
Groundnut shell	195.86	52.67	143.19

Table 9.4: Estimated cost of Cotton stalk

Particulars	Average cost (Rs./Ton)	Reference
Farmer's remuneration	350 (200-500)*	Farmer's interview
Labour charges for uprooting, bundling and loading	900 (800-1000)*	Farmer's interview
Shredding cost	350	Farmer's interview
Transportation cost (0-25 km)	350	Local source
Unloading cost	100	Local source
Average Landed cost	2,050	

* Figures in brackets give the price range during the year

Table 9.5: Cost of Groundnut shell

Particulars	Average cost (Rs/Ton)	Reference
Cost of groundnut shell charged by oil mill	3,100 (2,800-3,400)*	From oil mill
Loading and Unloading	200	From oil mill
Transportation cost (0 – 50 km)	450	From oil mill
Average Landed cost	3,750	

* Figures in brackets give the price range during the year

Table 9.6: Final cost of Groundnut shell and Cotton stalk considering losses

Description	Biomass Price/ton	Moisture		Dust/sand/stone		Total Weight losses in kg per ton	Biomass Price Per ton considering losses
		%	Weight loss in kg per ton	%	Weight loss in kg per ton		
GN Shell	3750	5*	50	-	-	50	3947
Cotton Stalk	2050	15	150	5	50	200	2563

* In case of GN shell, moisture and handling losses together have been considered at 5%.

Amreli

Table 9.7: Estimated surplus of Cotton stalk in the district

A	Cotton stalk generated in district (K.M.T)	1569.22
B	Estimated demand of cotton stalk in domestic cooking and other works (K.M.T)	313.84
C	Estimated net surplus cotton stalk (K.M.T) [A-B]	1255.38

Table 9.8: Estimated surplus of Groundnut shell in the district

A	Groundnut shell produced in the district (K.M.T)	29.49
B	Ground nut shell used by oil mills for their captive use (K.M.T)	2.43
C	Ground nut shell lost while eating groundnut (K.M.T)	5.89
D	Estimated potential surplus groundnut shell (K.M.T) [A-B-C]*	21.17

* Although all the surplus groundnut shells are currently consumed by bio-coal industries but it can be considered as potential surplus as it can be utilised for other competitive use.

Table 9.9: Estimated cost of Cotton stalk

Particulars	Average cost (Rs./Ton)	Reference
Farmers Remuneration	400 (300–500)*	Farmers' interview
Collection cost (Labour charges for uprooting, bundling and loading)	900 (800–1000)*	Farmers' interview
Transportation cost 0–25 km.	400 (300–500)*	Local source
Unloading cost	200	From farmers
Processing cost (Shredding cost)	350	Farmers' interview
Average landed cost	2,250	

*Figures in brackets give the price range during the year

Table 9.10: Estimated cost of Groundnut shell

Particulars	Average cost (Rs./Ton)	Reference
Crop residue cost from oil mills (including loading and unloading)	2,750 (2,500–3,000)*	From oil mills
Transportation 0–50 km.	400	From oil mills
Average landed cost	3,150	

* Figures in brackets give the price range during the year

Table 9.11: Final cost of Groundnut shell and Cotton stalk considering losses

Description	Crop residue Price/ton	Moisture		Dust/sand/stone		Total Weight losses per unit	Crop residue Price Per ton considering losses
		%	Weight loss per unit	%	Weight loss per unit		
GN Shell	3,150	5*	50	-	-	50	3,316
Cotton Stalk	2,250	15	150	5	50	200	2,813

* In case of GN shell, the moisture and handling losses have together been considered at 5%.

Bhavnagar

Table 9.12: Estimated surplus of Cotton stalk in the district

A	Cotton stalk generated in Bhavnagar (K.M.T)	800.91
B	Estimated demand of cotton stalk in domestic cooking (K.M.T)	200.23
C	Estimated demand of cotton stalk in Bio-coal industries (K.M.T)	40.04
D	Total annual demand of cotton stalk (K.M.T) (B+C)	240.27
E	Estimated net surplus cotton (K.M.T.) (A-D)	560.64

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Table 9.13: Estimated surplus of Groundnut shell in the district

A	Total Generation of groundnut shell in Bhavnagar district (K.M.T)	34.12
B	Total estimated annual groundnut shell consumption in bio-coal industries (K.M.T)	10.13
C	Total estimated annual groundnut shell consumption for local consumptions (K.M.T)	6.82
D	Ground nut shell consumed by oil mills (K.M.T)	2.83
E	Total annual utilization of groundnut shell (K.M.T) [B+C+D]	19.78
F	Net availability of groundnut shell (K.M.T) [A-E]	14.34
G	Potential availability of groundnut shell in the district (K.M.T) [A-C-D]*	24.47

* Potential availability includes groundnut shell consumption in bio-coal industries. Although, it is consumed in bio-coal industries but it is potentially available for competitive uses if other competitive demand exists in future.

Table 9.14: Biomass Production (Generation), Consumption, and Surplus (K.M.T/annum)

Type of crop residue	Production	Demand	Potential Surplus
Cotton stalk	800.91	240.27	560.64
Groundnut shell	34.12	9.65	24.47

Table 9.15: Estimated cost of Cotton stalk

Particulars	Average Cost (Rs./Ton)	Reference
Farmer's remuneration	400 (300-500)*	Interaction from farmer
Labour charges for uprooting, bundling and loading	1000 (800-1,200)*	Farmer's interview
Shredding cost	350	Farmer's interview
Transportation cost (0-25 km)	500	Local source
Unloading cost	100	From farmers
Average Landed cost	2,350	

* Figure in brackets gives the price range during the year

Table 9.16: Estimated cost of Groundnut shell

Particulars	Average Cost (Rs./Ton)	Reference
Cost of groundnut shell charged by oil mill	2,750 (2,500-3,000)*	From oil mill
Loading and unloading cost	200	From oil mill
Transportation (0-50 km)	450	From oil mill
Average Landed cost	3,400	

* Figure in brackets gives the price range during the year

Table 9.17: The final cost of Groundnut shell and Cotton stalk considering losses

Description	Crop residue Price/ton	Moisture		Dust/sand/stone		Total Weight losses per unit	Crop residue Price Per ton considering losses
		%	Weight loss per unit	%	Weight loss per unit		
GN Shell	3,400	5*	50	-	-	50	3,579
Cotton Stalk	2,350	15	150	5	50	200	2,938

* In case of GN shell, the moisture and handling losses have together been considered at 5%.

Bharuch

Table 9.18: Major crop residue generated in Bharuch District

Crop Residue	Quantity (K.M.T)	Consumption (K.M.T)				Net surplus (K.M.T)
		Household Cooking	Fodder	Industry	Manure	
Cotton Husk	42.67	-	-	-	42.67	-
Cotton Boll Shell	42.67	-	-	-	42.67	-
Groundnut Shell	0.29	-	-	-	0.00	0.29
Groundnut stalk	1.95	-	1.95	-	-	-
Wheat Pod	14.64	-	-	-	14.64	-
Bajra Stalk	1.47	1.47	-	-	-	-
Bajra Husk	0.22	-	-	-	0.22	-
Bajra Cob	0.24	-	-	-	0.24	-
Sugarcane bagasse	82.81	-	-	82.81	-	-
Sugarcane tops & leaves	12.55	-	-	-	-	12.55
Rice Straw	38.80	-	38.80	-	-	-
Rice Stalk	38.80	-	-	-	38.80	-
Rice Husk	5.17	-	-	5.17	-	-
Maize Stalk	2.20	-	2.20	-	-	-
Maize Cob	0.33	-	0.33	-	-	-
Cotton Stalk	310.73	-	-	-	93.22**	-
Castor Stalk	67.20	48.47*	-	-	-	-
Pigeon Pea Stalk	136.11	-	-	-	-	386.99
Wheat Stalk	73.22	-	-	-	58.58**	-
Aggregate	872.07	49.94	43.28	87.98	291.04	399.83

* Explained in Table 2.22

** Explained in Table 2.21

Table 9.19: Total crop residue generation of bagasse in Bharuch District

Sugar Industry	Bagasse generated (tons per day)	No. of days the industry is functional in a year	Total Bagasse generated at each unit (K.M.T)
Shree Ganesh Khand Udyog Sahakari Mandli Ltd.	1,120	180	201.60
Shree Khedut Sahakari Khand Udyog Mandli Ltd.	1,200	180	216.00
Aggregate			417.60

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Table 9.20: Consumption and estimated surplus analysis for sugarcane bagasse in Bharuch District

Sugar Industry	Bagasse generated (tons/day)	Bagasse used by sugar industry (tons/day)	Surplus bagasse (tons/day)	No. of days industry is functional in a year	Surplus bagasse (K.M.T)
Shree Ganesh Khand Udyog Sahakari Mandli Ltd.	1,120	850	270	180	48.60
Shree Khedut Sahakari Khand Udyog Mandli Ltd.	1,200	750	450	180	81.00
Aggregate					129.60

Table 9.21: Generation of different stalks in the district

Different stalks	Total production (K.M.T)	Stalk ploughed back into the field (K.M.T)	Remaining stalk (K.M.T)
Cotton Stalk	310.73	93.22 @ 30%	217.51
Wheat Stalk	73.22	58.58 @ 80%	14.64
Pigeon pea stalk	136.11	-	136.11
Castor stalk	67.20	-	67.20
Aggregate	587.26	151.80	435.46

Table 9.22: Estimated annual crop residue cooking consumption and surplus in District

A	Particulars	Values
B	Remaining stalk after ploughing back (K.M.T)	435.46
C	Total household in Bharuch District	335,098
D	Households using crop residue as a fuel for cooking	22,134
E	Per day per household cooking requirement (kg)	6
F	Estimated annual crop residue demand for cooking in Bharuch District (K.M.T)	48.47
G	Estimated surplus stalk in the district (K.M.T) [B-F]	386.99

Table 9.23: Estimated cost of Sugarcane bagasse in Bharuch District

Particulars	Average Cost (Rs/Ton)	Reference
Material cost of bagasse purchased from Sugar industries	1,750 (1,600–1,900)*	Sugar industries
Transportation 0–50 km.	350 (300–400)*	Bio-coal industries
Loading and unloading	200 (160–240)*	Bio-coal industries
Trader's margin	200	Bio-coal industries
Average landed cost	2,500	

* Figures in brackets give the price range during the year

Table 9.24: Estimated cost of stalks in Bharuch District

Particulars	Average Cost (Rs/Ton)	Reference
Farmers Remuneration	500	Farmers
Uprooting cost	775 (750–800)*	Agricultural officers in extension offices
Loading cost	90 (80–100)*	Agricultural officers in extension offices
Transportation cost 0 – 25 Kms.	400	Bio-coal industries

Particulars	Average Cost (Rs/Ton)	Reference
Unloading cost	90 (80–100)*	Agricultural officers in extension offices
Processing cost (Shredding)	350	Local source
Average landed cost	2,205	

* Figures in brackets give the price range during the year

Table 9.25: Final cost of Sugarcane bagasse and stalks considering losses

Description	Crop residue Price/ton	Moisture %	Weight loss per unit	Dust/sand/stone %	Weight loss per unit	Total Weight losses per unit	Crop residue Price Per ton considering losses
Sugarcane bagasse	2,500	25	250	5	50	300	3,571
Stalks of crop residues	2,205	15	150	5	50	200	2,756

Vadodara

Table 9.26: Estimated annual cooking consumption and availability of all stalks in district

A	Total Stalks (Cotton, Castor and Pigeon pea) generated in the district (K.M.T)	555.55
B	Total household in Vadodara district	418,851
C	Households using crop residue as a fuel for cooking	53,126
D	Per day per household cooking requirement (kg)	6
E	Estimated annual consumption of stalks for cooking (K.M.T)	116.34
F	Estimated amount of stalks ploughed back into the field (K.M.T) (30%)	166.67
G	Estimated available stalks of cotton, castor and pigeon pea (K.M.T) [A-E-F]	272.54

Table 9.27: Data of the midday meal cooking pattern

District	Total no. of Institutions	Mode of cooking (No. of Schools)			
		LPG	Solar Cooker	Fire wood	Others
Vadodara	1297	1297	0	0	0

Source: MDM office, Gandhinagar

Table 9.28: Biomass production, consumption, and surplus (K.M.T/annum)

Biomass	Production	Consumption	Surplus
Stalks of cotton, castor and pigeon pea	555.55	283.01	272.54
Paddy husk	12.64	12.64	12.64*
Sugarcane bagasse	8.14	8.14	0
Total	576.33	303.79	285.18

*currently consumed in brick kilns but potentially available for competitive use

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Table 9.29: Cost of stalks of Cotton, Castor and Pigeon pea

Particulars	Stalks of cotton, castor and pigeon pea (Rs/Ton)
Labour charges for uprooting, bundling and loading	1,100 (1,000-1,200)*
Shredding cost	350
Farmer's remuneration	500
Transportation cost (0-25 Kms)	450
Unloading cost	125
Average Landed cost	2,525

* Figure in bracket shows price range

Table 9.30: Cost of Paddy husk

Particulars	Paddy husk (Rs/Ton)	References
Processing cost	1,500	From rice mill owner
Loading, unloading and packing cost	900	From rice mill owner
Transportation (0-50 km)	800	From rice mill owner
Average Landed cost	3,200	

Table 9.31: Final cost of Paddy husk and Stalk of Cotton, Castor & Pigeon pea considering losses

Description	Biomass Price/ton	Moisture		Dust/sand/stone		Total Weight losses per unit	Biomass Price Per ton considering losses
		%	Weight loss per unit	%	Weight loss per unit		
Stalk of cotton, castor and pigeon pea	2,525	15	150	5	50	200	3,156
Paddy husk	3,200	-	-	5	50	50	3,368

Sabarkantha

Table 9.32: Total estimated annual stalks consumption in Sabarkantha District

A	Stalks of castor and cotton generated in Sabarkantha (K.M.T)	579.79
B	Total no of households using crops residue as cooking fuel	69022
C	Per day per household fuel consumption (Kg)	6
D	Annual demand of stalks for cooking (K.M.T)	151.16
E	Amount of stalks ploughed back into the field (K.M.T) [30% of A]	173.94
F	Demand of stalks in bio-coal industries (K.M.T) [10% of A]	57.98
G	Total annual demand of stalks [D+E+F]	383.08
H	Estimated surplus stalks (K.M.T) [A-G]	196.71

Table 9.33: Estimated surplus of Groundnut shell in the district

A	Total groundnut shell generated in the district (K.M.T)	36.44
B	Total groundnut shell consumed in bio-coal industries (K.M.T)	4.05
C	Estimated annual groundnut shell consumed by oil mills (K.M.T)	0.45
D	Estimated annual groundnut shell lost while ground nut eating (K.M.T)	7.29
E	Total annual consumption of groundnut shell (K.M.T) [B+C+D]	11.79
F	Estimated surplus groundnut shell (K.M.T) [A-E]	24.65
G	Potential surplus of groundnut shell (K.M.T) [A-C-D]*	28.70

* Potential surplus includes the quantity of groundnut shell which is currently consumed by bio-coal industries but can be potentially available for alternative competitive use.

Table 9.34: Cost of Cotton stalk

Particulars	Cotton stalk (Rs/Ton)	Reference
Farmer's remuneration	500	From farmer
Labor charges for uprooting, bundling and loading	900 (800-1,000)*	From farmers
Shredding cost	350	From farmers
Transportation cost (0-25 Kms)	500	Local sources
Unloading cost	100	From farmers
Av. Landed cost	2,350	

* Figures in brackets give the price range during the year

Table 9.35: Cost of Castor stalk

Particulars	Castor stalk (Rs/Ton)	Reference
Farmers' remuneration	500	From farmers
Labour charges for uprooting, bundling, and loading	700 (600-800)*	From farmers
Shredding cost	350	From farmers
Transportation cost (0-25 km)	500	From farmers
Unloading cost	100	From farmers
Av. Landed cost	2,150	

* Figures in brackets give the price range during the year

Table 9.36: Cost of Groundnut shell

Particulars	Average Cost (Rs./Ton)	Reference
Cost of groundnut shell	2,875 (2,725-3,025)*	From oil mill
Loading and unloading cost	200	From oil mill
Transportation (0-50 km)	475 (450-500)*	From oil mill
Average Landed cost	3,550	

* Figure in brackets gives the price range during the year

Table 9.37: Final cost of cotton stalk, castor stalk and groundnut shell considering losses

Description	Biomass Price/ton	Moisture		Dust/sand/stone		Total Weight losses per unit	Biomass Price Per ton considering losses
		%	Weight loss per unit	%	Weight loss per unit		
Cotton Stalk	2,350	15	150	5	50	200	2,938

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Description	Biomass Price/ton	Moisture		Dust/sand/stone		Total Weight losses per unit	Biomass Price Per ton considering losses
		%	Weight loss per unit	%	Weight loss per unit		
Castor Stalk	2,150	15	150	5	50	200	2,688
Groundnut shell	3,550	5*	50	-	-	50	3,737

* In case of GN shell, the moisture and handling losses have together been considered at 5%.

9.6. We note that in six districts of the State which were considered for study, the biomass available are cotton stalks, groundnut shell, sugarcane bagasse, paddy husk, castor stalk and pigeon pea. The details of different biomass available in percentage terms in all the six districts of the State, GCV, moisture content, dust/sand/stone content, surplus available and cost inclusive of losses, on account of moisture, dust/sand/stones, etc. as per TERI are stated in Table 1 below.

Table -1

Junagadh							
Weight	Crop residues	Cost (Rs./MT)	Moisture (%)	Dust / Sand / Stone (%)	Cost incl. losses (Rs./MT)	GCV (kcal/kg)	Surplus in KMT/Annum
35%	Cotton Stalk	2050	15	5	2563	4472	270.42
65%	Groundnut shell	3750	5	-	3947	4315	143.19
	Weighted Average				3463	4370	

Bhavnagar							
Weight	Crop residues	Cost (Rs./MT)	Moisture (%)	Dust / Sand / Stone (%)	Cost incl. losses (Rs./MT)	GCV (kcal/kg)	Surplus in KMT/Annum
65%	Cotton Stalk	2350	15	5	2938	4472	560.64
35%	Groundnut shell	3400	5	-	3579	4315	24.47
	Weighted Average				3066	4441	

Amreli							
Weight	Crop residues	Cost (Rs./MT)	Moisture (%)	Dust / Sand / Stone (%)	Cost incl. losses (Rs./MT)	GCV (kcal/kg)	Surplus in KMT/Annum
35%	Cotton Stalk	2250	15	5	2813	4472	1255.38

65%	Groundnut shell	3150	5	-	3316	4315	21.17
	Weighted Average				3140	4370	

Bharuch							
Weight	Crop residues	Cost (Rs./MT)	Moisture (%)	Dust / Sand / Stone (%)	Cost incl. losses (Rs./MT)	GCV (kcal/kg)	Surplus in KMT/Annum
-	Stalks	2205	15	5	2756	4472	386.99
-	Sugarcane Bagasse	2500	25	5	3571	2250	129.60

Sabarkantha							
Weight	Crop residues	Cost (Rs./MT)	Moisture (%)	Dust / Sand / Stone (%)	Cost incl. losses (Rs./MT)	GCV (kcal/kg)	Surplus in KMT/Annum
43.5%	Cotton Stalk	2350	15	5	2938	4472	98.355
43.5%	Castor Stalk	2150	15	5	2688	3876	98.355
13%	Groundnut shell	3550	5	-	3737	4315	28.700
	Weighted Average				2933	4192	

Vadodara							
Weight	Crop residues	Cost (Rs./MT)	Moisture (%)	Dust / Sand / Stone (%)	Cost incl. losses (Rs./MT)	GCV (kcal/kg)	Surplus in KMT/Annum
90%	* Cotton Stalk, Castor and Pigeon Pea'	2525	15	5	3156	4273.67	272.54
10%	Paddy Husk	3200	-	5	3368	3737.00	12.64
	Weighted Average				3177	4220	

* Considering equal weightage (i.e. 1/3) of stalks of Cotton, Castor and Pigeon Pea for GCV purpose i.e. Cotton Stalk (4472), Castor Stalk (3876) and Pigeon Pea (4473)

9.7. Submissions/objections made by the different stakeholders, findings of TERI and Commission's decision in respect of different kinds of biomass are dealt with hereunder:

9.7.1. Cotton Stalk:

- (i) Farmer's remuneration in Table 2.11 of the Report is stated as Rs. 200-500, while in final calculations it is considered as Rs. 300-500. However, the actual remuneration is about Rs. 1000 per MT.

- (ii) The labour cost is considered in the report @ Rs. 200 per day. The minimum labour charges payable as per the Government Notification is about Rs. 300 per day.
- (iii) The shredding cost considered as processing cost of Rs. 350 per MT. However, the cost for hiring such machines is not considered which is about Rs. 350-375 per day.
- (iv) The moisture content in cotton stalk is considered as 15% and dust content as 5% only, while actually the same is about 40% to 50%. Some of the objectors contended that moisture content and dust content considered by TERI is on higher side. It is negligible, hence the same is required to be considered less than 20%.
- (v) Cost of cotton stalks considered as Rs. 2050 in Table 2.11 and Rs. 2250 in Table 3.14 of the report are itself contradictory with each other.
- (vi) Cotton stalks are not directly available to the project developers but the same are available only through agents who are arranging the biomass as mediators between the users and suppliers and charge about Rs. 150/MT to Rs. 200/MT as commission.
- (vii) Cost of cotton stalks is about Rs. 5000 to Rs. 5200 per MT, which is ignored by TERI.
- (viii) No person from TERI approached the project developers, who are having their plants in the State.
- (ix) Transportation cost needs to be considered for 50 km distance

- (x) The capacity of tractor used for transportation of cotton stalk be considered as 5 MT and accordingly the transportation cost needs to be evaluated.
- (xi) The size of sample sent to the laboratory by TERI for evaluation of the GCV of the Cotton stalk was quite low i.e. 16 gram only and the same was also sent after many days after collection from the field. As a result, the sample became dry and therefore the GCV of cotton stalk is not reflecting correct value, which is in the range of 3000 to 3300 Kcal/Kg.

9.7.2. Commission's Analysis and Decision:

9.7.2 (i) The aforesaid contentions of the objectors are without any supporting documents. TERI has carried out ground survey and also obtained sample from the field during their visit to different districts of the State. They have interacted with the farmers, Government officials, private entrepreneurs and also interacted with the local people associated with the subject matter of biomass. They have also interacted with the industries who are using the biomass for different purposes. TERI has also mentioned about alternate uses of biomass.

9.7.2 (ii) Some of the objectors have contended that the cost of cotton stalk may be higher and it may vary from Rs. 800 to Rs. 1000/MT. While some of the objectors contended that no cost is paid to the farmers. Hence, the cost of

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cotton stalks payable to farmers is not correct. The farmers are demanding higher price for the biomass once the biomass utilisation is started by the project developers in their plants and demand goes up. The objectors contended that as stated in the report that, farmers are charging Rs. 300 - Rs. 500 per MT as remuneration, for cotton stalk is not correct. We note that TERI has considered the cost of cotton stalks payable to the farmers as Rs. 300 to Rs. 500 per metric tonne. It is an admitted fact that when the cotton stalks is not used for purposes other than as fodder or as fuel for domestic purpose / cooking, then the same is burnt in the farm by the farmers. Moreover, they need to pay to the labourers for uprooting the same from the farm or alternatively, they themselves uproot the same. Therefore, the contention of the objectors, that the cost of cotton stalk may vary from Rs. 800 to Rs. 1000 per MT does not seem to be valid, because if the alternate use of cotton stalks is available then there is no need to burn the same in the farm by the farmers. It is an additional income available to the farmers from the purchaser who bears the cost of uprooting the cotton stalks from the farm and also removes the same from the farm. Hence, the contention of the objector is not acceptable and the same is rejected.

9.7.2 (iii) The Commission has also considered the remuneration to farmers for cotton stalks as Rs. 400 per MT though as per TERI report the farmers are burning such biomass in their farms. There is uprooting cost to the farmer.

Hence, the Commission decided to consider the above cost as a remuneration to the farmers.

9.7.2 (iv) We note that the project developer needs to ensure the availability of biomass for the project with proper planning. It is also contended by objectors that there are agents who arrange such biomass for the project developers from the farmers and are charging commission of Rs. 150 per MT to Rs. 250 per MT, which is not considered by TERI. We note that TERI has carried out the ground survey and interacted with the farmers, industries etc. They have also studied about the alternative uses of the biomass available in different districts of the State. As far as cotton stalk is concerned, it is recorded by TERI that it has limited other uses. The farmers are burning the cotton stalks in their farms. They are not receiving any amount for such cotton stalks from the industries or the persons who use the same. They need to pay for the uprooting of the cotton stalk, if not purchased by any persons. Thus, instead of receiving the amount for cotton stalks, the farmers are compelled to pay for uprooting of the same from their fields. However, TERI has considered Rs. 300 to Rs. 500 per MT as remuneration to farmers, which is reasonable.

9.7.2 (v) We further note the contention of objectors that the labour charges considered as Rs. 200 per day per labourer is lower than the minimum

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wages payable as per the Government Notification. We note that the cost of labour considered by TERI is based on the interactions with the farmers who are availing the services of labour as per their requirement from time to time. The cost is paid by the farmers to labourers based on the prevailing rate in the villages. Moreover, the labour charges in the villages may vary depending upon the demand and supply of labourers. Therefore, the contention of the objectors that the labour charges need to be considered based on the Government Notification for minimum wages payable to the labourers is unfounded in the aforesaid case. The labour charges paid by the farmers to such labourers depends upon the bargaining. Such labourers are working in unorganised manner and it is possible that the Government Notification/Rules may not be followed strictly in such places. Sometimes it may also vary from season to season and demand and supply of labour during different seasons. Moreover, there is no document provided by the objectors in support of their claim that the labourers are receiving the minimum wages from the farmers. TERI has considered the labour charges in their report based on the interaction with the farmers and others. However, we are of the view that the labourers who carry out the uprooting of the cotton stalk in the farm must be paid the minimum wages, as per Govt. Notification 1/13(1)2017-LS-II dated 20.04.2017 which works out to Rs. 308 for 'C' class area and accordingly, the cost of labour would work out to Rs.1540/MT. The Commission is of the view that Rs.1540/MT is a

reasonable cost for labour charges in compliance of Government Notification for payment of minimum wages.

9.7.2 (vi) It is contended by some of the objectors that the transportation cost considered by TERI is lower than the actual cost required to be incurred by the project developers. The transportation cost for cotton stalk has been considered limited to 25 Kms while biomass at times is required to be transported for 50 Kms or more. Moreover, some of the objectors have raised the issue of capacity of tractors used for transportation of the cotton stalks, i.e. approximately 5 tonne and accordingly the transportation cost works out to Rs. 300 instead of Rs. 500 per tonne considered in the report. We note that availability of biomass within the area of 0 to 25 kms is recorded in the report by TERI and accordingly, the cost of transportation is considered between Rs. 300 to 500 per MT. However, it may be possible that some times the cotton stalk may be either available at a distance beyond 25 kilometres or at a distance shorter than 25 kms. TERI has considered the availability of biomass and transportation distance at an average radius range of 0-25 kms and accordingly the cost of transportation is factored in the cost of cotton stalk. Since there is no certainty about the distance for transportation of the cotton stalks, we decide an average distance of 0-50 kms. for transportation of cotton stalk as a part of the cost of biomass as suggested by the objectors and the cost of transportation as

Rs. 450/MT. Though capacity of tractor may be 5 MT but cotton stalk being voluminous the capacity is to be considered in volume and not in weight.

9.7.2 (vii) The Commission has also considered the cost of loading/unloading at the rate of Rs. 125 per MT wherever the same is applicable. In case of the cotton stalks, etc. the cost for uprooting, shredding, bundling etc. is considered with the consideration that the man power for aforesaid work would be used for loading the biomass for transportation from the farm. Therefore, the cost of unloading only at power plant is considered in such cases.

9.7.2 (viii) Some of the objectors have raised the issue that TERI has not considered the rental cost for equipment utilised for shredding, cutting and bundling of cotton stalks. They have considered only processing cost and not the capital cost of equipment. Thus, the cost of biomass, specifically for the cotton stalks is considered less by TERI. The aforesaid contention of the objectors is not valid and not acceptable because while determining the biomass tariff the Commission considers the cost of various equipments utilised for shredding, cutting, and bundling of biomass as a part of the capital cost and the operating cost of such equipment as part of the O & M cost. The cost stated in the report by TERI is pertaining to the cost of

utilisation of various equipments for shredding of the cotton stalks etc. and the cost of manpower for operating of the said equipment. The same cannot, therefore, be allowed while determining the cost of biomass otherwise there will be duplication of cost and higher impact on the final tariff payable by the distribution licensee and ultimately the consumers. Hence, the aforesaid objection is not acceptable and the same is rejected.

9.7.2 (ix) Some of the objectors have contended that GCV of cotton stalks considered by TERI is not appropriate and valid because the moisture content and dust/sand/stone in the cotton stalk is about 40% to 50%, while in calculation the same has been considered as 20%. Thus, the weight loss of 200 kg. considered is quite low as compared to the actual total weight loss of about 450 to 500 kg. Some of the objectors have contended that the moisture content and weight loss due to dust, sand and stone considered is not warranted because the cotton stalks are cut, shred and bundled in the farm, and therefore, the moisture content is negligible. Moreover, there is no dust, sand and stone with such biomass. We note that the biomass is uprooted from the field and the same is shredded, cut and bundled in the field itself prior to transporting it to the power plant. Therefore, the moisture content present in the cotton stalks get reduced drastically once it is shredded, cut and bundled as it takes some time to complete the process. However, some amount of moisture might still be present in cotton stalks

along with sand/dust and stones. Some weight loss occurs due to moisture and other impurities and the same needs to be factored in the cost of cotton stalks. TERI has carried out ground survey and derived the price of cotton stalks after considering weight loss due to moisture content as about 15% and percentage of impurities like sand, dust, stone as 5%. We, therefore, note that the contentions raised by the objectors are not valid and the same are rejected.

9.7.2 (x) While determining the cost of the cotton stalks the Commission has decided the moisture content of cotton stalk as 15% as stated by TERI in its report because the moisture content is derived based on scientific testing. Further the Commission has also decided to allow additional quantity of the biomass to compensate for the loss which may occur due to moisture and allow the cost of such additional quantity of biomass to provide comfort to the project developers. The moisture content may also vary from season to season. Moreover, during the period from collection of cotton stalks till its actual utilisation the moisture content may reduce drastically than what is stated in the report by TERI. However, the contention of the objectors that it is about 40% to 50% is not admissible and acceptable. The Commission is of the view that the loss due to 15% moisture and 5% dust/sand/stone need to be factored in the tariff by allowing additional quantum of cotton stalk and cost of such additional

quantum to be included in the total cost of cotton stalk in tariff determination.

9.7.2 (xi) We also note that the loss due to moisture content or dust/sand in the biomass leads to requirement of additional quantum of fuel. TERI has therefore, while deciding the cost of biomass with consideration of loss due to moisture, dust sand/stones and GCV of such biomass added additional quantum of 20% of cotton stalks to arrive at the total cost of cotton stalks. Once, the loss due to moisture and dust/sand particles has been factored in as the loss on this account, the contention of the objectors is not sustainable and the same is rejected.

9.7.2 (xii) Some of the objectors have disputed the test certificate submitted with the report by TERI in which GCV of the cotton stalks has been certified as 4472 kcal/kg which is quite high as compared to the actual GCV, the sample size is very small as only 16 gram sample was tested and the same has been tested after lapse of some days since collection of sample from the field. It is contended that as the sample was submitted to the laboratory after lapse of some days, it may have dried and the moisture content may not be present at that time as the moisture content is found to be 7.78% only, which is substantially lower than actual. Further, the cotton stalks whenever collected as biomass and utilised for generation of electricity at

power plant, it has GCV of about 3000 kcal/kg to 3300 kcal/kg. Thus, the GCV considered based on test report by the TERI is not correct. We note that the test certificate has been issued by AES Laboratories (P) Ltd., which is accredited by NABL. As per the certificate a sample of 16 gram cotton stalk was tested by AES Laboratories (P) Ltd. The test results are stated below:

TEST CERTIFICATE

*Issued To: The Energy and Resource Institute (TERI)
Darbari Seth Block, I H C Complex,
Loadhi Raod, New Delhi, Delhi 110 003*

Description: Said to be Cotton Stalk, Sample Qty 16 g in paper envelope.

RESUTLS

<i>Particular Units</i>	<i>Test Method</i>	<i>Results</i>
<u>Chemical Analysis</u>		
<i>Moisture</i>	<i>ASTM D3173-87(1996)</i>	<i>7.78 %</i>
<u>Physical Analysis</u>		
<i>Gross Calorific Value (As Such Basis)</i>	<i>ASTM D5865-99a</i>	<i>4472 cal/gm</i>
<i>Total Parameters: 2</i>		

9.7.2 (xiii) From the aforesaid test report it is clear that the moisture content found is 7.78% and the GCV of the cotton stalks sample is found as 4472 cal/gm. Thus, the test report though confirms about the existence of the moisture content, the same is found to be to the extent of 7.78% during the testing of the sample. Further, the GCV has been evaluated on per gram

basis. The contention of the objectors that the sample may have dried because the cotton stalk may have been sent for testing after 7 or 8 days and during that period the moisture content may have evaporated and the testing would have been carried out on dried sample. We note that the biomass which includes cotton stalks is procured by the project developers and the same is stored in the stockyard so as to ensure uninterrupted availability of biomass to the power plant. Further, the Commission allows interest on working capital on one month's stocks of the biomass. The biomass of cotton stalks purchased by the project developer remains for few days in the stockyard of the project developer before it is utilised as a fuel for power generation. In such a situation the cotton stalks may be as good as the sample provided to laboratory for testing by TERI. It is also possible that the biomass used from the stockyard of the project developer for generation of electricity may not be completely dry and there may be some percentage of the moisture content and GCV equivalent to what is found in the test report i.e. 7.78% and 4472 Kcal/Kg. All the contentions of the objectors in this regard are not acceptable.

9.7.2 (xiv) Based on above, and considering the availability of Cotton stalk, Castor stalk and Pigeon Pea stalk in different districts of the State, the GCV and cost of such biomass are determined by the Commission as stated below:

Table -2

	Moisture Content in %	Sand/Dust /Stone in %	Farmers Remuneration OR Supplier cost as applicable in Rs./Ton	Labour Charges for uprooting, bundling and loading charges in Rs./Ton	Shredding cost in Rs./Ton	Transportation cost in Rs. / Ton	Unloading cost in Rs./Ton	Agent Charges / Traders Margin in Rs./Ton	Average landed Cost in Rs./Ton	Addl. Amount arising on account of weight loss due to moisture, dust, sand in Rs./Ton	Price after considering losses in Rs./Ton
				@ 5 mandays x Rs. 308 per manday		0 - 50 kms					
1	2	3	4	5	6	7	8	9	10	11	12
Stalks of Cotton, Castor, Pigeon Pea	15%	5%	400	1540	350	450	125	125	2990	748	3738

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Table -3

District	Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability in KMT/Annum
Junagadh	35%	Cotton Stalk	3738	4472.00	270.42
Bhavnagar	65%	Cotton Stalk	3738	4472.00	560.64
Amreli	35%	Cotton Stalk	3738	4472.00	1255.38
Bharuch	-	Cotton Stalk	3738	4472.00	386.99
Sabarkantha	43.5%	Cotton Stalk	3738	4472.00	98.355
Vadodara	90%	Cotton Stalk, Castor and Pigeon Pea'	3738	4273.67*	272.54
		Weighted Average	3738	4453.00	

* Considering equal weightage (i.e. 1/3) of stalks of Cotton Stalk (4472), Castor Stalk (3876) and Pigeon Pea (4473)

9.7.3 Groundnut Shells:

- (i) Some of the objectors have stated that TERI in Table 2.12 of the report stated that the groundnut shell price as charged by the oil millers range between Rs, 2800 to Rs. 3400 per MT while in Table 3.15 it is stated that the price of groundnut shell available from the oil millers including the loading and unloading cost ranges between Rs. 2500 to Rs. 3000. Moreover, the loading and unloading cost may be about Rs. 200 as per Table 2.12 of the report. Further, additional cost of transportation within the radius of 0 to 50 kilometers of about Rs. 450 is considered in Table 2.12 whereas the same is considered as Rs. 400 in Table 3.15 and thus, the price of groundnut shell has been worked out as Rs. 3750 per MT in Table 2.12 and Rs. 3150 in Table 3.15. Thus, in the report itself there is difference in the price of biomass considered by TERI.

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- (ii) Some of the objectors contended that the cost of groundnut shell stated in the report is not correct because the groundnut shell is not available directly from the oil millers to the project developers but the same is available only through agents/traders. They need to pay about Rs. 150 to Rs. 250 per MT to agents as commission/remuneration. Further, TERI report says that the groundnut shell is supplied at site of the plant or consumption place in gunny bags which is not correct as the same is supplied in open truck or tractor.
- (iii) Some of the objectors have contended that as per TERI report the moisture content of groundnut shell is 5% while the project developers who are using the groundnut shells have observed the same to be about 15%. Thus, the moisture content considered in the report is quite low and it is reflected in the cost of the groundnut shell.
- (iv) Sales tax at the rate of 5% applicable on the groundnut shell is not considered by TERI which is required to be factored.
- (v) Sample size sent for testing of GCV was very small and highly insufficient to derive conclusion. The GCV of groundnut found in the test report as 4315 cal/gm apparently represents a totally unscientific approach of sampling.

9.7.4 Commission's Analysis and Decision:

9.7.4 (i) We note that Table No. 2.12 of Chapter 2 of the Report is pertaining to cost of groundnut shell in Junagadh district while Table 3.15 of Chapter 3 is pertaining to cost of groundnut shell in Amreli district. Thus, the cost considered by TERI in aforesaid two tables is based on the price prevailing in the respective districts. We note that TERI while considering the crop residue cost from oil mills in Table 3.15 pertaining to Amreli district has taken the same in the range of Rs. 2500 – 3000 and has also mentioned that the same is including the loading and unloading cost, which is considered about Rs. 200 in the report by TERI for other districts, i.e. Junagadh and Bhavnagar districts. We note that the loading and unloading cost needs to be factored in while deciding the price of groundnut shell as the groundnut shell is required to be loaded at oil mill and unloaded at the place of consumption, i.e. at power plant.

9.7.4 (ii) TERI has considered the price of ground nut shell in Junagadh district as Rs. 2800 – 3400 per MT. The average of the said range works out to Rs. 3100 per MT. In Amreli district it is stated to be in the range of Rs. 2500 – 3000 per MT which includes loading and unloading charges while in Bhavnagar district it is stated in the range of Rs. 2500 – 3000 per MT. The availability of groundnut shell in the Junagadh district was found to be 143.19 KMT., which is highest in the State. The comparative quantum of

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groundnut shell available in Amreli District is 21.17 KMT, while in Bhavnagar the same is 24.47 KMT. The Commission has decided the cost of groundnut shell as Rs. 3100 per MT considering the highest quantum of groundnut shell available in the Junagadh district.

9.7.4 (iii) The Commission has also considered the cost of loading/unloading at the rate of Rs. 125 per MT, wherever the same is applicable. The groundnut shells are loaded at Oil Miller's place and unloaded at power stations by two different sets of labourers. Therefore, the loading and unloading cost is applied at both places at the rate of Rs. 125 per MT.

9.7.4 (iv) As far as the cost of agent, i.e. Rs. 150 to Rs. 250 per metric tonne is concerned, it may be noted that when any project is set up by the project developer he needs to operate it for 25 years and for the uninterrupted operation of the plant, it is the duty of the project developer to ensure availability of fuel, its quantum and price. There is no reason to involve the agents for procuring the groundnut shells from oil millers or any other persons. However, if any agent or trader is required to be involved, the cost of such agent must be as low as possible because such agent carries out only trading or arranges the supply of biomass from the oil millers without any investment. However, in order to have assured supply of groundnut shells, we decide to consider the cost of agent as Rs. 125/MT to work out the total cost of groundnut shells as suggested by the objectors.

9.7.4 (v) We note that the moisture content considered for groundnut shell is disputed by some of the project developers. However, it is undisputed that there may be some moisture content in the groundnut shell.

9.7.4 (vi) We note that TERI has considered additional quantum of groundnut shells to take care of the loss due to moisture and handling loss and accordingly factored the additional cost of the same.

9.7.4 (vii) In case of groundnut shells the Commission has considered the moisture content as 5% as stated by TERI in its report. The moisture content in the groundnut shells also varies in different seasons. We clarify that the contention of the objectors that moisture content of the groundnut shells is higher than 5% is not acceptable. Further, the aforesaid contention is also not correct and admissible because the groundnut shells are available from the oil mills where the groundnuts are crushed for oil manufacturing after due process of separation of the groundnut from shells. In the absence of valid data with regard to moisture content of groundnut shell provided by the objectors to prove that the moisture content of the groundnut shell is higher than 5%, it is not appropriate to accept such contention. However, the Commission is of the view that the loss which may occur due to moisture content of the groundnut shells needs to be factored in while determining the biomass price. The Commission decides

that the additional quantity of the groundnut shells is required to take care of the loss due to moisture content and also the cost of such additional quantity of groundnut shells is required to be allowed for determining the cost of groundnut shells as biomass fuel. Hence, we decide to consider additional quantity of 5% of groundnut shells while determining the total cost of groundnut shells and GCV so as to promote generation from biomass as laid down by the Act and Policy.

9.7.4 (viii) Based on above, and considering the availability of Groundnut shells in different districts of the State, the GCV and cost are determined by the Commission as stated below:

Table - 4

	Moisture Content in %	Sand/ Dust/ Stone in %	Farmers Remuneration OR Supplier cost as applicable in Rs./Ton	Labour Charges for uprooting, bundling and loading charges in Rs./Ton	Shredding cost in Rs./Ton	Transportation cost in Rs. / Ton	Unloading cost in Rs./Ton	Agent Charges / Traders Margin in Rs./Ton	Average landed Cost in Rs./Ton	Addl. Amount arising on account of weight loss due to moisture, dust, sand in Rs./Ton	Price after considering losses in Rs./Ton
						0 - 50 kms					
1	2	3	4	5	6	8	9	10	11	12	13
Groundnut Shell	5%	0%	3100	125	0	450	125	125	3925	207	4132

Table – 5

District	Weight	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
Junagadh	65%	Groundnut shell	4132	4315	143.19
Bhavnagar	35%	Groundnut shell	4132	4315	24.47
Amreli	65%	Groundnut shell	4132	4315	21.17
Bharuch	-	-	-	-	-
Sabarkantha	13%	Groundnut shell	4132	4315	28.70
Vadodara	-	-	-	-	-
		Weighted Average	4132	4315	

9.7.5 Castor Stalk, Pigeon Pea Stalk, Sugarcane Bagasse, Paddy Straw and Paddy

Husk:

9.7.5 (i) In case of stalk of castor, stalk of pigeon pea, bagasse, paddy straw/husk etc. the Commission has considered the availability of aforesaid biomass, GCV, moisture content, cost etc. as recorded by TERI in its report, which is not objected by any objectors.

9.7.5 (ii) We note that the cost of transportation of paddy husk in the radius of 0 – 50 kms. is stated as Rs. 800 per MT by TERI in its report which seems valid due to low weight and higher volume for the same weight in comparison to other biomass transportation for a distance of 0-50 kms. Therefore, Commission decides to accept the same as Rs. 800 per MT. The cost of loading/unloading of paddy husk at the rate of Rs. 450/MT is worked out considering the requirement of manpower for handling voluminous quantum and low weight as compared to the manpower required for other biomass with same weight. Hence, the

Commission decides to adopt the labour cost for loading and unloading of paddy husk as considered by TERI.

9.7.5 (iii) Further, we also note that TERI has conducted study of the Biomass which includes Bagasse available in various districts like Bharuch, Surat, Navsari, Tapi, Valsad, Narmada, Gir Somnath, Vadodara etc. TERI has considered the average landed cost of Bagasse as Rs. 2500 per tonne considering the material cost of bagasse as Rs. 1750 per MT, transportation (0-50 kms) cost of Rs. 350 per MT, loading and unloading cost of Rs. 200 per MT and Trader's Margin of Rs. 200 per MT, while the GCV of Bagasse is stated by TERI as 2250 Kcal/Kg, which is not disputed by any stakeholders/objectors. TERI has considered labour and handling charges of Rs. 200 per tonne, transportation cost of Rs. 350 per tonne and traders' margin of Rs. 200 per tonne. However, considering the activities involved in removing the bagasse from the sugar factory, spreading it on the ground for drying, stacking the dried bagasse, loading it on tractor trolley for transportation to the power plant and unloading at the plant, the Commission decides to consider Rs. 325 per tonne for all the above activities. We, also, decide to accept the GCV of bagasse as 2250 Kcal/Kg as per TERI. The cost of bagasse is arrived at Rs. 2075/MT inclusive of Rs. 325 per MT towards traders' margin, loading, unloading, transportation etc.

9.7.5 (iv) The availability of Castor Stalks, Paddy Husk, and Bagasse in different districts of the State, its quantum, price, GCV, etc. are stated in the following Tables.

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Table – 6

District	Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability in KMT/Annum
Bharuch	-	Sugarcane Bagasse	2075	2250	129.60

Table – 7

District	Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability in KMT/Annum
Sabarkantha	43.5%	Castor Stalk	3738	3876	98.35

Table – 8

District	Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability in KMT/Annum
Vadodara	10%	Paddy Husk	3368	3737	12.6

9.7.5 (vi) Based on the above and considering the availability of Castor Stalk, Pigeon Pea Stalk, Paddy Husk & Sugarcane Bagasse in different districts of the State, their GCV and cost are determined by the Commission as stated in the table below:

Table - 9

Various Costs and Parameters for Biomass

	Moisture Content in %	Sand/ Dust/ Stone in %	Farmers Remuneration OR Supplier cost as applicable in Rs./Ton	Labour Charges for uprooting, bundling and loading charges in Rs./Ton	Shredding cost in Rs./Ton	Transportation cost in Rs. / Ton	Unloading cost in Rs./Ton	Agent Charges / Traders Margin in Rs./Ton	Average landed Cost in Rs./Ton	Addl. Amount arising on account of weight loss due to moisture, dust, sand in Rs./Ton	Price after considering losses in Rs./Ton
						0 - 50 kms					
1	2	3	4	5	6	8	9	10	11	12	13
Castor & Pigeon Pea Stalk	15%	5%	400	1540	350	450	125	125	2990	748	3738
Paddy Husk	0%	5%	1500	450	0	800	450	0	3200	168	3368
Sugarcane Bagasse	0%	0%	1750	325*	0	0	0	0	2075	0	2075

* Includes cost towards activities involved in removing the bagasse from the sugar factor, spreading it on ground for drying, stacking the dried bagasse, loading it on tractor trolley for transportation to the power plant and unloading at the plant.

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10. The Commission has determined average availability of different types of biomass in different districts, GCV of different biomass, and average cost of the different biomass based on TERI Report with its decision as stated above.
- 10.1. The percentage of moisture content, sand/dust/stone in such biomass, farmers' remuneration or supplier cost in Rupees Per Tonne, labour charges for uprooting and loading of various biomass, shredding cost, transportation cost, unloading cost etc. as decided are reproduced in the Tables below.

Table -10

Various Costs and Parameters for Biomass

	Moisture Content in %	Sand / Dust / Stone in %	Farmers Remuneration OR Supplier cost as applicable in Rs./Ton	Labour Charges for uprooting, bundling and loading charges in Rs./Ton	Shredding cost in Rs./Ton	Transportation cost in Rs. / Ton	Unloading cost in Rs./Ton	Agent Charges / Traders Margin in Rs./Ton	Average landed Cost in Rs./Ton	Addl. Amount arising on account of weight loss due to moisture, dust, sand in Rs./Ton	Price after considering losses in Rs./Ton
						0 - 50 kms					
1	2	3	4	5	6	8	9	10	11	12	13
Stalks of Cotton, Castor, Pigeon Pea	15%	5%	400	1540	350	450	125	125	2990	748	3738
Groundnut Shell	5%	0%	3100	125	0	450	125	125	3925	207	4132
Paddy Husk	0%	5%	1500	450	0	800	450	0	3200	168	3368
Sugarcane Bagasse	0%	0%	1750	325*	0	0	0	0	2075	0	2075

* Includes costs towards activities involved in removing the bagasse from the sugar factor, spreading it on ground for drying, stacking the dried bagasse, loading it on tractor trolley for transportation to the power plant and unloading at the plant.

Table -11

Junagadh District				
Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
35%	Cotton Stalk	3738	4472	270.42
65%	Groundnut shell	4132	4315	143.19

Bhavnagar District				
Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
65%	Cotton Stalk	3738	4472	560.64
35%	Groundnut shell	4132	4315	24.47

Amreli District				
Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
35%	Cotton Stalk	3738	4472	1255.38
65%	Groundnut shell	4132	4315	21.17

Bharuch District				
Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
-	Cotton Stalk	3738	4472	386.99
-	Sugarcane Bagasse	2075	2250	129.60

Sabarkantha District				
Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
43.5%	Cotton Stalk	3738	4472	98.355
43.5%	Castor Stalk	3738	3876	98.355
13%	Groundnut shell	4132	4315	28.700

Vadodara District				
Weightage	Crop residues	Cost (Rs./ton)	GCV (kcal/kg)	Surplus-Availability KMT/Annum
90%	Cotton Stalk, Castor & Pigeon Pea	3738	*4273.67	272.54
10%	Paddy Husk	3368	3737.00	12.64

*Considering equal weightage (i.e. 1/3) of stalks of Cotton (4472), Castor (3876) and Pigeon Pea (4473)

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Table -12

COST OF COTTON STALK - JUNAGADH DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Cotton Stalk (Rs./Ton)	Reference	
Farmer's remuneration	200-500 (350)	From the farmer	400
Labour charges for uprooting, bundling and loading	800-1000 (900)	From the farmer	1540
Shredding cost	350	From the farmer	350
Transportation cost (0-25 km)	350	Local Source	450
Unloading cost	100	Local Source	125
Agent Charges			125
Average Landed Cost	2050		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	2563		3738

Table -13

COST OF GROUNDNUT SHELL - JUNAGADH DISTRICT

Particulars	As per TERI Report		Cost considered by GERC Rs./Ton)
	Groundnut shell (Rs./Ton)	Reference	
Charged by Oil Mill	2800 - 3400 (3100)	From the Oil Mill	3100
Labour charges for loading & unloading	200	From the Oil Mill	250
Transportation cost (0-50 km)	450	From the Oil Mill	450
Agent Charges			125
Average Landed Cost	3750		3925
Moisture in percentage (%)	5%		5%
Weight Loss due to moisture in Kg./Ton	50		50
Percentage of Dust / Sand / Stone (%)	0%		0%

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Weight Loss due dust/sand/stone in Kg./Ton	0		0
Total Weight loss in Kg./Ton	50		50
Price considering losses in Rs./Ton	3947		4132

Table -14

COST OF COTTON STALK - BHAVNAGAR DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Cotton Stalk (Rs./Ton)	Reference	
Farmer's remuneration	300-500 (400)	From the farmers	400
Labour charges for uprooting, bundling and loading	800-1200 (1000)	From the farmers	1540
Shredding cost	350	From the farmers	350
Transportation cost (0-25 km)	500	Local Source	450
Unloading cost	100	From the farmers	125
Agent Charges			125
Average Landed Cost	2350		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	2938		3738

Table -15

COST OF GROUNDNUT SHELL - BHAVNAGAR DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Groundnut shell (Rs./Ton)	Reference	
Charged by Oil Mill	2500-3000 (2750)	From the Oil Mill	3100
Labour charges for loading & unloading	200	From the Oil Mill	250
Transportation cost (0-50 km)	450	From the Oil Mill	450
Agent Charges			125
Average Landed Cost	3400		3925

Moisture in percentage (%)	5%		5%
Weight Loss due to moisture in Kg./Ton	50		50
Percentage of Dust / Sand / Stone (%)	0%		0%
Weight Loss due dust/sand/stone in Kg./Ton	0		0
Total Weight loss in Kg./Ton	50		50
Price considering losses in Rs./Ton	3579		4132

Table -16

COST OF COTTON STALK - AMRELI DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Cotton Stalk (Rs./Ton)	Reference	
Farmer's remuneration	300 - 500 (400)	From the farmers	400
Labour charges for uprooting, bundling and loading	800-1000 (900)	From the farmers	1540
Shredding cost	350	From the farmers	350
Transportation cost (0-25 km)	300-500 (400)	Local Source	450
Unloading cost	200	From the farmers	125
Agent Charges			125
Average Landed Cost	2250		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	2813		3738

Table -17

COST OF GROUNDNUT SHELL - AMRELI DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Groundnut shell (Rs./Ton)	Reference	
Charged by Oil Mill	2500-3000 (2750)	From the Oil Mill	3100
Labour charges for loading & unloading	*		250
Transportation cost (0-50 km)	400	From the Oil Mill	450

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Agent Charges			125
Average Landed Cost	3150		3925
Moisture in percentage (%)	5%		5%
Weight Loss due to moisture in Kg./Ton	50		50
Percentage of Dust / Sand / Stone (%)	0%		0%
Weight Loss due dust/sand/stone in Kg./Ton	0		0
Total Weight loss in Kg./Ton	50		50
Price considering losses in Rs./Ton	3316		4132

(*Labour charges included in cost of G.N. Shell as per TERI Report)

Table -18

COST OF COTTON STALK - BHARUCH DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs/Ton)
	Cotton Stalk (Rs/Ton)	Reference	
Farmer's remuneration	500	From the farmer	400
Labour charges for uprooting, bundling and loading	750-800 (775)	Agricultural Officers	1540
Shredding cost	350	Local Source	350
Transportation cost (0-25 km)	400	Bio-coal Industries	450
Loading cost	80-100 (90)	Agricultural Officers	
Unloading cost	80-100 (90)	Agricultural Officers	125
Agent Charges			125
Average Landed Cost	2205		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	2756		3738

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Table -19

COST OF SUGARCANE BAGASSE - BHARUCH DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs/Ton)
	Sugarcane Bagasse (Rs/Ton)	Reference	
Charged by Sugar Mill	1600-1900 (1750)	From Sugar Industries	1750
Labour charges for loading & unloading	160-240 (200)	Bio-Coal Industries	325*
Transportation cost (0-50 km)	300-400 (350)	Bio-Coal Industries	
Traders Margin/Agent Charges	200	Bio-Coal Industries	
Average Landed Cost	2500		2075
Moisture in percentage (%)	25%		0%
Weight Loss due to moisture in Kg./Ton	250		0
Percentage of Dust / Sand / Stone (%)	5%		0
Weight Loss due dust/sand/stone in Kg./Ton	50		0
Total Weight loss in Kg./Ton	300		0
Price considering losses in Rs./Ton	3571		2075

* Includes cost towards activities involved in removing the bagasse from the sugar factor, spreading it on ground for drying, stacking the dried bagasse, loading it on tractor trolley for transportation to the power plant and unloading at the plant.

Table -20

COST OF STALKS OF COTTON, CASTOR AND PIGEON PEA - VADODARA DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs/Ton)
	Stalks of Cotton, Castor, Pigeon Pea (Rs/Ton)	Reference	
Farmer's remuneration	500		400
Labour charges for uprooting, bundling and loading	1000-1200 (1100)		1540
Shredding cost	350		350
Transportation cost (0-25 km)	450		450
Unloading cost	125		125
Agent Charges			125
Average Landed Cost	2525		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50

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Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	3156		3738

Table -21

COST OF PADDY HUSK - VADODARA DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs/Ton)
	Paddy Husk (Rs/Ton)	Reference	
Processing cost	1500	From Rice Mill Owner	1500
Labour charges for loading & unloading	900	From Rice Mill Owner	900
Transportation cost (0-50 km)	800	From Rice Mill Owner	800
Agent Charges			0
Average Landed Cost	3200		3200
Moisture in percentage (%)	0%		0%
Weight Loss due to moisture in Kg./Ton	0		0
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	50		50
Price considering losses in Rs./Ton	3368		3368

Table -22

COST OF COTTON STALK - SABARKANTHA DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs/Ton)
	Cotton stalk (Rs/Ton)	Reference	
Farmer's remuneration	500	From the farmers	400
Labour charges for uprooting, bundling and loading	800-1000 (900)	From the farmers	1540
Shredding cost	350	From the farmers	350
Transportation cost (0-25 km)	500	Local Source	450
Unloading cost	100	From the farmers	125
Agent Charges			125
Average Landed Cost	2350		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%

Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	2938		3738

Table -23

COST OF CASTOR STALK - SABARKANTHA DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Castor stalk (Rs./Ton)	Reference	
Farmer's remuneration	500	From the farmers	400
Labour charges for uprooting, bundling and loading	600-800 (700)	From the farmers	1540
Shredding cost	350	From the farmers	350
Transportation cost (0-25 km)	500	From the farmers	450
Unloading cost	100	From the farmers	125
Agent Charges			125
Average Landed Cost	2150		2990
Moisture in percentage (%)	15%		15%
Weight Loss due to moisture in Kg./Ton	150		150
Percentage of Dust / Sand / Stone (%)	5%		5%
Weight Loss due dust/sand/stone in Kg./Ton	50		50
Total Weight loss in Kg./Ton	200		200
Price considering losses in Rs./Ton	2688		3738

Table -24

COST OF GROUNDNUT SHELL - SABARKANTHA DISTRICT

Particulars	As per TERI Report		Cost considered by GERC (Rs./Ton)
	Groundnut shell (Rs./Ton)	Reference	
Charged by Oil Mill	2725-3025 (2875)	From the Oil Mill	3100
Labour charges for loading & unloading	200	From the Oil Mill	250
Transportation cost (0-50 km)	450-500 (475)	From the Oil Mill	450
Agent Charges			125
Average Landed Cost	3550		3925

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Moisture in percentage (%)	5%		5%
Weight Loss due to moisture in Kg./Ton	50		50
Percentage of Dust / Sand / Stone (%)	0%		0%
Weight Loss due dust/sand/stone in Kg./Ton	0		0
Total Weight loss in Kg./Ton	50		50
Price considering losses in Rs./Ton	3737		4132

10.2. The Commission has gone through all objections raised by each stakeholders and has tried to make a balance and considered opinion to reach at final numbers so as to protect the consumers' interest as well as to promote renewable energy in the State in line with objectives of the Act.

Table - 25

NET SURPLUS AVAILABILITY OF DIFFERENT BIOMASS AND ITS COST AND GCV

Based on availability of net surplus in six districts and Weighted Average

Net Surplus	Biomass	Wt. Average Cost	Wt. Average GCV
KMT		Rs./Tonne	Kcal/Kg
2662.63	Cotton Stalk	3738	4472
217.53	Groundnut Shell	4132	4315
189.20	Castor Stalk	3738	3876
90.85	Pigeon Pea Stalk	3738	4473
12.64	Paddy Husk	3368	3737
3172.85	Weighted Average for Gujarat	3764	4423
129.60	Sugarcane Bagasse	2025	2250

Weighted Average Cost for Gujarat in (Rs./Ton)	3764	Weighted Average GCV for Gujarat in (Kcal/Kg.)	4423
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11. Considering above, the derived weightage average GCV of different biomass (except Bagasse) available in the six district of the State is 4423 kcal/kg and the weighted average cost of works out to Rs. 3764 per MT. As the study is conducted in the FY 2017-18, the Commission decides to consider the aforesaid cost and GCV as the base for FY 2017-18, while deciding the energy charge for the project utilising the above fuel. The aforesaid parameters are the base parameters for determination of tariff i.e. energy charge of the biomass project.
12. The Commission further directs the biomass developers to submit the information on monthly consumption of each biomass at the beginning of each quarter to nodal agency and the Discom(s) with whom PPA has been signed. This information should be duly certified by Comptroller and Auditor General empanelled Chartered Accountant.
13. We order accordingly.

Sd/-

[P. J. THAKKAR]
Member

Sd/-

[K. M. SHRINGARPURE]
Member

Sd/-

[ANAND KUMAR]
Chairman

Place: Gandhinagar.
Date: 09/02/2018.

ANNEXURE : F

Annex F

Extra No. 347

વાર્ષિક લવાજમનો દર રૂ. ૪૦૦૦/-



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The Gujarat Government Gazette

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Separate paging is given to this Part in order that it may be filed as a Separate Compilation.

PART IV-C

Statutory Rules and Orders (Other than those published in Parts I, I-A and I-L) made by Statutory Authorities other than the Government of Gujarat including those made by the Government of India, the High Courts, the Director of Municipalities, the Commissioner of Police, the Director of Prohibition and Excise, the District Magistrates and the Election Commission, Election Tribunals, Returning Officers and other authorities under the Election Commission.

GUJARAT ELECTRICITY REGULATORY COMMISSION (GERC)

GUJARAT ELECTRICITY REGULATORY COMMISSION (PROCUREMENT OF ENERGY FROM RENEWABLE SOURCES) (SECOND AMENDMENT) REGULATIONS, 2018

Notification: No. 01 of 2018

In exercise of Powers conferred under Section 61, 86 and 181 of the Electricity Act, 2003 (Act No. 36 of 2003) and all other powers enabling it in this behalf, and after previous publication, the Gujarat Electricity Regulatory Commission hereby makes the following regulations, to amend Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010 (hereinafter referred to as "The Principal Regulations") namely:

1) Short Title Extent and Commencement:

(i) These regulations shall be called the Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) (Second Amendment) Regulations, 2018.

(ii) These Regulations shall extend to the whole of the State of Gujarat.

2) These regulations shall come into force with effect from the date of their publication in the Official Gazette.

3) Substitution of Table 1 of Regulation 4.1:

Table 1 provided in the Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) (First Amendment) Regulations, 2014 is substituted by following Table - I and II:

TABLE - I

Year	Minimum Quantum of purchase (in %) from renewable energy sources (in terms of energy in kWh).			
	Wind (%)	Solar (%)	Others (Biomass, Bagasse, Hydro and MSW) (%)	Total (%)
(1)	(2)	(3)	(4)	(5)
2010-11	4.5	0.25	0.25	5.0
2011-12	5.0	0.5	0.5	6.0
2012-13	5.5	1.0	0.5	7.0
2013-14	5.5	1.0	0.5	7.0
2014-15	6.25	1.25	0.5	8.0
2015-16	7.0	1.5	0.5	9.0
2016-17	7.75	1.75	0.5	10.0

TABLE - II

Year	Minimum Quantum of purchase (in %) from renewable energy sources (in terms of energy in kWh).			
	Wind (%)	Solar (%)	Others (Biomass, Bagasse, MSW and Hydro) (%)	Total (%)
(1)	(2)	(3)	(4)	(5)
2017-18	7.75	1.75	0.5	10.00
2018-19	7.95	4.25	0.5	12.70
2019-20	8.05	5.5	0.75	14.30
2020-21	8.15	6.75	0.75	15.65
2021-22	8.25	8.0	0.75	17.00

4) Substitution of para 2 of Principal Regulation 4.1:

If the above mentioned minimum quantum of power purchase either from Solar or Wind or Others (including Biomass, Bagasse, Hydro and MSW) is not available in a particular year of FY 2017-18 to 2021-22, then in such cases, additional renewable energy available either from Solar or Wind or Others shall be utilised for fulfilment of RPO in accordance with Column 5.

5) Addition in Regulation 4.1 of the Principal Regulation:

A new third para is added after second para of Regulation 4.1 of the Principal Regulations as under:

Distribution Licensee(s) shall compulsorily procure 100% power produced from all the Waste-to-Energy Projects in the State of Gujarat, in the ratio of their procurement of power from all sources including their own, at the tariff discovered through a Competitive Bidding Process as envisaged in the Gujarat Waste to Energy Policy, 2016 subject to ceiling of generic tariff as determined by the Commission.

ROOPWANT SINGH, IAS

Secretary

Gujarat Electricity Regulatory Commission
Gandhinagar, Gujarat

Place: Gandhinagar.

Date: 21/04/2018.

ANNEXURE : G

19/2/2019-BPD
Ministry of New & Renewable Energy

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Block No. 14, CGO Complex,
Lodi Road, New Delhi- 110003
Dated: 26 September 2019

NOTIFICATION

Subject: Clarification regarding power generated from co-firing of biomass in thermal power plants as renewable energy

In continuation to "Policy for Biomass utilisation for Power Generation through co-firing in Pulverised Coal fired Boilers" notified by the Ministry of Power on 17 November 2017 (www.cea.nic.in/reports/others/thermal/tetd/policy_biomass_utilization.pdf), and an advisory for utilizing biomass in coal based thermal power plants by the Central Electricity Authority (CEA) on 24 November 2017 (www.cea.nic.in/reports/others/thermal/tetd/Biomass%20Utilization%20Advisory.pdf), it is clarified that power generated from co-firing of biomass in the thermal power plants is renewable energy and is eligible for meeting non-solar Renewable Purchase Obligation (RPO).

2. The Central Electricity Regulatory Commission (CERC) has been requested to formulate and notify a procedure/methodology for quantifying the energy produced from biomass in biomass co-fired thermal power plants in a reliable and accurate manner. It has further been suggested that the procedure/methodology so determined may have built-in transparency and accountability, including putting an obligation on thermal power generators to publish the quantum of biomass used and energy generated from biomass co-firing in the public domain. Further, procedure/methodology notified by CERC would form the basis for respective State Electricity Regulatory Commissions (SERCs) and other relevant agencies for computing the energy produced from biomass in biomass co-fired thermal power plants, and also for determination of tariff, wherever applicable.

Dipesh Pherwani
(Dipesh Pherwani)
Scientist-B

- To
1. Secretary, Ministry of Power.
 2. Chairperson, CERC / all SERCs
 3. Chairperson, Central Electricity Authority

Copy to Director (NIC), MNRE for uploading the notification on the Ministry's website

ANNEXURE : H

Annex H

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**CENTRAL ELECTRICITY REGULATORY COMMISSION
(NEW DELHI)**

Suo Motu Petition No. 12/SM/2019

Coram:
Shri P.K.Pujari, Chairperson
Shri I.S.Jha, Member

Date of Hearing : 17.12.2019
Date of Order : 18.02.2020

ORDER

In the matter of

Proposed Methodology for Estimation of Electricity Generated from Biomass in Biomass Co-fired Thermal Power Plants.

The Central Electricity Regulatory Commission (hereinafter referred to as 'the Commission') has recognized the use of biomass in biomass co-fired coal based thermal power plants under sub-clause (k) of clause (2) of the Regulation 19 and clause (4) of Regulation 43 of the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019 (hereinafter referred to as the 2019 Tariff Regulations). These Regulations notified on 7th March, 2019, introduced the regulatory framework for allowing use of biomass in coal based thermal power plants.

2. The Commission initiated the process of specifying methodology for estimation of electricity generated from biomass in biomass co-fired coal based thermal power plants and accordingly, proposed a draft methodology in this regard. While proposing this methodology, the Commission had considered the following references.



- a) Reference of Ministry of Power, Government of India, No. 11/86/2017-
Th11 dated 17th Nov'2017 with regard to the "Policy for Biomass Utilization
for Power Generation through Co-firing in Pulverized Coal Fired Boilers".
 - b) Advisory dated 24.11.2017 of Central Electricity Authority (CEA) to
thermal power plants for utilizing biomass in coal based thermal power
plants.
 - c) Clarification of Ministry of New and Renewable Energy ("the MNRE"),
Government of India issued vide reference dated 26.9.2019 stating that
the power generated from co-firing of biomass in coal based thermal
power plants is renewable energy and is eligible for meeting non-solar
Renewable Purchase Obligation (RPO).
3. Salient aspects of the proposed methodology were as under.
- a) Proposed methodology can be applied to biomass co-fired coal based
thermal plants whose tariff is determined by "Appropriate Commission"
under Section 62 as well as thermal plants whose tariff is adopted by the
"Appropriate Commission" under section 63 of the Electricity Act, 2003;
 - b) Energy generated from biomass can be worked out based on the actual
consumption of biomass and coal rather than on normative operational
parameters of Station Heat Rate and Auxiliary Power Consumption;
 - c) Principle of proportion can be the basis to work out the energy generated
from biomass. The energy output is estimated in proportion to the heat
input from biomass out of total heat input from biomass and coal;



- d) Heat input can be worked out based on consumption and quality (GCV) of the coal and biomass;
 - e) Consumption of coal and biomass can be worked out based on opening balance, receipt and closing balance of coal and biomass.
4. The proposed methodology was put in public domain and comments/suggestions of various stakeholders were invited vide order dated 26.11.2019 in this Suo Motu petition. Subsequently, public hearing on the draft methodology was held on 17.12.2019 for soliciting views of stakeholders.

Submission of the Stakeholders during Public Hearing

5. The Captive Power Producers Association has requested that the proposed methodology should also be made applicable to captive power plants. They have further submitted that for co-generation power plant, there is a need for a methodology factoring in use of steam for purposes other than generation of electricity. The Association has submitted two alternative methods for consideration of the Commission.
6. Representative of NTPC Ltd submitted that in the proposed methodology, electricity generated from biomass has been proposed to be estimated based on electricity generated at the Generator Terminal (GT). The energy meter installed at Generator Terminal is normally not used for billing purpose and hence, estimates based on Generator Terminal may not be acceptable to distribution licensees.
7. The comments/suggestions/objections of the stakeholders on the proposed methodology have been examined by the Commission.



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Applicability of the Methodology

8. As per Para 7 of the order dated 26.11.2019 in this Suo-Moto Petition, the applicability of the methodology was proposed as under:

"7. The suggested methodology to estimate the energy generated from co-firing of biomass has been framed on the actual consumption of biomass and coal rather than on normative operational parameters of Station Heat Rate and Auxiliary Power Consumption. Such a methodology, which does not use normative operational parameters, can be applied both to thermal plants whose tariff is determined by "Appropriate Commission" under Section 62 as well as thermal plants whose tariff is adopted by the "Appropriate Commission" under section 63 of the Electricity Act, 2003."

9. The Commission had proposed to restrict the application of the methodology only to thermal plants under section 62 or section 63 of the Electricity Act, 2003 since the Commission regulates tariff of centrally owned generating stations and the generating stations having composite scheme for sale or purchase of electricity in more than one state under Section 79(1)(a) and 79(1)(b) of the Act. The methodology was not proposed to cover captive or cogeneration plants. The Captive Power Producers Association has submitted that since captive power plants and co-generation power plants are also eligible under MNRE letter dated 26.9.2019 for the purpose of renewable purchase obligation, the methodology should cover captive power plants and co-generation power plants.

10. We have perused the references of MNRE dated 26.9.2019. The MNRE has clarified that the power generated from co-firing of biomass in coal based thermal power plants is renewable energy and is eligible for meeting non-solar Renewable Purchase Obligations (RPOs).



11. We observe that biomass can also be used in thermal captive power plants similar to thermal generation station. We, therefore, are of the view that the methodology shall also be applicable to the captive power plant using co-firing of biomass. The methodology specified in this order will therefore, be applicable to the captive power plant also that co-fires biomass.

12. While in case of captive power plant, the entire heat generated from coal and biomass is used to generate power, in case of co-generation plant, only part of the heat is used to generate power. But, the underlying principle remains applicable i.e. the proportion of heat input from biomass to total heat input for power generation. Accordingly, the methodology specified in this order shall also be applicable for co-generation power plant.

Gross Calorific Value (GCV) measurement & Fuel Stock

13. The Captive Power Producers Association has submitted that GCV measurement point and methodology may be indicated so as to avoid any disputes on measurement of values. In this regard, it is observed that the GCV measurement point is already specified under the 2019 Tariff Regulations. The relevant extract is reproduced below, which shall be adopted by the captive power plants and co-generation power plants.

“(31) ‘GCV as Received’ means the GCV of coal as measured at the unloading point of the thermal generating station through collection, preparation and testing of samples from the loaded wagons, trucks, ropeways, Merry-Go-Round (MGR), belt conveyors and ships in accordance with the IS 436 (Part-1/ Section 1)- 1964:

Provided that the measurement of coal shall be carried out through sampling by third party to be appointed by the generating companies in accordance with the guidelines, if any, issued by Central Government:



Provided further that samples of coal shall be collected either manually or through hydraulic augur or through any other method considered suitable keeping in view the safety of personnel and equipment:

Provided also that the generating companies may adopt any advance technology for collection, preparation and testing of samples for measurement of GCV in a fair and transparent manner".

14. The format specified by the Commission in the 2019 Tariff Regulations captures the requirement of data applicable to the thermal power plants. For captive power plants and co-generation power plants, appropriate format may be developed by the respective State Electricity Regulatory Commission or certifying agency of the State.

Special Energy Meter

15. NTPC Ltd has submitted that measurement at the Special Energy Meter (SEM) installed by them at Generator Terminal (GT) may not be acceptable to the system operator and distribution licensees. In this regard, it is observed that the Auxiliary Energy Consumption (AEC) is worked out on the basis of SEM on Generator Terminal and these are similar to SEMs installed by CTU. Therefore, we do not foresee any difficulty in using SEMs installed on Generator Terminal by the generators. However, the Regional Power Committee, in constitution with respective Regional Load Dispatch Centre or State Load Dispatch Centre as the case may be, shall ensure that the SEMs installed by the generator should be got calibrated from time to time for energy accounting. The Captive Power Plant and Co-generation Power Plant shall ensure appropriate metering arrangement at generator terminal.



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16. The methodology for estimating the energy generated from bio-mass in biomass co-fired coal based thermal power plants, including captive power plants and co-generation plants has been specified in Annexure I and is a part of this order.

Sd/-
(I. S. Jha)
Member

Sd/-
(P. K. Pujari)
Chairperson

Annexure-I



Methodology for estimation of electricity generated from biomass in biomass co-fired coal based thermal power plants, including captive and co-generation power plants co-firing bio-mass.

The methodology specified hereunder is to be followed by ISGS, RPCs for estimating electricity generated from biomass in biomass co-firing coal based thermal power plants, including captive and co-generation power plants co-firing bio-mass.

Step-1:

2. The electricity generated from biomass shall be estimated at Generator Terminal on monthly basis in accordance with the following formulae:

$$Eb(G) = [(Qb \times Gb) / ((Qc \times Gc) + (Qb \times Gb))] \times E(GT)$$

Where,

$Eb(G)$ = Electrical energy generated by bio-mass at Generator terminal during the month (kWh);

Qb = Quantity of bio-mass consumed during the month (kg)

Gb = Weighted average Gross Calorific Value (GCV) of bio-mass consumed during month (kCal/kg)

$E(GT)$ = Gross electrical energy generated at Generator Terminal during the month (kWh)

Qc = Quantity of coal burnt during the month (kg)

Gc = Weighted average GCV of coal burnt during the month (kCal/kg)

3. The product $(Qb \times Gb)$ represents heat (in Kcal) input through bio-mass during the month and shall be estimated on monthly basis by applying following formulae:



$$\begin{aligned}
 Q_b \times G_b \text{ (kCal)} &= \{ \text{opening balance of bio-mass (kg) X weighted average GCV} \\
 &\quad \text{of opening balance of bio-mass (kCal/kg)} \} \\
 &+ \{ \text{quantity of bio-mass received during the month (kg) X} \\
 &\quad \text{weighted average GCV of bio-mass received during the} \\
 &\quad \text{month (kcal/kg)} \} \\
 &- \{ \text{closing stock of bio-mass (kg) X weighted average GCV of} \\
 &\quad \text{the closing balance of bio-mass (kCal/kg)} \}
 \end{aligned}$$

4. The product ($Q_c \times G_c$) represents heat (in Kcal) input through coal during the month (kcal) and shall be estimated on monthly basis by applying the following formulae:

$$\begin{aligned}
 Q_c \times G_c \text{ (kCal)} &= \{ \text{opening balance of coal (kg) X weighed average GCV of} \\
 &\quad \text{opening balance of coal (kCal/kg)} \} \\
 &+ \{ \text{quantity of coal received during the month (kg) X weighted} \\
 &\quad \text{average GCV of coal received during the month (kCal/kg)} \} \\
 &- \{ \text{closing stock of coal (kg) X weighted average GCV of the} \\
 &\quad \text{closing balance of coal (kCal/kg)} \}
 \end{aligned}$$

Step-2:

5. The ex-bus electrical energy generated by using bio-mass shall be estimated on monthly basis by applying following formulae:

$$E_b \text{ (ex-bus)} = E_b(G) \{ 1 - [(E(GT) - ESO) / E(GT)] \}$$

Where,

$$E_b \text{ (ex-bus)} = \text{Electrical energy generated by bio-mass ex-bus during the month (kWh);}$$

$$E_b(G) = \text{Electrical energy generated by bio-mass at Generator terminal during the month arrived at Step-1(kWh)}$$



/ 2 /

E(GT) = Total electrical energy generated at generator terminal
during the month (kWh) ;
ESO = Total Energy Sent Out (ex-bus) during the month (kWh);

6. The generating company shall provide information to the beneficiaries and publish them in the following manner:

- a) The generating company shall maintain separate fuel accounts for coal and bio-mass, with opening balance, fuel received during the month and closing balance in kg. The generating company shall also maintain separate GCV (in kCal/kg) accounts for coal and bio-mass, with weighted average GCV of the opening balance, weighted average GCV of the fuel received during the month and weighted average GCV of the closing balance at the end of the month;
- b) These monthly accounts of fuel and GCV, duly signed by the authorised official of the generating company shall be published on its website along with the bills towards purchase of coal and bio-mass.
- c) These monthly fuel and GCV accounts shall be made available to authorized representative/s of beneficiaries and RLDC/SLDC on demand. Any authorised representative of beneficiaries shall be allowed to witness the GCV testing of bio-mass.
- d) Generating company shall keep beneficiaries informed about the co-firing of bio-mass with coal. Authorised representatives of the beneficiaries shall be allowed inspection during the period when bio-mass is being co-fired.



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- e) The generating company shall publish the quantum of bio-mass fired and the energy generated from bio-mass based on the formulae specified above on its website.



ANNEXURE: I



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Date: 2nd February 2021

To

The Director,
Gujarat Energy Development Agency
4th floor, Block No. 11 & 12
Udyog Bhavan, Sector -11,
Gandhinagar-382 017

Kind Attention : Shri Bijal Shah, IAS

Sub: Proposed Methodology for Estimation of Electricity Generated from Biomass in Biomass Co-fired Thermal Power Plants.

Dear Sir,

Reliance Industries Limited (RIL) is having its refinery and petrochemical units situated in Gujarat. For its petrochemical plants located in Dahej Manufacturing Division (DMD) and Hazira Manufacturing Division (HMD), RIL is having coal based Captive power Plants.

In order to promote co-firing of biomass in thermal power plants, Ministry of New and Renewable Energy (MNRE), Government of India, vide its notification dated 26.9.2019 has clarified that the power generated from co-firing of biomass in thermal power plants is renewable energy and is eligible for meeting non-solar Renewable Purchase Obligation (RPO) and has requested Hon'ble Central Electricity Regulatory Commission (CERC) to formulate and notify the procedure for methodology for quantifying the energy produced from biomass in biomass co-fired thermal power plants in a reliable and accurate manner. Accordingly, CERC has notified the methodology for estimation of electricity generated from Biomass in Biomass co-fired thermal power plants on 18.02.2020, copy of which is attached herewith.

Based on above, we are planning to use biomass co-firing at our DMD and HMD CPP. We propose to meet our non-solar RPO from consumption of biomass in biomass co-firing based on the methodology as approved by CERC. Please find attached herewith the documents and sample working along with the data, which

"VRAJ", Near Suvidha Shopping Center, Paldi, Ahmedabad - 380 007. Phone : +91-79-66779100, Fax : +91-79-40094910

Registered Office : 3rd Floor, Maker Chambers - IV, 222 Nariman Point, Mumbai - 400 021. India
CIN: L17110MH1973PLC019786 • Website: www.ril.com



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will be used to arrive at power generated by use of biomass.

Request you to approve the proposal so as to enable us to start the use of biomass at our CPPs at DMD and HMD.

We shall provide any further details / clarifications required, if any.

Thanking you,

Your Sincerely,
For Reliance Industries Ltd.

A handwritten signature in black ink, appearing to be 'DB Shah', written over a circular stamp.

DB Shah
Sr Vice President

Cfwc: The Chairman, GEDA, Sh I M Bhavsar..... for information please

Encls.:

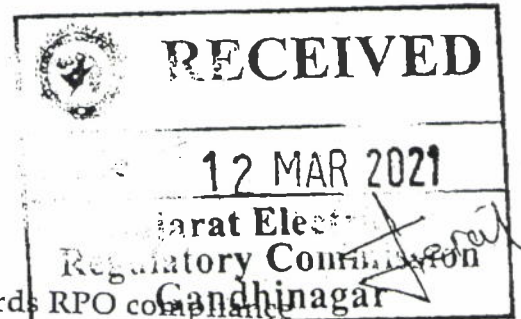
1. MNRE Notification Dated 26th September 2019
2. CERC Order Dated 18.02.2020.
3. A brief note on our plant.
4. CCPP SHP steam distribution PFD.
5. Proposed Format for submission of RPO compliance.

ANNEXURE J CCOW
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Reliance
Industries Limited

Date: 09-03-2021

The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road 5C, Zone -5,
GIFT City, Gandhinagar.



Sub :- Consideration of Biomass Co-firing towards RPO compliance
Ref :- 1) GERC RPO Regulation No 3 of 2010
2) MNRE Notification Dated 26th Sept 2019
3) CERC order Dated 18th Feb 2020

Dear Sir,

We would like to inform you that we have coal based captive power plant at our Dahej and Hazira Manufacturing unit. According to GERC RPO Regulation 2010 we are obligated entity and required to consume renewable energy towards our RPO compliance. We are cofiring biomass in our CPP along with coal.

Whereas 'Biomass' is defined as a renewable energy source in regulation 2(p) of GERC RPO Regulation 2010, the definition also covers other sources as approved by Ministry of New and Renewable Energy, Government of India or by the State of Gujarat. The definition is reproduced below for ready reference

'Renewable energy sources' in this context means non-conventional, renewable electricity generating sources such as mini/micro hydel, wind, solar, biomass and bagasse based co-generation, urban/municipal waste or such other sources, (which are generally inexhaustible and can be replenished in a short period of time) as approved by Ministry of New and Renewable Energy, Government of India or by the State of Gujarat;

We would like to bring it to the notice of Hon GERC that MNRE vide notification Dated 26th September 2019 clarified that co-firing of biomass in thermal power plants is renewable energy and is eligible for meeting non solar RPO. MNRE further requested CERC to issue procedure/methodology for quantifying the energy produced from biomass in biomass cofired thermal power plant which would form the basis for State Electricity Regulatory Commissions (SERCs) and other relevant agencies for computing the energy produced from biomass in biomass cofired thermal power plants.

In response to above Hon CERC vide its order Dated 18th Feb 2020 specified methodology for estimation of electricity generated from biomass in biomass cofired coal based thermal power plants, captive power plants and co-generation plants.

Having this background we have already applied to Gujarat Energy Development Agency to consider the electricity generated by cofiring of biomass in our CPP towards compliance of non-solar RPO and submitted the data of biomass fired and electricity generated from it as per CERC methodology.

It is therefore humbly requested that Hon GERC may issue necessary order to implement the Hon CERC order in the State of Gujarat.

Thanking You

Yours faithfully
For Reliance Industries Ltd.

• *Aswini B. Shah*

(Authorized Signatory)

Copy swrt -

1. Hon Chairman, Gujarat Electricity Regulatory Commission
2. Hon Member (L), Gujarat Electricity Regulatory Commission
3. Hon Member (T), Gujarat Electricity Regulatory Commission

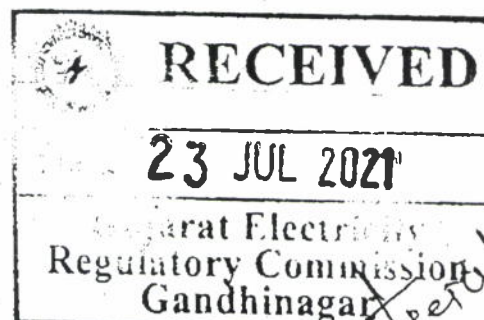
Enclosures:

- 1) GERC RPO Regulation 2010.
- 2) MNRE Notification Dated 26th Sep 2019
- 3) CERC order Dated 18th Feb 2020
- 4) Our letter to GEDA Dated 2nd Feb 2021

o/c

21st July, 2021

The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road 5C, Zone 5,
GIFT City, Gandhinagar.



Sub :- Consideration of Biomass Co-firing towards RPO compliance
Ref :- 1) GERC RPO Regulation No 3 of 2010
2) MNRE Notification Dated 26th Sept 2019
3) CERC order Dated 18th Feb 2020

Dear Sir,

We had vide our letter dated 9th March 2021 requested Hon'ble GERC to issue necessary directives for the certifications of the energy generated by co-firing of the biomass to GEDA as per the methodology determined by the Hon'ble CERC. The request made to Hon'ble GERC is reproduced hereunder:

"We would like to inform you that we have coal based captive power plant at our Dahej and Hazira Manufacturing unit. According to GERC RPO Regulation 2010 we are obligated entity and required to consume renewable energy towards our RPO compliance. We are co-firing biomass in our CPP along with coal.

Whereas 'Biomass' is defined as a renewable energy source in regulation 2(p) of GERC RPO Regulation 2010, the definition also covers other sources as approved by Ministry of New and Renewable Energy, Government of India or by the State of Gujarat. The definition is reproduced below for ready reference

'Renewable energy sources' in this context means non-conventional, renewable electricity generating sources such as mini/micro hydel, wind, solar, biomass and bagasse based co-generation, urban/municipal waste or such other sources, (which are generally inexhaustible and can be replenished in a short period of time) as approved by Ministry of New and Renewable Energy, Government of India or by the State of Gujarat;

We would like to bring it to the notice of Hon GERC that MNRE vide notification Dated 26th September 2019 clarified that co-firing of biomass in thermal power plants is renewable energy and is eligible for meeting non solar RPO. MNRE further requested CERC to issue procedure/methodology for quantifying the energy produced from biomass in biomass co-fired thermal power plant which would form the basis for State Electricity Regulatory Commissions (SERCs) and other relevant agencies for computing the energy produced from biomass in biomass co-fired thermal power plants.



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In response to above Hon CERC vide its order Dated 18th Feb 2020 specified methodology for estimation of electricity generated from biomass in biomass co-fired coal based thermal power plants, captive power plants and co-generation plants.

Having this background we have already applied to Gujarat Energy Development Agency to consider the electricity generated by co-firing of biomass in our CPP towards compliance of non-solar RPO and submitted the data of biomass fired and electricity generated from it as per CERC methodology.

It is therefore humbly requested that Hon GERC may issue necessary order to implement the Hon CERC order in the State of Gujarat."

Based on above regulations and as per the methodology devised by the Hon'ble CERC, Reliance has started submitting the data to GEDA and Hon'ble GERC from February 2021, onwards.

We once again request Hon'ble Commission to issue the necessary directives to GEDA to consider power generated from co-fired biomass towards compliance of non-solar RPO.

Thanking you,
Yours faithfully,

For Reliance Industries Limited

Ashish B Mehta

Authorized Signatory

Copy swrt -

1. Hon Chairman, Gujarat Electricity Regulatory Commission
2. Hon Member (L), Gujarat Electricity Regulatory Commission
3. Hon Member (T), Gujarat Electricity Regulatory Commission

Enclosures:

- 1) GERC RPO Regulation 2010.
- 2) MNRE Notification Dated 26th Sep 2019
- 3) CERC order Dated 18th Feb 2020
- 4) Our letter to GEDA Dated 2nd Feb 2021
- 5) Our letter to GERC Dated 9th Mar 2021

ANNEXURE : K

No - 1075
GERC/Legal/2021/No.
Date: 10.08.2021.
12 AUG 2021



Gujarat Electricity Regulatory Commission

6th Floor, GIFT ONE,
Road 5-C, Zone 5, GIFT CITY,
Gandhinagar-382 355, GUJARAT, INDIA
Ph. : +91-79-2360 2000 Fax : +91-79-2360 2054/55
E-mail : gerc@gercln.org Website : www.gercln.org

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R.P.A.D.

To,

Shri Ashish B. Shah
Reliance Industries Limited,
Vraj, Near Chandanbala Tower,
Opp. Suvidha Shopping Centre,
Paldi, Ahmedabad - 380007.

Sub: Your Letter dated 21.07.2021 - Consideration of Biomass Co-firing towards RPO compliance

With reference to the above letter, this to inform you that for any decision or direction of the Commission, if so desired, the person/entity may file a petition before the Commission as per the provisions of GERC (Conduct of Business) Regulations, 2004 and GERC (Fees, Fines and Charges) Regulations, 2005.

With Regards,


[Roopwant Singh, IAS]
Secretary

Gujarat Electricity Regulatory Commission
Gandhinagar, Gujarat

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GEDA/GERC/2021-22/10/3401

October 26, 2020

To,
The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road-5C, Zone-5,
GIFT CITY,
Gandhinagar- 382355

Petition No. 2012/2021.

Sub: Reply of petition under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, for issuing necessary directives to the Respondent Gujarat Energy Development Agency (GEDA) to consider power generated from Co-Fired Biomass towards compliance of Non-Solar Renewable Purchase Obligation.

Ref: GERC letter no. GERC/ Legal/2021/No.1489 dated 05/10/2021 received dated 11/10/2021.

Sir,

With reference to the above subject, due to the portfolio of the responsible person attending the matter is changed recently. It is requested to Hon'ble commission to give extension 15 working days for reply of the petition.

Thanking You,

Yours Faithfully

H.S. Silajiya

Senior Project Executive

- For kind person pl.
- Hon'ble Chairman
- " Member
- " Member
- Secretary

W. Ham
AD (Legal) / Ex (Legal)
Process
D.H.
01/11/2022

When
- or later,

Legal
A
D.H.M.
Inward No - 4610
Date : 1 NOV 2021

ચોથો માળ, બ્લોક નં. ૧૧ અને ૧૨ હિંદોગભવન
સેક્ટર-૧૧, ગાંધીનગર - ૩૮૨ ૦૧૭.

4th Floor, Block No. 11-12, Udhogbhavan,
Sector-11, Gandhinagar-382017. India.

Ph. : 079-232 57251-53
Fax : +91 79 232-47097, 57255
e-mail : director@geda.org.in
www.geda.gujarat.gov.in



GEDA

ગુજરાત ઊર્જા વિકાસ એજન્સી

GUJARAT ENERGY DEVELOPMENT AGENCY

A Government of Gujarat Organisation

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BY RPAD

GEDA/GERC/2021-22/11/3607

November 17, 2021

To,
The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road-5C, Zone-5,
GIFT CITY,
Gandhinagar- 382355

2012
Ref: 2021

Sub: Regarding Time limit extension for reply of the petition.

- Ref: 1). GERC letter no. GERC/ Legal/2021/No.1489 dated 05/10/2021 received dated 11/10/2021.
2). GEDA letter no. GEDA/GERC/2021-22/10/3401 dated 26.10.2021

Respected Sir,

With reference to the above subject, Hon'ble commission is requested to give further 10 working days extension due to review of the financial aspect and roles of concerned statutory government authority for reply of the petition.

Thanks & Regards


H.S. Silajiya

Senior Project Executive

For kind perusal please
- Hon'ble chairman
- " Member
- " Member
- Secretary

AD (Legal) / Ex (Legal)
Put in relevant files
23/11/2021
AD (Legal)

Legal-
23/11/2021
4916
Date: 23 NOV 2021



GEDA

ગુજરાત ઊર્જા વિકાસ એજન્સી

GUJARAT ENERGY DEVELOPMENT AGENCY

A Government of Gujarat Organisation

pet: 2012
2021

232

GEDA/GERC/2021-22/11/3831

BY RPAD

November 29, 2021

To,
The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road-5C, Zone-5,
GIFT CITY,
Gandhinagar- 382355

AD (Legal)/Ex (Legal)
Legal
Process
- No affidavit
- which petition
etc
P.H.
02/12/2021

CH.K.C.
Forward No - 5090
Date: - 2 DEC 2021

Sub: Reply of petition under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, for issuing necessary directives to the Respondent Gujarat Energy Development Agency (GEDA) to consider power generated from Co-Fired Biomass towards compliance of Non-Solar Renewable Purchase Obligation.

Ref: GEDA letter no. GERC/ 2021-22/11/3607 dated 17/11/2021.

MOST RESPECTFULLY SHOWETH:

1. The petitioner submitted that he had coal base power plant for Captive Consumption at Dahej (270 MW) and Hajira (360 MW) location. His submission for considering generation from co-firing of bio-mass towards its non-solar RPO Compliance and towards Solar RPO compliance after fulfilment of Non-solar RPO.
2. GEDA request to Hon'ble commission to provide necessary guidance / directives/ procedures for RPO compliance to Hon'ble commission.
3. In GERC order no.1/2018, Clause no: 2.4.2, point a)., (i) in which it is mentioned that,
 - i) "Biomass based power projects using Rankine Cycle Technology: i) Biomass based power projects using Rankine Cycle Technology: Capital cost is the most critical component while determining tariff in a regulated environment. The main cost components of biomass based power project are (i) boiler, (ii) turbine and generators, (iii) condenser, (iv) control cabinets, (v) chimney for flue gases, (vi) transformer and associated equipments, (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....."

GEDA request Hon'ble commission to give guidance for process of such kind of projects.

Also for your kind information Reliance Industries limited has not initiated any process till to date for registration.

In conclusion, as a State Nodal Agency we request commission to give guidance/ procedure / necessary instructions considering financial & environmental aspects for RPO compliance mechanism of co-firing of biomass in thermal power plants for further process & submission.

The respondent craves leave to add, alter, amend the grounds as stated in reply, as and whenever required please.

Thanks & regards

— for kind personal pl.
— Hon'ble chairman
— " Member
— " Member
— Secretary

02/12/21

H.S. Silajiya

Senior Project Executive

ચોથો માળ, બ્લોક નં. ૧૧ અને ૧૨ ઉદ્યોગભવન
સેક્ટર-૧૧, ગાંધીનગર - ૩૮૨ ૦૧૭.

4th Floor, Block No. 11-12, Udhogbhavan,
Sector-11, Gandhinagar-382017, India.

Ph.: 079-232 57251-53

Fax : +91 79 232-47097, 57255

e-mail : director@geda.org.in

www.geda.gujarat.gov.in



GEDA

ગુજરાત ઊર્જા વિકાસ એજન્સી

GUJARAT ENERGY DEVELOPMENT AGENCY

A Government of Gujarat Organisation

BY RPAD

GEDA/GERC/2021-22/01/ 4706

January 18, 2022

To,

✓ The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road-5C, Zone-5,
GIFT CITY,
Gandhinagar- 382355

Sub: Reply of petition under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, for issuing necessary directives to the Respondent Gujarat Energy Development Agency (GEDA) to consider power generated from Co-Fired Biomass towards compliance of Non-Solar Renewable Purchase Obligation.

Ref: GERC letter no. GERC/ Legal/2021/No.2010 dated 13/12/2021 received dated 16/12/2021.

Sir,

With reference to the above subject, please find attached herewith the Reply of GEDA as respondent for the aforementioned petition under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto.

Thanking You,


H.S. Silajiya

Senior Project Executive

Encl: As above

CC to:

M/s. Reliance Industries Limited,
Dahej Manufacturing Division, P.O. Dahej,
Taluka: Vagra, Dist – Bharuch - 392130

AD (Legal)/Ex (Legal)
Put in relevant
file
18/01/2022

INWARD	No - 0372
Date: 18 JAN 2022	

ચોથો માળ, બ્લોક નં. ૧૧ અને ૧૨ ઉદ્યોગભવન
સેક્ટર-૧૧, ગાંધીનગર - ૩૮૨ ૦૧૭.

4th Floor, Block No. 11-12, Udhogbhavan,
Sector-11, Gandhinagar-382017, India.

Ph. : 079-232 57251-53

Fax : +91 79 232-47097, 57255

e-mail : director@geda.org.in

www.geda.gujarat.gov.in

BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION
GANDHINAGAR

BOOK NO. 02
SR NO. 21
DATE 18/01/2022

PETITION NO. 2012/2021

Sunil S. Rathod
SUNIL S. RATHOD
NOTARY
GOVT. OF INDIA

18 JAN 2022
..... Petitioner

M/s. Reliance Industries Limited

Versus

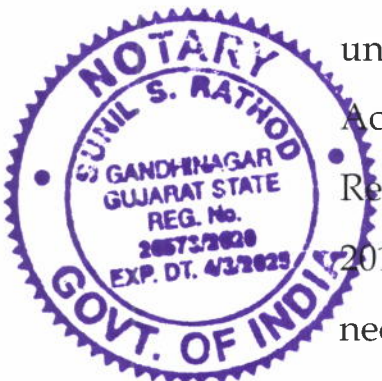
Gujarat Energy Development Agency (GEDA)

..... Respondent

AFFIDAVIT-IN-REPLY ON BEHALF OF THE RESPONDENT

I, H S Silajiya, SPEX, GEDA, Aged: Adult, Occupation : Service, Udhyog Bhavan, Sector -11, Gandhinagar, Respondent herein, do solemnly affirm and state on oath as under:-

1. I am Respondent herein and I have gone through the memo of Petition. I have also gone through the record pertaining to the case and after making myself conversant with the facts and circumstances of the case, I am filing the present Affidavit-in-Reply.
2. I am not dealing with the para-wise to the averments and contentions raised in the memo of petition. I crave leave to file further detailed affidavit in case of need to bring more correct facts on record before this Hon'ble Commission.
3. I further say and submit that, I file present Reply to the petition under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, for issuing necessary directives to the Respondent Gujarat Energy

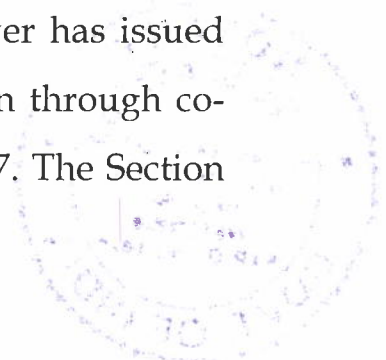


Development Agency (GEDA) to consider power generated from Co-Firing of biomass in thermal power plant towards compliance of Non-Solar Renewable Purchase Obligation.

3.1 I further say and submit that it is the case of the petitioner that petitioner has coal base power plant for Captive Consumption at Dahej (270 MW) and Hajira (360 MW) location. The submission for considering generation from co-firing of bio-mass towards its non-solar RPO Compliance and towards Solar RPO compliance after fulfilment of Non-solar RPO.

3.2 I further say and submitted that the petitioner has filed present petition on the strength of the direction with regard to the methodology as per CERC order in Suo Moto Petition no.12/SM/2019 Dated:18/02/2020. It is humbly submitted that the petitioner has directly claim the benefit of above referred order but, it is pertinent to note that the GEDA is not informed by the petitioner as to whether the petitioner has fully complied with the direction with regard to the methodology as per CERC order in Suo Moto Petition no.12/SM/2019 Dated:18/02/2020. It is further submitted that as it is not categorically stated in the memo of petition by the petitioner that the petitioner has fully complied with the direction with regard to the methodology as per CERC order in Suo Moto Petition no.12/SM/2019 Dated:18/02/2020, it is therefore submitted that in absence of any definite statement of the petitioner the GEDA would not be in a position to submit before this Hon'ble Commission as to whether the petitioner is entitled for the prayers made in memo of petition. I, therefore submit that this Hon'ble Commission may not exercise discretion in favour of present petitioner.

4. I further say and submit that the Ministry of Power has issued policy for Biomass utilization for Power generation through co-firing in Pulverized coal fired boilers on 17-11-2017. The Section



5.(a) of the said policy is reproduce here as under for the kind perusal of this Hon'ble Court :

" All fluidised bed and pulverised coal units (coal based thermal power plants) **except those having ball and tube mill** , of power generation utilities, public or private, located in India, shall endeavour to use 5-10% blend of biomass pellets made, primarily , of agro residue along with coal after assessing the technical feasibility, viz. safety aspects."

4.1 It is therefore, submitted that safety aspects referred above along with technical feasibility is required to be scrutinize and therefore may kindly be directed to the petitioner to do needful for the scrutiny for the parameters e.g. SHR, GCV. PLF, Criteria with considering PPA if any....etc.

4.2 I further say and submit that the Pollutions control criteria is also required to be scrutinize and therefore may kindly be directed to the petitioner to do needful for the scrutiny as to observance for co-firing of biomass in thermal power plant.

5. At present there is no any such consideration in our regulation. However, as per Petitioner, they filed this petition due to their estimated financial losses but they does not mention about any safety/ environmental harms.

Enventhough Petitioner seek to amend guidelines and methodology to consider generation from co-firing of bio-mass towards its non-solar RPO Compliance and towards Solar RPO compliance after fulfilment of Non-solar RPO.

6. I further say and submit that GEDA as a State Nodal Agency requests this Hon'ble Commission (that while considering the prayer made by the present petitioner in the memo of petition above canvassed aspects may kindly be considered and further request commission) to issue guidance/ procedure / necessary instructions considering financial and environmental aspects for

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RPO compliance mechanism of co-firing of biomass in thermal power plants for further process & submission.

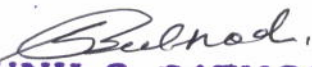
Whatever is stated hereinabove is true to the best of my knowledge, information and belief and I believe the same to be true.

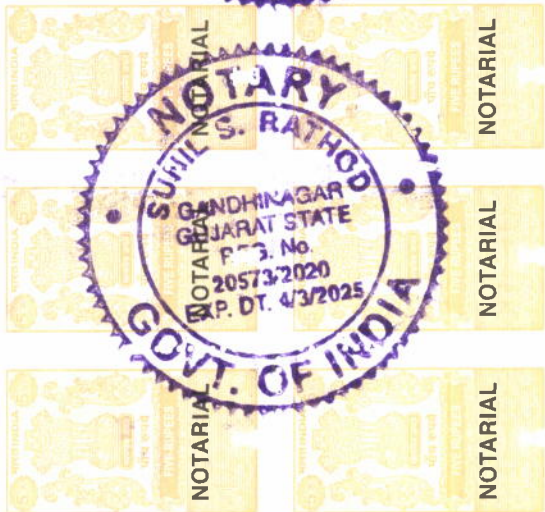
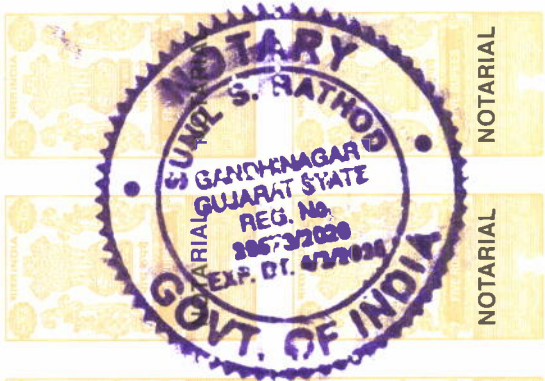
Solemnly affirmed at Gandhinagar on this 18th day of January, 2022.

Identified by me




Deponent

**SOLEMNLY AFFIRMED
SIGNED BEFORE ME**

SUNIL S. RATHOD
NOTARY
GOVT. OF INDIA
1 8 JAN 2022



IDENTIFIED BY ME



Advocate/Person _____
Add. _____
Sanad No : G/ 1

1 8 JAN 2022



 **GUJARAT ENERGY DEVELOPMENT AGENCY**
Undertaking Of Gujarat Government


સર્વોચ્ચ સત્તા
ગુજરાત સરકાર
Government of Gujarat



Name : H. S. Shajhya
Designation : Senior Project Executive
Date of Birth : 18/07/1967
Blood Group : B+ ve


Autho. Sign.

Signature 





BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION

PETITION NO. 2012 OF 2021

RELIANCE INDUSTRIES LTD

.... Petitioners

Versus

.... Respondents

for kind personal pl.

- Hon'ble chairman

- " Member

- " Member

- Secretary

Adm
31/3/22

VAKALATNAMA

We, RELIANCE INDUSTRIES LTD
do hereby Nominate, authorize and appointGANDHI LAW ASSOCIATES
ADVOCATES & SOLICITORS

Represented by Keyur D. Gandhi, Nirav Joshi, Raheel S. Patel, Kunal J. Vyas, Nisarg Desai, Divya Pravalikha Batthini, Rachna Pastore, Devarsh Trivedi and Divyesh Bais, hereinafter called the Advocates, to be my/our Advocates in the above noted matter and authorize them:

To act, appear and plead in the above noted matter in this Hon'ble Court and/or any Quasi-Judicial Authority or any other Court where the same may be tried or heard or in the appellate courts.

To sign, file and present representations, pleadings, applications, appeals, cross objections or petitions for execution, review, revision, restoration, withdrawal, compromise or other petitions, replies objections or affidavits or other documents as may be deemed necessary or proper for the prosecution of the said case at all stages.

To file and take back documents.

To withdraw or compromise the said case or submit to arbitration any differences or disputes that may arise in or touching upon any matter relating to the said case.

To take out execution proceedings.

To deposit, draw and receive moneys, cheques and grant receipts therefore and to do all things and acts which may be necessary to be done for the progress and in the course of the prosecution of the said case.

To appoint, instruct any other legal practitioner, authorizing him to exercise the power and authorities hereby conferred upon the advocate/s;

AND we agree to ratify all acts done by the aforesaid advocate/s in pursuance of this authority.

Dated this the ____ day of _____, 2022.

Nisarg Desai

Accepted

Contact Details for service:

Phone : +91-_____
Email: efilings@gandhilaw.in

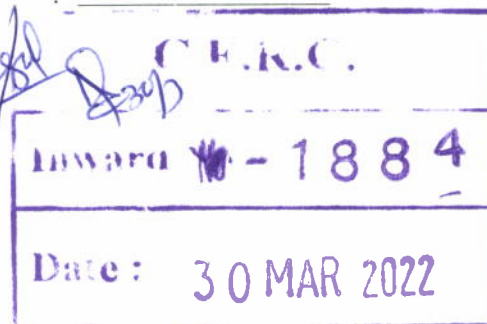
For, Reliance Industries Ltd.

Ashish B Shah
Authorised Signatory

Client(s) Signature : _____
Name : _____
Designation : _____
Company Seal : _____



AD (Chargal) / Ex (Chargal)
Put in relevant
files
31/03/2022



all

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BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY
COMMISSION, GANDHINAGAR

PETITION NO. 2012 OF 2021

M/s. Reliance Industries Limited

.... Petitioner

Versus

Gujarat Energy Development Agency

.... Respondent

AD (Legal) / Ex Chegal
Put in relevant files
07/05/2022

AFFIDAVIT-IN-REJOINDER ON BEHALF OF THE PETITIONER

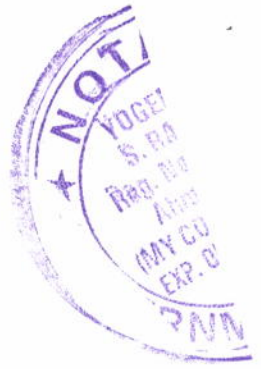
The Petitioner most respectfully submits as under: -

NO - 2 678

Date: - 7 MAY 2022

1. The Petitioner has filed the captioned Petition seeking appropriate directions under Proviso 4.1 of Regulation 4 and Proviso 8.1, 8.2, 8.3 of Regulation 8 of Gujarat Electricity Regulatory Commission (Procurement of Energy from Renewable Sources) Regulations, 2010, to consider units generated through Biomass co-firing along with coal at its Captive Power Plants situated in Dahej Manufacturing Division (DMD) and Hazira Manufacturing Division (HMD) towards compliance of its non-solar Renewable Power Purchase Obligation (RPO). The Petitioner Reliance Industries Limited ("**RIL**") also seeks a direction to Gujarat Energy Development Agency ("**GEDA**"), the State Nodal Agency, to consider the power generated from Biomass cofiring towards Non-Solar RPO compliance.
2. The Petitioner is in receipt of the Affidavit-in-Reply, dated 18.01.2022 from the Respondent in response to the captioned Petition. At the outset, the Petitioner denies all the averments made and contentions raised in the Affidavit-in-Reply, save and except those which are specifically admitted by me hereinafter and my not dealing with any of the contentions raised and averments made may not be construed as an admission of the same.

Abdel



A. With regard to the paragraphs 1, 2, 3 and 3.1 of the Affidavit-in-Reply, I state that the contents of the said paragraph pertain to undisputed facts and therefore, no detailed reply is required thereto.

C. With regard to the paragraph 4 of the Affidavit-in-Reply, I state that the contents of the said paragraph pertain to undisputed facts and therefore, no detailed reply is required thereto.

D. With regard to paragraph 4.1 of the Affidavit-in-Reply, the Petitioner denies the averments made and contentions raised therein. It is to state that the safety aspects along with technical feasibility are required to be





scrutinized for the parameters, e.g., SHR, GCV, PLF, criteria provided in PPA, if any. The Petitioner submits that before co-firing Biomass, the petitioner has checked the technical feasibility with the original equipment Manufacturer. Further, the Biomass is co-fired in coal-based captive power plant and power generated from such co-firing is being used by the Petitioner for its captive purpose. Therefore, question of tariff determination for which SHR, GCV, PLF, criteria to be considered for PPA does not arise. It is to further submit that along with the intimation letter, dated 02.02.2021, the Petitioner has submitted brief note, process flow diagram and proposed format for submission of RPO compliance as per the methodology approved by the CERC in its Order dated 18.02.2020 and thereafter, regularly submitting the data of Biomass co-fired and power generated thereof according to CERC methodology on monthly basis to the Respondent. However, the Petitioner has not received any communication at any point of time from the Respondent for scrutiny of any of the details submitted.

E. With regard to paragraph 4.2 of the Affidavit-in-Reply, the Petitioner denies the averments made and contentions raised therein. It is to state that the whole purpose of promoting co-firing of Biomass is to improve the Air Quality Index while creating additional income for farmers. The benefits of using Biomass as quoted in Para – 4 in the Policy of Ministry of Power for Biomass utilization for power generation are as under.

1. Eliminate/minimize burning of agro-residue and create economic value of agro residue by promoting its use as fuel in power plants in co-firing mode.
2. Improve the air quality index while creating additional income for farmers.
3. Encourage the establishment of decentralized pellets manufacturing units and generate employment opportunities.







The objective of co-firing of Biomass is to improve the Air Quality Index and it is endorsed worldwide. It has been categorically mentioned in the para 2 of the notification of CEA, dated 24.11.2017 as reproduced below

“Biomass cofiring is a well proven technology. With increasing environmental awareness power plants all over the world have adopted Biomass Co-firing as a strategy to combat pollution. UNFCCC recognizes Biomass Co-firing as a carbon neutral technology for mitigation of carbon emission from coal-based power plants.”

These facts have not been recognized by the Respondent. The Petitioner further submits that the Gujarat Pollution Control Board (GPCB) has granted consent for firing Biomass in CFBC boilers at Hazira and Dahej.

- F. With regard to paragraph 5 of the Affidavit-in-Reply, the Petitioner denies the averments made and contentions raised therein. It is to state that Government of India has issued Policy for co-firing of Biomass and recently declared National Mission to use Co-firing of Biomass in latest Budget of 2022-23 in order to address issue of Air Pollution caused by burning of agricultural residue and to reduce carbon footprint. The Ministry of New and Renewable Energy, vide letter dated 26.10.2019, clarified that power generated by co-firing of Biomass in the Thermal Power Plant is renewable energy and is eligible of the Renewable Power Purchase Obligation (RPO) compliance. It is to submit that 'Biomass' is already considered as renewable energy source in para 2.1 (P) of the RPO Regulations of this Hon'ble Commission. It is only the methodology for determination of power generated from co-firing of Biomass as determined by CERC vide their Order dated 18.02.2020 is required to be determined/endorsed. Therefore, the contentions of Respondent that there is no such consideration in GERC Regulations is incorrect.

- G. The Petitioner further submits that it is an initiative of Government of India to curb the pollution on account of burning of agricultural residue. Thus,
- 



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in order to reduce the carbon footprint due to burning of fossil fuel, the biomass co-firing is required to be encouraged to the maximum extent in thermal power plants.

H. In view of the abovementioned submissions as well the submissions advanced in the captioned Petition, the Petitioner requests this Hon'ble Commission to issue necessary amendments/clarifications so that the electricity generated by co-firing of Biomass by Petitioner from Feb -21 onwards can be considered against non-solar Renewable Power Purchase Obligation.

Solemnly affirmed at Ahmedabad on this 7th day of May, 2022.

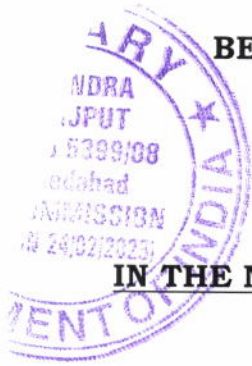
For, Reliance Industries Ltd.

Ashish B. Bhat
Authorised Signatory

DEPONENT



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**BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY
COMMISSION, GANDHINAGAR**

PETITION NO. 2012 OF 2021

IN THE MATTER OF

M/s. Reliance Industries Limited

.... Petitioner

Versus

Gujarat Energy Development Agency

.... Respondent

AFFIDAVIT

I, Ashish Shah, s/o Late Bhalchandra Shah, adult, residing at Ahmedabad, do solemnly affirm and say as follows:

That I am the Senior General Manager - Legal of the Petitioner Reliance Industries Limited and authorized signatory of the Petitioner Company herein and I have read the present Affidavit and I am competent and duly authorized by the Petitioner Company to file this Affidavit.

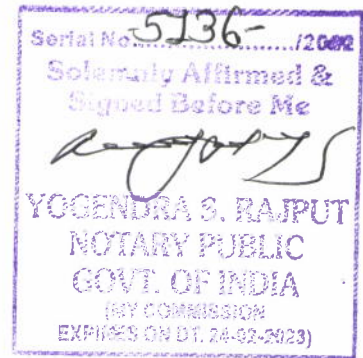
Solemnly affirmed at Ahmedabad on this the 07th day of May, 2022 that the contents of the above affidavit are true to my knowledge and belief (as derived from the records), based on information believed to be true and no part of it is false and nothing material has been concealed therefrom.

For, Reliance Industries Ltd.

Ashish B Shah
Authorized Signatory
DEPONENT



IDENTIFIED BY ME
ADVOCATE



- 7 MAY 2022

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/11

April 29, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

**Sub: Submission of monthly electricity generation data for Feb-2021 & March-2021
in Biomass Co-fired thermal power plant for consideration towards RPO**

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021.

We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we are submitting herewith monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020.

Therefore, we herewith submit monthly data for February-2021 & March-2021 for your kind information please.

Gujarat Energy Development Agency
4th Floor, Block No.11/12
Udyog Bhavan, Sector-11
GANDHINAGAR-382017

Dahej Manufacturing Division

P.O. - Dahej, Taluka - Vagra, District - Bharuch - 392 130, Gujarat, India. Phone: +91-02641-282000
Registered Office: 3rd Floor, Maker Chambers IV, 222, Nariman Point, Mumbai - 400 021, India.



24/5/21

February - 2021

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL		BIOMASS	
		Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
Opening Balance	Kg	6,86,84,849		-	
Weighted Avg GCV of Opening Balance	Kcal/kg	5,168		-	
Quantity Received during month	Kg	12,69,75,560		19,83,165	
Weighted Avg GCV of Quantity Received	Kcal/kg	4,708		3,688	
Closing Stock	Kg	7,58,14,939		5,69,245	
Weighted Avg GCV of Closing Balance	Kcal/kg	5,578	5,29,82,76,49,262	3,677	5,22,04,07,080
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[$(Q_c \times G_c) + (Q_b \times G_b)$]					0.0098

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP-I : STG-I	34 MW	2626393	kwh	3,05,327.59	3,06,402.02	8,000	85,95,440
CPP-III : STG-II	18 MW	XB544207	kwh	3,98,198.80	3,99,003.60	1,000	8,04,800
CCPP : STG-III	90 MW	XB569260	kwh	19,65,124.00	20,04,636.00	1,000	3,95,12,000
CCPP : STG-IV	90 MW	XB569252	kwh	19,03,079.00	19,42,124.00	1,000	3,90,45,000
CCPP : STG-V	90 MW	XB569251	kwh	17,61,254.00	18,00,383.00	1,000	3,91,29,000
Total Electricity Generated - E(GT)						kwh	12,70,86,240

C. AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP-I : STG-I Aux Meter	GJU64717	kwh	2,432.57	2,453.14	2,500	51,425
CPP-III : Aux Meter - I	12526268	kwh	1,115.93	1,123.15	96,000	6,93,120
CPP-III : Aux Meter - II	12526271	kwh	548.40	553.04	96,000	4,45,440
CCPP Aux Meter - I	XC598784	kwh	5,32,485	5,42,208	1,000	97,23,000
CCPP Aux Meter - II	XC598785	kwh	4,41,252	4,50,181	1,000	89,29,000
Total Auxiliary Power					kwh	1,98,41,985

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$$Eb(G) = [Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$$

12,39,967 kwh

2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

$$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$$

10,72,44,255 kwh

3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)

$$Eb(ex-bus) = Eb(G) \times [1 - \{(E(GT) - ESO) / E(GT)\}]$$

10,46,370.81 kwh


SANJAY PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

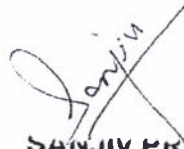
Monthly Details of Fuels (Coal & Biomass) & its GCV Working - February 2021

Working

	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
								Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
	ADANI ENTERPRISES	28.12.2015	5,884	-	49,93,790	49,93,790	-	4707.95	4420.92	5167.53	5578.03
	MV KMAX-66	23.09.2020	5,409	-	4,93,37,781	3,00,37,931	1,92,99,850				
	MV TAHO EUROPE-70	18.12.2020	4,057	24,650	1,40,21,318	-	1,40,45,968				
	MV YASA EAGLE-71	15.01.2021	4,046	7,43,42,750	-	-	7,43,42,750				
	MV BBG HONOR-72	28.01.2021	5,668	4,76,88,490	-	4,03,23,198	73,65,292				
	JMD	05.01.2021	5,408	49,19,670	3,31,960	4,60,020	47,91,610				
Total				12,69,75,560	6,86,84,849	7,58,14,939	11,98,45,470	4,708	4,421	5,168	5,578

/ Working

Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
								Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Coal	Jay Somnath	27.01.2021	3,579	5,04,780	-	2,10,790	2,94,900	3687.76	3692.00	0.00	3676.86
Coal	Labh	30.01.2021	3,815	6,27,395	-	1,99,025	4,27,460				
Coal	Anand	30.01.2021	3,612	6,59,010	-	1,42,550	5,16,460				
Gas	Shakti	08.02.2021	3,818	1,91,980	-	16,880	1,75,100				
Total				19,83,165	-	5,69,245	14,13,920	3,688	3,692	-	3,677


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

March - 2021

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	CCAL		BIOMASS	
		Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
Opening Balance	Kg	7,58,14,939		5,69,245	
Weighted Avg GCV of Opening Balance	Kcal/kg	5,578		3,677	
Quantity Received during month	Kg	9,85,00,200		19,98,300	
Weighted Avg GCV of Quantity Received	Kcal/kg	4,655		3,666	
Closing Stock	Kg	6,66,06,881		5,87,925	
Weighted Avg GCV of Closing Balance	Kcal/kg	4,736	5,66,01,06,47,233	3,557	7,32,84,35,400
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]					0.0128

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP-I : STG-I	34 MW	2626393	kwh	3,06,402.02	3,07,806.58	8,000	1,12,36,480
CPP-III : STG-II	18 MW	XB544207	kwh	3,99,003.60	3,99,003.60	1,000	-
CCPP : STG-III	90 MW	XB569260	kwh	20,04,636.00	20,49,680.00	1,000	4,50,44,000
CCPP : STG-IV	90 MW	XB569252	kwh	19,42,124.00	19,86,983.00	1,000	4,48,59,000
CCPP : STG-V	90 MW	XB569251	kwh	18,00,383.00	18,45,393.00	1,000	4,50,10,000
Total Electricity Generated - E(GT)						kwh	14,61,49,480

C. AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP-I : STG-I Aux Meter	GJU64717	kwh	2,453.14	2,479.87	2,500	66,825
CPP-III : Aux Meter - I	12526268	kwh	1,123.15	1,132.67	96,000	9,13,920
CPP-III : Aux Meter - II	12526271	kwh	553.04	558.59	96,000	5,32,800
CCPP Aux Meter - I	XC598784	kwh	5,42,208	5,52,108	1,000	99,00,000
CCPP Aux Meter - II	XC598785	kwh	4,50,181	4,60,746	1,000	1,05,65,000
Total Auxiliary Power					kwh	2,19,78,545

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - $E_b(G)$

$$E_b(G) = [Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$$

18,68,087 kwh

2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

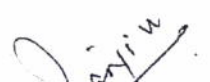
$$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$$

12,41,70,935 kwh

3. Ex-Bus Electrical Energy Generated by using Biomass - $E_b(\text{ex-bus})$

$$E_b(\text{ex-bus}) = E_b(G) \times [1 - \{(E(GT) - ESO)/E(GT)\}]$$

15,87,156.19 kwh


SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - March 2021

Working

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
							Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
		kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
ADANI ENTERPRISES	28.12.2015	5,884	-	49,93,790	49,93,790	-	4655.29	5255.03	5578.03	4735.77
MV KMAX-66	23.09.2020	5,409	-	3,00,37,931	-	3,00,37,931				
MV YASA EAGLE-73	15.01.2021	4,085	6,17,11,000	-	3,96,65,746	2,20,45,254				
MV BBG HONOR-72	28.01.2021	5,668	2,88,52,450	4,03,23,198	2,04,82,490	4,86,93,158				
JMD	05.01.2021	5,408	79,36,750	4,60,020	14,64,855	69,31,915				
Total			9,85,00,200	7,58,14,939	6,66,06,881	10,77,08,258	4,655	5,255	5,578	4,736

Working

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
							Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
		kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Jay Somnath	27.01.2021	3,579	1,11,160	2,10,790	-	3,21,950	3666.37	3701.94	3676.86	3556.77
Labh	30.01.2021	3,815	6,06,050	1,99,025	14,425	7,90,650				
Anand	30.01.2021	3,612	3,78,250	1,42,550	1,180	5,19,620				
Shakti	08.02.2021	3,818	-	16,880	140	16,740				
Marfatia	18.03.2021	3,938	2,04,020	-	74,020	1,30,000				
Gajanand	18.03.2021	3,393	67,430	-	67,430	-				
Greenovo	18.03.2021	3,524	2,79,485	-	78,825	2,00,660				
Pratap	19.03.2021	3,413	2,37,805	-	2,37,805	-				
Krishna	19.03.2021	3,695	1,14,100	-	1,14,100	-				
Total			19,98,300	5,69,245	5,87,925	19,79,620	3,666	3,702	3,677	3,557


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

o/c

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

May 28, 2021

RIL-DMD/CAD/2021-22/26

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Gujarat Energy Development Agency
4th Floor, Block No.11/12
Udyog Bhavan, Sector-11
GANDHINAGAR-382017

Sub: Submission of monthly electricity generation data for April-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for April-2021 for your kind consideration please. Accordingly, following units generated through biomass cofiring, will be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Sr No	Month	Units generation through Biomass(MWH)	Non-solar RPO met (MWH)
1	April-21	3531.33	3531.33

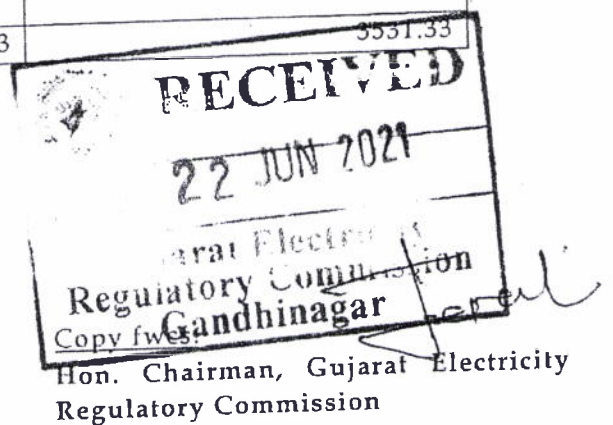
Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.



Encl: As Above

APRIL - 2021

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL		BIOMASS	
		Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
Opening Balance	Kg	66,606,881		587,925	
Weighted Avg GCV of Opening Balance	Kcal/kg	4,736		3,557	
Quantity Received during month	Kg	95,691,890		4,729,920	
Weighted Avg GCV of Quantity Received	Kcal/kg	5,191		3,529	
Closing Stock	Kg	65,920,104		200,845	
Weighted Avg GCV of Closing Balance	Kcal/kg	5,407	455,756,787,078	3,633	18,053,331,797
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]					0.0381

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
PP-I : STG-I	34 MW	2626393	kwh	307,806.58	308,213.09	8,000	3,252,080
PP-III : STG-II	18 MW	XB544207	kwh	399,003.60	400,890.70	1,000	1,887,100
CPP : STG-III	90 MW	XB569260	kwh	2,049,680.00	2,085,372.00	1,000	35,692,000
CPP : STG-IV	90 MW	XB569252	kwh	1,986,983.00	2,022,505.00	1,000	35,522,000
CPP : STG-V	90 MW	XB569251	kwh	1,845,393.00	1,874,073.00	1,000	28,680,000
Total Electricity Generated - E(GT)						kwh	105,033,180

AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
PP-I : STG-I Aux Meter	GJU64717	kwh	2,479.87	2,500.12	2,500	50,625
PP-III : Aux Meter - I	12526268	kwh	1,132.67	1,146.73	96,000	1,349,760
PP-III : Aux Meter - II	12526271	kwh	558.59	561.87	96,000	314,880
CPP Aux Meter - I	XC598784	kwh	552,108	561,964	1,000	9,856,000
CPP Aux Meter - II	XC598785	kwh	460,746	461,528	1,000	782,000
Total Auxiliary Power					kwh	12,353,265

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$$E(G) = [Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$$

4,002,023 kwh

TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

$$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$$

92,679,915 kwh

Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)

$$E(\text{ex-bus}) = E_b(G) \times \{1 - [(E(GT) - ESO)/E(GT)]\}$$

3,531,332.89 kwh


SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - April 2021

CV Working

Sl	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
								Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
al	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,790	4,993,790	-	5191	4729	4736	5407
al	MV TUEKRIS-74	18.03.2021	5,368	82,497,250	-	60,926,314	21,570,936				
al	MV YASA EAGLE-73	15.01.2021	4,085	13,194,640	39,665,746	-	52,860,386				
al	MV BBG HONOR-72	28.01.2021	5,668	-	20,482,490	-	20,482,490				
al	JMD	05.01.2021	5,408	-	1,464,855	-	1,464,855				
Total				95,691,890	66,606,881	65,920,104	96,378,667	5191	4729	4736	5407

Biomass GCV Working

Material	Agent/ Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
								Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Stalk	Jay Somnath	27.01.2021	3,579	75,855	-	75,855	-	3529	3528	3557	3633
idnut	Labh	30.01.2021	3,815	-	14,425	-	14,425				
idnut	Anand	30.01.2021	3,612	-	1,180	-	1,180				
+Bagasse	Shakti	08.02.2021	3,818	64,260	140	39,355	25,045				
idnut	Marfatia	18.03.2021	3,727	417,480	74,020	-	491,500				
idnut	Gajanand	18.03.2021	3,346	864,190	67,430	-	931,620				
+Jeera	Greenovo	18.03.2021	3,596	913,840	78,825	85,635	907,030				
+Jeera	Pratap	19.03.2021	3,562	656,095	237,805	-	893,900				
+Jeera	Krishna	19.03.2021	3,498	1,051,040	114,100	-	1,165,140				
idnut	Guruvayur	07.04.2021	3,693	370,730	-	-	370,730				
+Cotton+tor	Kalpataru	13.04.2021	3,341	316,430	-	-	316,430				
Total				4,729,920	587,925	200,845	5,117,000	3529	3528	3557	3633



SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

o/c

Reliance
Industries Limited

CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/29

June 16, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Gujarat Energy Development Agency
4th Floor, Block No.11/12
Udyog Bhavan, Sector-11
GANDHINAGAR-382017

Sub: Submission of monthly electricity generation data for May-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

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For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for May-2021 for your kind consideration please. Accordingly, following units generated through biomass cofiring, will be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (MWH)	Non-solar RPO met (MWH)
May-21	2727.54	2727.54

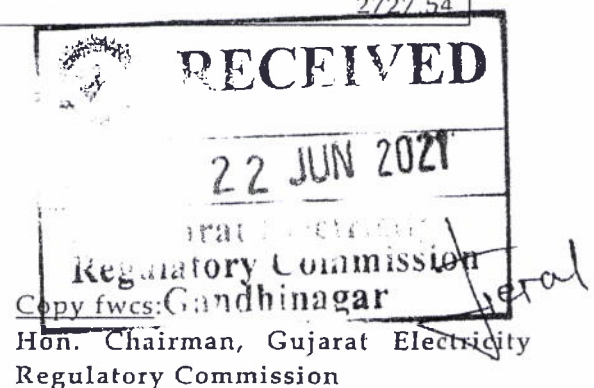
Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited


(Anis Desai)

Sr. General Manager - Corporate Affairs Dept.



Encl: As Above

May-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL	BIOMASS
Opening Balance	Kg	65,920,104	200,845
and Avg GCV of Opening Balance	Kcal/kg	5,407	3,633
Quantity Received during month	Kg	90,267,910	3,410,465
and Avg GCV of Quantity Received	Kcal/kg	5,314	3,745
Closing Stock	Kg	47,623,455	222,700
and Avg GCV of Closing Balance	Kcal/kg	5,282	3,817
		584,517,892,122	12,652,985,095
Ratio of Power Generated through Biomass $[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)]$			0.0212

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
STG-I	34 MW	2626393	kwh	308,213.09	308,731.23	8,000	4,145,120
STG-II	18 MW	XB544207	kwh	400,890.70	404,668.20	1,000	3,777,500
STG-III	90 MW	XB569260	kwh	2,085,372.00	2,130,937.00	1,000	45,565,000
STG-IV	90 MW	XB569252	kwh	2,022,505.00	2,066,712.00	1,000	44,207,000
STG-V	90 MW	XB569251	kwh	1,874,073.00	1,918,937.00	1,000	44,864,000
Total Electricity Generated - E(GT)						kwh	142,558,620

AUXILIARY POWER USED FOR GENERATING POWER

Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
STG-I Aux Meter	GJU64717	kwh	2,500.12	2,527.52	2,500	68,500
Aux Meter - I	12526268	kwh	1,146.73	1,156.56	96,000	943,680
Aux Meter - II	12526271	kwh	561.87	572.12	96,000	984,000
Aux Meter - I	XC598784	kwh	561,964	573,948	1,000	11,984,000
Aux Meter - II	XC598785	kwh	461,528	461,528	1,000	-
Total Auxiliary Power					kwh	13,980,180

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$ 3,020,563 kwh

TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

Total Electricity Generated - Aux Consumption 128,578,440 kwh

Net Electrical Energy Generated by using Biomass - Eb(ex-bus)

$E_b(G) \times [1 - (ESO/E(GT))]$ 2,724,347.66 kwh

Sanjiv
SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Weekly Details of Fuels (Coal & Biomass) & its GCV Working - May-2021

Coal Working

	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
								Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,790	4,993,790	-	5314	5384	5407	5282
	MV TUEKRIS-74	18.03.2021	5,368	-	60,926,314	6,703,688	54,222,626				
	MV EVRYDIKI-75	06.04.2021	5,381	43,904,550	-	8,274,166	35,630,384				
	JMD	05.01.2021	5,408	835,550	-	-	835,550				
	MV MARAN PROSPERITY-76	03.05.2021	5,762	30,408,360	-	16,265,765	14,142,595				
	MV PRABHU PUNI-77	20.04.2021	4,211	15,119,450	-	11,386,046	3,733,404				
Total				90,267,910	65,920,104	47,623,455	108,564,559	5314	5384	5407	5282

Biomass GCV Working

Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
								Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Alk	Jay Somnath	27.01.2021	3,579	167,100	75,855	-	242,955	3745	3734	3633	3817
Bagasse	Shakti	08.02.2021	3,818	65,240	39,355	-	104,595				
It Shells+Castor ls	Marfatia	18.03.2021	3,727	409,650	-	-	409,650				
era	Greenovo	18.03.2021	3,596	-	85,635	-	85,635				
era	Pratap	19.03.2021	3,562	37,825	-	-	37,825				
it	Curuvayur	07.04.2021	3,693	380,530	-	-	380,530				
Cotton + Castor	Kalpataru	13.04.2021	3,341	183,000	-	-	183,000				
ut Shell	Shreenathji Bioenergy	02.05.2021	3,800	292,325	-	66,905	225,420				
ut Shell	Arihant Energy	02.05.2021	3,800	404,785	-	27,785	377,000				
it shell	Seven Agro	02.05.2021	3,800	172,980	-	110	172,870				
+Castor seed	Green Energy	11.05.2021	3,900	385,585	-	38,420	347,165				
it Shells	Hind bio-Energy	11.05.2021	3,800	216,430	-	32,220	184,210				
+Cotton +Tor+Tuver	Ready Fuel	11.05.2021	3,800	405,255	-	57,260	347,995				
Bagasse	Narsimha Agro	11.05.2021	3,500	85,110	-	-	85,110				
	Biofuel Junction	11.05.2021	3,800	204,650	-	-	204,650				
Total				3,410,465	200,845	222,700	3,388,610	3745	3734	3633	3817


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Razej Manufacturing Division

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/64

July 09, 2021

✓ Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Sub: Submission of monthly electricity generation data for June-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fucl, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for June-2021 for your kind consideration please. Accordingly, following units generated through biomass cofiring, required to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (MWH)	Non-solar RPO met (MWH)
June-21	3031.37	3031.37

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Jun-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
POWER GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL		BIOMASS	
		Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
CV of Opening Balance	Kg	47,623,455		222,700	
CV of Quantity Received	Kcal/kg	5,256		3,817	
CV of Closing Balance	Kg	135,568,450		3,622,205	
CV of Quantity Received	Kcal/kg	5,282		3,729	
CV of Closing Balance	Kg	75,786,352	558,243,623,934	209,795	13,569,887,710
CV of Closing Balance	Kcal/kg	5,386		3,753	
Ratio of Power Generated through Biomass $[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)]$					0.0237

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	308,731.23	310,325.17	8,000	12,751,520
18 MW	XB544207	kwh	404,668.20	406,413.60	1,000	1,745,400
90 MW	XB569260	kwh	2,130,937.00	2,175,810.00	1,000	44,873,000
90 MW	XB569252	kwh	2,066,712.00	2,108,659.00	1,000	41,947,000
90 MW	XB569251	kwh	1,918,937.00	1,959,366.00	1,000	40,429,000
Total Electricity Generated - E(GT)					kwh	141,745,920

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
Motor	GJU64717	kwh	2,527.52	2,555.84	2,500	70,800
Motor - I	12526268	kwh	1,156.56	1,171.88	96,000	1,470,720
Motor - II	12526271	kwh	572.12	577.10	96,000	478,080
- I	XC598784	kwh	573,948	585,937	1,000	11,989,000
- II	XC598785	kwh	461,528	461,528	1,000	-
Total Auxiliary Power					kwh	14,008,600

POWER GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

POWER GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	3,363,817 kwh
ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
Electricity Generated - Aux Consumption	127,737,320 kwh
Net Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$E_b \times [1 - (ESO/E(GT))]$	3,031,374.83 kwh


SANJAY PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Details of Fuels (Coal & Biomass) & its GCV Working - June-2021

Coal Working

	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
								Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,790	4,993,790	-	5282	5198	5256	5386
	MV TUEKRIS-74	18.03.2021	5,368	-	6,703,688	6,703,688	-				
	MV EVRYDIKI-75	06.04.2021	5,381	-	8,274,166	-	8,274,166				
	MV EFESSOS WAVE-78	24.05.2021	5,504	60,657,940	-	54,016,033	6,641,907				
	MV MARAN PROSPERITY-76	03.05.2021	5,726	45,185,760	16,265,765	2,315,405	59,136,120				
	MV PRABHU PUNI-77	20.04.2021	4,154	29,724,750	11,386,046	7,757,436	33,353,360				
Total				135,568,450	47,623,455	75,786,352	107,405,553	5282	5198	5256	5386

Biomass Working

Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
								Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Castor	Jay Somnath	14.04.2021	3,962	113,080	-	-	113,080	3729	3733	3817	3753
Castor Seed	Shakti	13.04.2021	3,070	210,050	-	-	210,050				
Castor Seed	Marfatia	11.05.2021	3,829	180,530	-	-	180,530				
Castor Seed	Greenovo	28.05.2021	3,539	202,665	-	-	202,665				
Castor Seed	Pratap	28.05.2021	3,341	138,050	-	-	138,050				
Castor Seed	SK Agro fuel	11.05.2021	3,800	24,590	-	24,590	-				
Castor Seed	Krishna Enterprises	28.05.2021	3,754	278,470	-	-	278,470				
Castor Seed	Shreenathji Bioenergy	02.05.2021	3,800	295,340	66,905	-	362,245				
Castor Seed	Arihant Energy	02.05.2021	3,800	107,480	27,785	-	135,265				
Castor Seed	Seven Agro	02.05.2021	3,800	320,790	110	22,330	298,570				
Castor seed shells	Green Energy	11.05.2021	3,900	521,215	38,420	-	559,635				
Castor shells	Hind bio-Energy	11.05.2021	3,800	407,635	32,220	37,255	402,600				
Castor + Tuber	Ready Fuel	11.05.2021	3,800	378,700	57,260	72,110	363,850				
Castor + Tuber	Narsimha Agro	11.05.2021	3,178	53,010	-	13,020	39,990				
Castor + Tuber	Biofuel Junction	11.05.2021	3,754	390,600	-	40,490	350,110				
Total				3,622,205	222,700	209,795	3,635,110	3729	3733	3817	3753

Sanjiv

SANJIV PRASAD
Vice President
Reliance Industries Limited
Tataj Manufacturing Division

o/c

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/93

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

17/8/21 August 12, 2021
Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Sub: Submission of monthly electricity generation data for July-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

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Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
July-21	41,51,784.67	41,51,784.67

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited

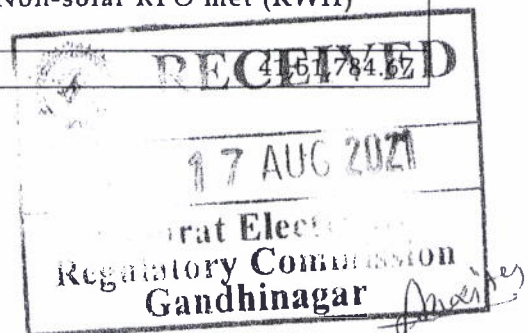

(Anis Desai)

Sr. General Manager - Corporate Affairs Dept.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above



Dahej Manufacturing Division

P. O. : Dahej, Taluka : Vagra, District - Bharuch -392 130 , Gujarat, India. Phone: +91-02641-282000

Registered Office : 3rd Floor, Maker Chambers IV, 222, Nariman Point. Mumbai - 400 021, India.

Jul-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)

Particulars	Unit	COAL		BIOMASS	
		Data	Data	Data	Data
Opening Balance	Kg	7,57,86,352	Total Heat Generated by Coal (Qc x Gc) (kcal)	2,09,795	Total Heat Generated by Biomass (Qb x Gb) (kcal)
Weighted Avg GCV of Opening Balance	Kcal/kg	5,386		3,753	
Quantity Received during month	Kg	13,43,92,020		52,54,870	
Weighted Avg GCV of Quantity Received	Kcal/kg	5,207		3,655	
Closing Stock	Kg	9,70,96,824	5,74,31,28,07,684	4,43,215	18,38,39,97,980
Weighted Avg GCV of Closing Balance	Kcal/kg	5,495		3,627	
Ratio of Power Generated through Biomass [Qb x Gb]/[(Qc x Gc)+(Qb x Gb)]					0.0310

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP-I : STG-I	34 MW	2626393	kwh	3,10,325.17	3,12,840.40	8,000	2,01,21,840
CPP-III : STG-II	18 MW	XB544207	kwh	4,06,413.60	4,06,413.60	1,000	-
CCPP : STG-III	90 MW	XB569260	kwh	21,75,810.00	22,15,014.00	1,000	3,92,04,000
CCPP : STG-IV	90 MW	XB569252	kwh	21,08,659.00	21,47,613.00	1,000	3,89,54,000
CCPP : STG-V	90 MW	XB569251	kwh	19,59,366.00	20,06,793.00	1,000	4,74,27,000
Total Electricity Generated - E(GT)						kwh	14,57,06,840

C. AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP-I : STG-I Aux Meter	GJU64717	kwh	2,555.84	2,585.41	2,500	73,925
CPP-III : Aux Meter - I	12526268	kwh	1,171.88	1,186.59	96,000	14,12,160
CPP-III : Aux Meter - II	12526271	kwh	577.10	581.86	96,000	4,56,960
CCPP Aux Meter - I	XC598784	kwh	5,85,937	5,95,848	1,000	99,11,000
CCPP Aux Meter - II	XC598785	kwh	4,61,528	4,61,528	1,000	-
Total Auxiliary Power					kwh	1,18,54,045

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY	
1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$	45,19,468 kwh
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = Total\ Electricity\ Generated - Aux\ Consumption$	13,38,52,795 kwh
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - [(E(GT) - ESO) / E(GT)]]$	41,51,784.67 kwh

SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - July-2021

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
								Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Coal	ADANI ENTERPRISES	28.12.2015	5,884	-	49,93,790	49,93,790	-	5207	5079	5386	5495
Coal	MV TUEKRIS-74	18.03.2021	5,368	-	67,03,688	-	67,03,688				
Coal	MV EVRYDIKI-75	06.04.2021	5,381	5,34,56,170	-	4,45,29,652	89,26,518				
Coal	MV EFESSOS WAVE-78	24.05.2021	5,504	2,12,00,140	5,40,16,033	1,38,44,601	6,13,71,572				
Coal	MV MARAN PROSPERITY-76	03.05.2021	5,726	-	23,15,405	-	23,15,405				
Coal	MV PRABHU PUNI-77	20.04.2021	4,154	2,78,52,600	77,57,436	30,16,181	3,25,93,855				
Coal	MV PLAVIA-79	24.05.2021	5,726	3,06,88,600	-	3,06,88,600	-				
Coal	JMD	06.05.2021	3,335	11,94,510	-	-	11,70,510				
Total				13,43,92,020	7,57,86,352	9,70,96,824	11,30,81,548	5207	5079	5386	5495

B. Biomass GCV Working

Biomass Material	Agent/ Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
								Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Cotton Stalk	Jay Somnath	14.04.2021	3,591	53,700	-	-	53,700	3655	3661	3753	3627
Sawdust + Bagasse + Castor	Shakti	13.04.2021	3,251	4,55,010	-	-	4,55,010				
Castor seed shell + Sawdust	Shree Umiya Biocoal	28.06.2021	3,678	11,73,700	-	52,045	11,21,655				
Dhanial+Jeera	Greenovo	28.05.2021	3,524	5,32,935	-	73,285	4,59,650				
Dhanial+Jeera	Pratap	28.05.2021	3,409	3,20,105	-	-	3,20,105				
Juliflora	SK Agro fuel	11.05.2021	3,800	1,03,510	24,590	-	1,28,100				
Groundnut Shell & Castor seed shells	Krishna Enterprises	28.05.2021	3,542	83,740	-	-	83,740				
Coriander+ Soyabean+ Mustard	Girnar Industries	28.06.2021	3,382	3,76,265	-	1,05,705	2,70,560				
Sawdust	Anita Biocoal	29.06.2021	3,966	4,28,020	-	-	4,28,020				
Groundnut shell	Seven Agro	02.05.2021	3,800	-	22,330	-	22,330				
Saw dust + Castor seed shells	Green Energy	20.07.2021	3,582	2,58,835	-	87,970	1,70,865				
Groundnut Shells	Hind bio-Energy	11.05.2021	3,800	-	37,255	-	37,255				
Saw dust,+ Cotton waste+Castor+Tuver	Ready Fuel	16.06.2021	3,800	9,97,965	72,110	-	10,70,075				
Sawdust+Bagasse	Narsimha Agro	11.05.2021	3,178	-	13,020	-	13,020				
Juliflora	Biofuel Junction	20.07.2021	3,754	50,760	40,490	-	91,250				
Groundnut Shell Husk	Daukiya Enterprises	29.06.2021	4,095	2,80,225	-	43,760	2,36,465				
Juliflora	Green Gold Biofuel	11.05.2021	3,813	10,300	-	-	10,300				
Saw dust + Castor seed shells	Kalpataru Industries	20.07.2021	3,725	76,190	-	26,840	49,350				
Juliflora	JMD Biomass	06.07.2021	3,845	53,610	-	53,610	-				
				52,54,870	2,09,795	4,43,215	50,21,450	3655	3661	3753	3627

SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

o/c

Reliance

Industries Limited

CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/110

September 14, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

23 19 12 1
Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Sub: Submission of monthly electricity generation data for August-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

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Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
August-21	37,06,217.92	37,06,217.92

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

RECEIVED 24 SEP 2021 Copy fwcs: Hon. Chairman, Gujarat Electricity Regulatory Commission Gandhinagar Encl: As Above

Aug-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
QUANTITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL		BIOMASS	
		Data	Total Heat	Data	Total Heat Generated by Biomass
	Kg	97,096,824	Generated by Coal	443,215	($Q_b \times G_b$)
SCV of Opening Balance	Kcal/kg	5,495	($Q_c \times G_c$)	3,627	(kcal)
Used during month	Kg	106,112,350	(kcal)	5,163,450	
SCV of Quantity Received	Kcal/kg	4,977		3,573	
	Kg	90,973,649	597,338,709,334	434,200	18,473,342,058
SCV of Closing Balance	Kcal/kg	5,104		3,646	
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]					0.0300

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	312,840.40	315,375.37	8,000	20,279,760
18 MW	XB544207	kwh	406,413.60	406,413.60	1,000	-
90 MW	XB569260	kwh	2,215,014.00	2,253,611.00	1,000	38,597,000
90 MW	XB569252	kwh	2,147,613.00	2,185,905.00	1,000	38,292,000
90 MW	XB569251	kwh	2,006,793.00	2,054,543.00	1,000	47,750,000
Total Electricity Generated - E(GT)					kwh	144,918,760

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
1x Meter	GJU64717	kwh	2,585.41	2,615.90	2,500	76,225
Motor - I	12526268	kwh	1,186.59	1,197.76	96,000	1,072,320
Motor - II	12526271	kwh	581.86	590.66	96,000	844,800
Motor - I	XC598784	kwh	595,848	607,615	1,000	11,767,000
Motor - II	XC598785	kwh	461,528	469,139	1,000	7,611,000
Total Auxiliary Power					kwh	21,371,345

ENERGY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ENERGY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$b)/[(Q_c \times G_c)+(Q_b \times G_b))] \times E(GT)$ 4,347,323 kwh

ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

Electricity Generated - Aux Consumption 123,547,415 kwh

Electrical Energy Generated by using Biomass - Eb(ex-bus)

$G) \times [1 - [(E(GT) - ESO)/E(GT)]]$ 3,706,217.92 kwh

Sanjiv
SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

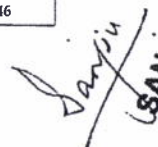
Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Aug-2021

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
Coal	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,75	4,993,790	-	4977	5322	5495	5104
Coal	MV EVRYDIKI-75	06.04.2021	5,381	1,164,740	44,529,65	12,925,064	32,769,328				
Coal	MV EFESSOS WAVE-78	24.05.2021	5,504	-	13,844,60	-	13,844,601				
Coal	MV SCORPIO-80	02.07.2021	4,254	50,937,150	-	35,664,182	15,272,968				
Coal	MV PRABHU PUNI-77	20.04.2021	4,154	-	3,016,10	-	3,016,181				
Coal	MV PLAVIA-79	24.05.2021	5,726	52,292,840	30,688,60	37,207,665	45,773,775				
Coal	JMD	06.05.2021	3,335	1,717,620	24,00	182,948	1,558,672				
Total				106,112,350	97,096,824	90,973,649	112,235,525	4977	5322	5495	5104

B. Biomass GCV Working

Biomass Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
Cotton Stalk	Jay Somnath	14.04.2021	3,673	15,090	-	-	15,090	3573	3571	3627	3646
Juliflora	Gramin Energy	23.08.2021	3,746	101,920	-	101,920	-				
Castor seed shell+ Sawdust	Shree Umiya Biocoal	28.06.2021	3,678	594,660	52,045	54,430	592,275				
Dhania+Jeera	Greenovo	28.05.2021	3,524	458,280	73,205	-	531,565				
Dhania+Jeera	Pratap	28.05.2021	3,168	126,375	-	-	126,375				
Juliflora	SK Agro fuel	11.05.2021	3,862	29,160	-	29,160	-				
Acasia wood	Gangotri Energy	30.06.2021	3,743	13,540	-	13,540	-				
Coriander+Soyabean+ Mustard	Girnar Industries	28.06.2021	3,382	104,180	105,705	-	209,885				
Sawdust	Anita Biocoal	29.06.2021	3,735	100,840	-	-	100,840				
Soyabean husk & Saw Dust	Nakoda Biofuel	30.07.2021	3,609	339,760	-	24,860	314,900				
Saw dust & Castor seed shells	Green Energy	20.07.2021	3,582	1,743,015	87,920	119,775	1,711,210				
Soyabean Husk & Corn Waste	ACI Clean Energy	30.07.2021	3,381	479,615	-	-	479,615				
Saw dust,+Cotton waste+Castor+Tuver	Ready Fuel	16.06.2021	3,550	528,375	-	39,905	488,470				
Soyabean Husk & Mustard husk	Shree Khandeshwar Sales	30.07.2021	3,512	51,730	-	-	51,730				
Juliflora	Biofuel Junction	20.07.2021	3,266	24,320	-	24,320	-				
Groundnut Shell Husk	Daukiya Enterprises	29.06.2021	4,095	-	43,700	-	43,760				
Juliflora	Green Gold Biofuel	11.05.2021	3,813	51,370	-	-	51,370				
Saw dust +Castor seed shells	Kalpataru Industries	20.07.2021	3,725	401,220	26,890	26,290	401,770				
Juliflora	JMD Biomass	06.07.2021	3,845	-	53,610	-	53,610				
				5,163,450	443,205	434,200	5,172,465	3573	3571	3627	3646


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
164

Reliance
Industries Limited
CIN # L17110MH1973PLC

Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

RIL-DMD/CAD/2021-22/128

October 21, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

28
16.11.21

Sub: Submission of monthly electricity generation data for September-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for September-2021 for your kind consideration please. Accordingly, following units generated through biomass cofiring, required to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Sept-21	20,82,425.16	20,82,425.16

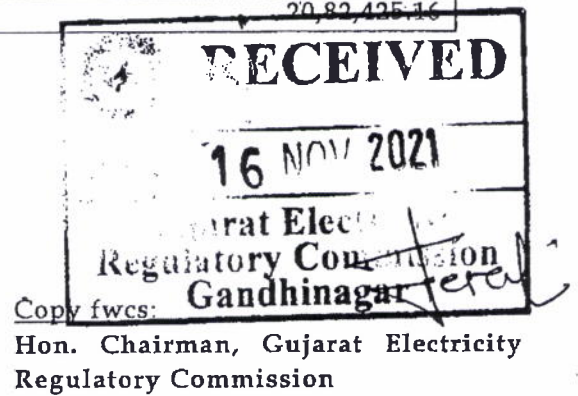
Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.



Encl: As Above

Dahej Manufacturing Division

P. O. : Dahej, Taluka : Vagra, District - Bharuch -392 130 , Gujarat, India. Phone: +91-02641-282000

Registered Office : 3rd Floor, Maker Chambers IV, 222, Nariman Point. Mumbai - 400 021, India.

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Sept-2021

ing

	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
	ADANI ENTERPRISES	28.12.2015	5,884	-	49,93,790	49,93,790		5260	5023	5104	5501
	MV EVRYDIKI-75	06.04.2021	5,381		1,29,25,064	1	1,29,25,064				
	MV TYANA-81	19.08.2021	5,747	4,64,50,700	-	3,54,85,955	1,09,64,745				
	MV SCORPIO-80	02.07.2021	4,254	2,05,38,450	3,56,64,182	85,50,369	4,76,52,263				
	MV PRABHU PUNI-77	20.04.2021	4,154		-	-					
	MV PLAVIA-79	24.05.2021	5,726		3,72,07,665	0	3,72,07,665				
	JMD	06.05.2021	3,335	10,32,140	1,82,948	-	12,15,088				
	Total			6,80,21,290	9,09,73,549	4,90,30,115	10,99,64,824	5260	5023	5104	5501

orking

	Agent/ Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
			kCal/kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
	Gramin Energy	23.08.2021	3,746	1,46,550	1,01,920	-	2,48,470	3621	3625	3646	3632
owdust	Shree Umiya Biocoal	28.06.2021	3,678	2,38,870	54,430	-	2,93,300				
sk	Mainleshwar Agro	23.08.2021	3,693	2,87,210	-	18,230	2,68,980				
	SK Agro fuel	11.05.2021	3,852		29,160	-	29,160				
	Gangotri Energy	30.06.2021	3,743		13,540	-	13,540				
ck Dust	Nakoda Biofuel	30.07.2021	3,639	84,980	24,860	-	1,09,840				
eed shells	Green Energy	20.07.2021	3,532	9,23,250	1,19,775	22,360	10,20,665				
orn Waste	ACI Clean Energy	30.07.2021	3,331	25,080	-	-	25,080				
	Ready Fuel	16.06.2021	3,550	2,68,960	39,905	-	3,08,865				
	Biofuel Junction	20.07.2021	3,266	1,03,890	24,320	-	1,28,210				
ed shells	Kalpataru Industries	20.07.2021	3,725	96,700	26,290	-	1,22,990				
	JMD Biomass	06.07.2021	3,845	1,64,210	-	-	1,64,210				
				23,39,700	4,34,200	40,590	27,33,310	3621	3625	3646	3632


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Refining Division

Sep-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ENERGY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL		BIOMASS	
		Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
Wt of Opening Balance	Kg	9,09,73,649		4,34,200	
Wt during month	Kcal/kg	5,104		3,646	
Wt of Quantity Received	Kg	6,80,21,290		23,39,700	
	Kcal/kg	5,260		3,621	
Wt of Closing Balance	Kg	4,90,40,115	5,52,39,99,12,717	40,590	9,90,75,06,295
	Kcal/kg	5,501		3,632	
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]					0.0176

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	3,15,575.37	3,17,800.47	8,000	1,94,00,800
18 MW	XB544207	kwh	4,06,413.60	4,06,415.40	1,000	1,800
90 MW	XB569260	kwh	22,53,511.00	22,87,108.00	1,000	3,34,97,000
90 MW	XB569252	kwh	21,85,405.00	22,20,550.00	1,000	3,46,45,000
90 MW	XB569251	kwh	20,54,543.00	21,07,487.00	1,000	5,29,44,000
Total Electricity Generated - E(GT)					kwh	14,04,88,600

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
Motor	GJU64717	kwh	2,515.90	2,647.48	2,500	78,950
Motor - I	12526268	kwh	1,197.76	1,206.95	96,000	8,82,240
Motor - II	12526271	kwh	590.66	602.18	96,000	11,05,920
- I	XC598784	kwh	6,17,615	6,18,914	1,000	1,12,99,000
- II	XC598785	kwh	4,59,139	4,78,072	1,000	89,33,000
Total Auxiliary Power					kwh	2,22,99,110

ENERGY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ENERGY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Wt \times [Q_c \times G_c + (Q_b \times G_b)] \times E(GT)$	24,75,322 kwh
ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
Electricity Generated - Aux Consumption	11,81,39,490 kwh
Net Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Wt \times [1 - ((E(GT) - ESO)/E(GT))]$	20,82,325.15 kwh

Sanjiv

SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

o/c

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/134

November 23, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Sub: Submission of monthly electricity generation data for October-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

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For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Him GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for October-2021 for your kind consideration please. Accordingly, following units generated through biomass cofiring, required to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Oct-21	8,75,263.87	8,75,263.87

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Oct-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL	BIOMASS
		Data	Data
	Kg	49,030,114	40,590
V of Opening Balance	Kcal/kg	5,501	3,532
during month	Kg	115,345,160	1,904,705
V of Quantity Received	Kcal/kg	5,612	3,248
	Kg	63,650,380	434,225
V of Closing Balance	Kcal/kg	5,579	3,420
		561,926,225,014	4,846,461,220
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]			
			0.0086

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	317,800.47	319,563.22	8,300	14,102,000
18 MW	XB544207	kwh	406,415.40	406,595.90	1,300	180,500
90 MW	XB569260	kwh	2,287,108.00	2,321,856.00	1,300	34,748,000
90 MW	XB569252	kwh	2,220,550.00	2,245,821.00	1,300	25,271,000
90 MW	XB569251	kwh	2,107,487.00	2,157,789.00	1,300	50,302,000
Total Electricity Generated - E(GT)					kwh	124,603,500

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
Meter	GJU64717	kwh	2,647.48	2,678.35	2,300	77,175
Mr - I	12526268	kwh	1,206.95	1,219.17	96,300	1,173,120
Mr - II	12526271	kwh	602.18	609.21	96,300	674,880
I	XC598784	kwh	618,914	628,649	1,300	9,735,000
II	XC598785	kwh	478,072	488,657	1,300	10,585,000
Total Auxiliary Power					kwh	22,245,175

GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$((Q_c \times G_c) + (Q_b \times G_b)) \times E(GT)$ **1,065,482 kwh**

TRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

ricity Generated - Aux Consumption **102,358,325 kwh**

al Energy Generated by using Biomass - Eb(ex-bus)

$(1 - [(E(GT) - ESO)/E(GT)])$ **875,263.87 kwh**

Sanjiv

SANJIV PRASAD
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Oct-2021

a. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Coal	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,790	4,993,790		5612	5579	5501	5579
Coal	MV TYANA-81	03.09.2021	5,747	28,927,970	35,485,955	3,307,092	61,106,833				
Coal	MV SCORPIO-80	05.08.2021	4,254		8,550,369	-	8,550,369				
Coal	MV AOM FEDERICA-82	05.10.2021	5,710	76,238,710	-	45,986,018	30,252,692				
Coal	MV DOUBLE PRESTIGE-83	12.10.2021	4,920	8,706,340	-	8,706,340					
Coal	JMD	06.05.2021	1,982	1,472,140	-	657,140	815,000				
Total				115,345,160	49,030,134	63,650,380	100,724,894	5612	5579	5501	5579

b. Biomass GCV Working

Biomass Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Cotton waste + Juliflora	Maya Bhai	30.10.2021	1,930	124,680	-	51,120	73,480	3248	3209	3632	3420
Coriander + Cumin	Amrut Biocoal	07.10.2021	3,365	388,850	-	-	388,850				
Castor seed shell+ Sawdust	Shree Umiya Biocoal	28.06.2021	2,984	319,470		-	319,470				
Groundnut Shell Husk	Mamleshwar Agro	23.08.2021	3,693		18,250		18,230				
Coiyabeen husk	OM Industries		3,389	26,860	-	-	26,860				
Coiyabeen husk & Saw Dust	Nakoda Biofuel	14.09.2021	3,463	43,780	-	-	43,700				
Saw dust & Castor seed shells	Green Energy	13.09.2021	3,582	751,655	22,360	263,210	510,805				
Saw dust,+Cotton waste+Castor+Tuber	Ready Fuel	30.09.2021	1,962	96,585		-	96,505				
Juliflora	Biofuel Junction	14.09.2021	3,483	23,080	-	-	23,000				
Juliflora	Green Gold Biofuel	11.05.2021	3,701	130,085	-	120,595	9,470				
				1,904,785	60,550	434,925	1,510,270	3248	3209	3632	3420


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/201

November 23, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Sub: Submission of monthly electricity generation data for November-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

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Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Nov-21	21,99,552.58	21,99,552.58

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Nov-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
TY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL	BIOMASS
		Data	Data
	Kg	63,650,380	434,925
CV of Opening Balance	Kcal/kg	5,579	3,420
CV of Quantity Received	Kcal/kg	116,797,180	3,629,520
CV of Closing Balance	Kcal/kg	4,927	3,264
	Kg	76,319,474	861,255
	Kcal/kg	5,042	3,147
Ratio of Power Generated through Biomass $[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)]$			0.0191

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	319,563.22	321,958.26	8,000	19,160,320
18 MW	XB544207	kwh	406,595.90	406,595.90	1,000	-
90 MW	XB569260	kwh	2,321,856.00	2,363,215.00	1,000	41,359,000
90 MW	XB569252	kwh	2,245,821.00	2,285,192.00	1,000	39,371,000
90 MW	XB569251	kwh	2,157,789.00	2,194,897.00	1,000	37,108,000
Total Electricity Generated - E(GT)					kwh	136,998,320

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
ex Meter	GJU64717	kwh	2,678.35	2,691.07	2,500	31,800
ter - I	12526268	kwh	1,219.17	1,231.32	96,000	1,166,400
ter - II	12526271	kwh	609.21	613.42	96,000	404,160
r - I	XC598784	kwh	628,649	640,622	1,000	11,973,000
r - II	XC598785	kwh	488,657	496,886	1,000	8,229,000
Total Auxiliary Power					kwh	21,804,360

GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

Y GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$b) / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	2,615,892 kwh
TRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
tricity Generated - Aux Consumption	115,193,960 kwh
cal Energy Generated by using Biomass - Eb(ex-bus)	
$G) \times [1 - \{(E(GT) - ESO) / E(GT)\}]$	2,199,552.58 kwh


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Nov-2021

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
Coal	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,790	4,993,790	-	4927	5241	5579	5042
Coal	MV TYANA-81	03.09.2021	5,747	-	3,307,092	-	3,307,092				
Coal	MV CLIVIA-84	05.08.2021	5,050	34,643,040	-	34,643,040	-				
Coal	MV AOM FEDERICA-82	05.10.2021	5,710	-	45,986,018	-	45,986,018				
Coal	MV DOUBLE PRESTIGE-83	12.10.2021	4,920	80,882,910	8,706,340	36,862,644	22,996,106				
Coal	JMD	06.05.2021	1,982	1,271,230	657,140	-	1,928,170				
Total				116,797,180	63,650,380	76,219,474	104,128,186	4927	5241	5579	5042

B. Biomass GCV Working

Biomass Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
Cotton waste	Maya Bhai	30.10.2021	1,929.50	392,670	51,120	20,870	222,520	3264	3316	3420	3147
Coriander + Cumin	Amrut Biocoal	07.10.2021	3,220.50	438,400	-	98,140	340,260				
Castor seed shell+ Sawdust	Shree Umiya Biocoal	28.06.2021	2,881.50	158,010	-	-	158,010				
Groundnut Shell	Jay Somnath	23.08.2021	3,578.00	122,430	-	-	122,430				
Soyabean husk	PATIDAR BRIQUETTES	-	3,637.00	53,590	-	-	53,590				
Soya	Gramin Energy	30.06.2021	2,801.00	54,250	-	54,250	-				
Coriander+Soyabean+ Mustard	VISHAL CONSTRUCTION	28.06.2021	3,452.00	29,200	-	-	29,200				
Sawdust	A R Energy	29.06.2021	3,070.00	248,765	-	-	248,765				
Groundnut shell	BHAGIRATH INDUSTRIES	14.09.2021	4,053.00	503,980	-	267,575	236,405				
Almond + Castor	Green Energy	13.09.2021	3,581.50	848,960	263,210	66,650	1,045,520				
Soya	NJ RENEWABLE ENERGY	30.07.2021	3,457.50	126,950	-	102,180	24,770				
Juliflora	Ready Fuel	30.09.2021	2,422.50	168,560	-	3,400	165,160				
Juliflora	Biofuel Junction	14.09.2021	3,636.50	49,660	-	-	49,660				
Juliflora	Green Gold Biofuel	11.05.2021	3,700.50	118,650	120,595	-	229,245				
Saw dust	Kalpitaru Industries	20.07.2021	3,407.50	235,815	-	-	235,815				
Cotton	MARUTI BIOCOAL INDUSTRIES	06.07.2021	2,730.50	79,630	-	48,190	21,440				
				3,629,520	434,925	61,255	3,203,190	3264	3316	3420	3147


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

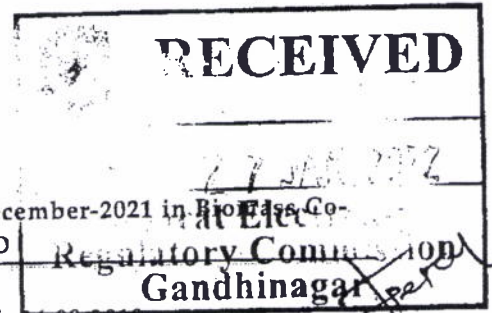
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Reliance
 Industries Limited
 CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/215

January 4, 2022

Dy. Director - Gujarat Energy Development Agency,
 4th Floor, Block No. 11/12,
 Udyog Bhavan, Sector-11,
GANDHINAGAR



Sub: Submission of monthly electricity generation data for December-2021 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
 2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021 and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC), to approve the methodology as notified by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for December-2021 for your kind consideration please. Accordingly, following units generated through biomass cbfiring, may please be considered towards our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Dec-21	53,09,982	53,09,982

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
 For Reliance Industries Limited



(Anis Desai)

Sr. General Manager - Corporate Affairs Dept.

Gujarat Energy Development Agency,
 Block No. 11 & 12, Udyog Bhavan,
 4th Floor, Sector-11, Gandhinagar.

Copy fwcs:
 Hon. Chairman, Gujarat Electricity
 Regulatory Commission

Encl: As Above

Dahej Manufacturing Division

P. O. : Dahej, Taluka : Vagra, District - Bharuch - 392 130, Gujarat, India. Phone: +91-02641-282000

Registered Office : 3rd Floor, Maker Chambers IV, 222, Nariman Point Mumbai - 400 021, India.

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Dec-2021

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port C-CV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Coal	ADANI ENTERPRISES	28.12.2015	5,384	-	4,963,790	4,993,790		5125	5004	5042	5210
Coal	MV CLIVIA-84	18.10.2021	5,250	56,610,487	34,643,040	28,990,450	62,263,070				
Coal	MV AOM FEDERICA-85	19.11.2021	5,250	48,046,977		41,471,152	6,575,818				
Coal	MV DOUBLE PRESTIGE-83	12.10.2021	4,320		36,682,644	-	36,682,644				
Coal	JMD	06.05.2021	1,519	484,167	-	94,830	389,330				
Total				105,141,617	76,339,674	75,550,222	105,910,862	5125	5004	5042	5210

B. Biomass GCV Working

Biomass Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Cotton waste	Maya Bhai	30.10.2021	1,525.50	81,067	220,870	-	301,930	2830	2985	3147	2439
Coriander + Cumin	Amrut Biocoal	09.11.2021	3,224.50	531,817	68,740	-	629,950				
Groundnut shell	PATIDAR BRIQUETTES	24.11.2021	3,556.00	228,097	-	-	228,090				
Groundnut shell	ABHAY SUPPLIERS	24.11.2021	2,525.00	56,077	-	-	56,070				
Soya	Gramin Energy	16.11.2021	2,807.00	299,287	54,250	-	353,530				
Coriander+Soyabean+ Mustard	VISHAL CONSTRUCTION	22.11.2021	3,834.00	81,180	-	-	81,180				
Sawdust	A R Energy	29.10.2021	2,557.00	293,525	-	-	293,525				
Groundnut shell	BHAGIRATH INDUSTRIES	14.09.2021	4,157.00		267,575	-	267,575				
Almond + Castor	Green Energy	06.12.2021	3,287.50	444,220	66,650	-	510,870				
Soya	NJ RENEWABLE ENERGY	12.11.2021	3,457.50	269,667	102,780	-	371,845				
Aliflora	Ready Fuel	11.11.2021	2,427.50	5,535,625	3,400	2,537,775	3,001,250				
Soyabean Husk & Mustard husk	JMD-BIOMASS	13.12.2021	3,746.00	1,071,810	-	31,665	1,040,145				
Aliflora	Biofuel Junction	06.12.2021	3,837.50	146,920	-	-	146,920				
Aliflora	Green Gold Biofuel	11.05.2021	3,586.00	243,750	-	-	243,750				
Saw dust	Kalpitaru Industries	27.12.2021	3,537.50	291,300	-	-	291,300				
Cotton	MARUTI BIOCOAL INDUSTRIES	09.11.2021	2,737.50	384,880	48,790	0	433,070				
				9,959,185	861,255	2,569,440	8,251,000	2830	2985	3147	2439


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Dec-21

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
: GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

		COAL		BIOMASS	
	Unit	Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
of Opening Balance	Kg	76,319.47		861,255	
	Kcal/kg	5.04		3,147	
during month	Kg	105,141.61		9,959,185	
of Quantity Received	Kcal/kg	5.12		2,830	
	Kg	75,550.22	530,036,882,538	2,569,440	24,627,998,875
of Closing Balance	Kcal/kg	5.21		2,439	
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]					0.0444

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	321,558.2	324,346.09	8,000	19,102,640
18 MW	XB544207	kwh	406,595.5	406,596.90	1,000	1,000
90 MW	XB569260	kwh	2,363,215.0	2,413,890.00	1,000	50,675,000
90 MW	XB569252	kwh	2,285,192.0	2,332,258.00	1,000	47,066,000
90 MW	XB569251	kwh	2,194,897.0	2,219,819.00	1,000	24,922,000
Total Electricity Generated - E(GT)					kwh	141,766,640

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
Meter	GJU64717	kwh	2,691.0	2,704.70	2,500	34,075
- I	12526268	kwh	1,231.3	1,241.20	96,000	948,480
- II	12526271	kwh	613.4	620.63	96,000	692,160
	XC598784	kwh	640.62	652,587	1,000	11,965,000
	XC598785	kwh	456.88	505,423	1,000	8,537,000
Total Auxiliary Power					kwh	22,176,715

GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ENERGY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$[(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$ 6,254.66 kwh

ENERGY SENT OUT (ex-bus) during the month - ESO

Electricity Generated - Aux Consumption 119,559,92 kwh

Energy Generated by using Biomass - Eb(ex-bus)

$\times [1 - ((E(GT) - ESO)/E(GT))]$ 5,309,582.0 kwh

S. Singh

SANJIV KUMAR
Vice President
Reliance Industries Limited
Dahej Manufacturing Division

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/239

February 9, 2022

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Sub: Submission of monthly electricity generation data for January-2022 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for January-2022 for your kind consideration please. Accordingly, following units generated through biomass cofiring, required to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019:

Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Jan-22	54,29,946.37	54,29,946.37

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anil Desai)

Sr. General Manager - Corporate Affairs Dept.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Jan-22

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL	BIOMASS
		Data	Data
	Kg	75,550,222	2,569,440
CV of Opening Balance	Kcal/kg	5,210	2,439
CV during month	Kg	112,380,720	8,346,375
CV of Quantity Received	Kcal/kg	5,353.51	2,801.81
	Kg	79,396,525	1,212,351
CV of Closing Balance	Kcal/kg	5,375.41	2,754.34
		568,459,089,959	26,312,594,245
Ratio of Power Generated through Biomass $[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)]$			
0.0442			

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	324,346.09	325,922.56	8,000	12,611,760
18 MW	XB544207	kwh	406,596.90	406,596.90	1,000	-
90 MW	XB569260	kwh	2,413,890.00	2,458,465.00	1,000	44,575,000
90 MW	XB569252	kwh	2,332,258.00	2,376,503.00	1,000	44,245,000
90 MW	XB569251	kwh	2,219,819.00	2,264,030.00	1,000	44,211,000
Total Electricity Generated - E(GT)					kwh	145,642,760

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
Generator - I	GJU64717	kwh	2,704.70	2,716.06	2,500	28,400
Generator - II	12526268	kwh	1,241.20	1,249.79	96,000	824,640
Generator - III	12526271	kwh	620.63	630.67	96,000	963,840
Generator - IV	XC598784	kwh	652,587	663,482	1,000	10,895,000
Generator - V	XC598785	kwh	505,423	515,615	1,000	10,192,000
Total Auxiliary Power					kwh	22,903,880

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

Electricity Generated from Biomass at Generator Terminal - Eb(G)	
$[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	6,443,210 kwh
Electricity Generated from Biomass at Generator Terminal - ESO	
Electricity Generated - Aux Consumption	122,738,880 kwh
Electricity Generated by using Biomass - Eb(ex-bus)	
$Eb(G) \times [1 - \{(E(GT) - ESO) / E(GT)\}]$	5,429,946.37 kwh


SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Jan-2022

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Coal	ADANI ENTERPRISES	28.12.2015	5,584	-	4,953,790	4,993,790		5353.51	5237.93	5210.48	5375.41
Coal	MV CLIVIA-84	18.10.2021	5,650	-	28,950,450	-	28,990,450				
Coal	MV STAR LUNA-85	19.11.2021	5,650	28,353,030	41,471,152	39,934,126	29,890,056				
Coal	MV MAGIC THUNDER-86	29.12.2021	5,579	50,045,540	-	10,509,925	39,535,615				
Coal	MV DOUBLE PRESTIGE-87	15.01.2022	5,696	31,593,100	-	22,701,804	8,891,296				
Coal	JMD	06.05.2021	5,519	2,389,050	54,830	1,256,880	1,227,000				
Total				112,380,720	75,553,222	79,396,525	108,534,417	5354	5238	5210	5375

B. Biomass GCV Working

Biomass Material	Agent/ Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Wood chips	MS ENTERPRISE	24.1.2022	3,969.00	54,350	-	-	54,350	2801.81	2711.63	2438.85	2754.34
Coriander + Cumin	Amru: Biocoal	09.11.2021	3,522.50	725,460	-	114,910	610,550				
Soyabean+ Mustard	OM Industries	06.01.2022	3,056.00	579,130	-	-	579,130				
mustard	RAGHAV AGRO INDUSTRIES	12.01.2022	3,497.50	388,185	-	113,160	275,035				
Groundnut shell	PATIDAR BRICQUETTES	17.01.2022	3,444.00	174,240	-	-	174,240				
Soyabean+ Mustard	SEVEN ACCESS	24.11.2021	3,021.00	24,840	-	-	24,840				
Soya	Gramon Energy	16.11.2021	3,205.50	88,830	-	-	88,830				
Coriander+Soyabean+ Mustard	VISHAL CONSTRUCTION	22.11.2021	3,728.50	11,580	-	-	11,580				
Bagasse	Ready Fuel - Bagasse	11.11.2021	2,422.50	4,688,010	2,527,775	839,211	6,386,574				
Juliflora	Ready Fuel - Biomass	11.11.2021	2,422.50	5,700	-	-	5,700				
Almond + Castor	Green Energy	06.12.2021	3,370.00	344,715	-	-	344,715				
Soyabean+ Mustard	SHRI KHANDESHWAR	12.11.2021	2,967.00	110,355	-	-	110,355				
Soya husk	VIRTUAL-WHITE FLAME	11.11.2021	2,150.50	75,270	-	-	75,270				
Juliflora	JMD-BIOMASS	13.12.2021	3,769.00	9,700	31,665	16,800	24,565				
Juliflora	Biofuel Junction	06.12.2021	3,389.00	117,120	-	-	117,120				
mustard	BHAVANI BIC ENERGY	29.06.2021	2,837.00	49,560	-	-	49,560				
Juliflora	Green Gold Biofuel	11.05.2021	3,568.50	305,510	-	94,790	210,720				
Saw dust	Kalpataru Industries	27.12.2021	2,829.00	443,150	-	33,480	409,670				
Cotton	MARUTI BIOCOAL INDUSTRIES	09.11.2021	3,323.00	150,660	-	-	150,660				
				8,346,375	2,563,440	1,212,351	9,703,464	2802	2712	2439	2754


SANJIV PRASAD
 Vice President
 Reliance Industries Limited

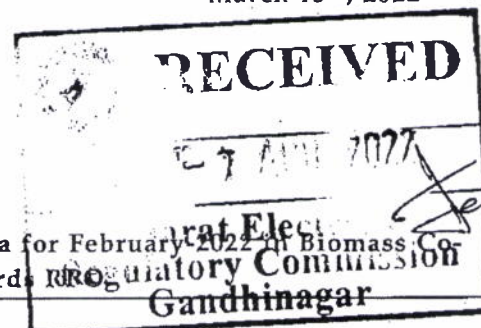
Reliance
Industries Limited

CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/363

March 15th, 2022

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR



Sub: Submission of monthly electricity generation data for February 2022 of Biomass Cofired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021 and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC), to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for February-2022 for your kind consideration please. Accordingly, following units generated through biomass cofiring, required to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
February-22	55,46,030	55,46,030

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited

(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

D.V. Chaudhary
Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.
2513122

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Dahej Manufacturing Division

P. O. : Dahej, Taluka : Vagra, District - Bharuch - 392 130, Gujarat, India. Phone: +91-02641-282000

Registered Office : 3rd Floor, Maker Chambers IV, 222, Nariman Point. Mumbai - 400 021, India.

Feb-22

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
TY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

	Unit	COAL		BIOMASS	
		Data	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Data	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
CV of Opening Balance	Kg	79,396,525	497,264,847,506	1,212,351	26,741,050,568
d during month	Kcal/kg	5,375.41		2,754.34	
CV of Quantity Received	Kg	73,763,050		10,906,595	
	Kcal/kg	5,409.35		3,074.89	
CV of Closing Balance	Kg	59,786,317		3,296,456	
	Kcal/kg	5,495.14		3,074.44	
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]					0.0510

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
34 MW	2626393	kwh	325,922.56	326,807.69	8,000	7,081,040
18 MW	XB544207	kwh	406,596.90	408,552.20	1,000	1,955,300
90 MW	XB569260	kwh	2,458,465.00	2,497,978.00	1,000	39,513,000
90 MW	XB569252	kwh	2,376,503.00	2,416,576.00	1,000	40,073,000
90 MW	XB569251	kwh	2,264,030.00	2,304,552.00	1,000	40,522,000
Total Electricity Generated - E(GT)					kwh	129,144,340

AUXILIARY POWER USED FOR GENERATING POWER

	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
x Meter	GJU64717	kwh	2,716.06	2,725.21	2,500	22,875
ter - I	12526268	kwh	1,249.79	1,254.53	96,000	455,040
ter - II	12526271	kwh	630.67	641.21	96,000	1,011,840
- I	XC598784	kwh	663,482	673,989	1,000	10,507,000
- II	XC598785	kwh	515,615	524,085	1,000	8,470,000
Total Auxiliary Power					kwh	20,466,755

GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$[(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	6,590,489 kwh
TRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
tricity Generated - Aux Consumption	108,677,585 kwh
al Energy Generated by using Biomass - Eb(ex-bus)	
$E_b \times [1 - ((E(GT) - ESO)/E(GT))]$	5,546,030.70 kwh


SANJAY PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Feb-2022

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Coal	ADANI ENTERPRISES	28.12.2015	5,884	-	4,993,790	4,993,790		5409.35	5325.56	5375.41	5495.14
Coal	MV STAR LUNA-85	19.11.2021	5,250	-	39,934,126	-	39,934,126				
Coal	MV MAGIC THUNDER-86	29.12.2021	5,379	26,094,400	10,509,925	12,966,886	23,637,439				
Coal	MV NAVIOS GALAXY II -87	15.01.2022	5,696	44,586,900	22,701,804	39,710,011	27,578,693				
Coal	JMD	06.05.2021	1,519	3,081,750	1,256,880	2,115,630	2,223,000				
Total				73,763,050	79,396,525	59,786,317	93,373,258	5409	5326	5375	5495

B. Biomass GCV Working

Biomass Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
								kCal/kg	kCal/kg	kCal/kg	kCal/kg
Soyabean+ Mustard	SAISAGAR BIOYAMAS FULES PRODUCTS	29.01.2022	2,993.00	338,430	-	-	338,430	3074.89	3031.01	2754.34	3074.44
Wood chips	M S ENTERPRISE	24.01.2022	3,789.00	459,100	-	-	459,100				
Soyabean+ Mustard	GPS KANSAL INDUSTRIES	10.02.2022	3,618.00	845,010	-	708,570	136,440				
Soya	GRAMIN ENERGY SOLUTIONS PRIVATE	16.11.2021	3,317.00	140,750	-	-	140,750				
Soyabean+ Mustard	OM INDUSTRIES	15.02.2022	3,204.00	512,900	-	-	512,900				
mustard	RAGHAV AGRO INDUSTRIES	12.01.2022	3,497.50	117,240	113,160	-	230,400				
Soya	SHREE NARAYAN INDUSTRIES	24.01.2022	3,492.00	565,540	-	419,670	145,870				
Groundnut shell	PATIDAR BRIQUETTES	17.01.2022	3,302.00	475,380	-	-	475,380				
Coriander + Cumin	Amrut Biocoal	09.11.2021	3,582.50	457,870	114,910	-	572,780				
Juliflora	SHUBH TRADING	18.02.2022	3,128.00	18,620	-	-	18,620				
Soyabean+ Mustard	SEVEN ACESS	18.01.2022	3,452.00	1,042,210	-	529,230.0	512,980				
Soya husk	3E SAVERS INDIA LLP	27.01.2022	3,417.00	199,190	-	-	199,190				
Almond + Castor	Green Energy	16.12.2021	3,683.00	19,930	-	-	19,930				
Bagasse	Ready Fuel - Bagasse	11.11.2021	2,422.50	3,904,270	839,211	1,378,481	3,365,000				
mustard	MANUSHREE BIOFUEL MANDSAUR	18.02.2022	3,595.00	716,450	-	161,100	555,350				
Juliflora	Biofuel Junction	16.12.2022	3,266.00	79,840	-	-	79,840				
Soya husk	VIRTUAL-WHITE FLAME	31.12.2021	3,076.00	24,280	-	-	24,280				
Cotton	MARUTI BIOCOAL INDUSTRIES	30.12.2021	2,981.00	181,315	-	-	181,315				
Juliflora	GREEN GOLD BIOFUELS	17.11.2021	3,598.50	566,060	94,790	82,605	578,245				
Juliflora	JMD Biomass	13.12.2021	3,749.00	-	16,800	16,800	-				
Saw dust	KALPATARU INDUSTRIES	27.12.2021	2,829.00	-	33,480	-	33,480				
mustard	BHAWANI BIO ENERGY	24.01.2022	2,746.00	242,210	-	-	242,210				
				10,906,595	1,212,351	3,296,456	8,822,490	3075	3031	2754	3074


SANJIV PRASAD
 Vice President
 Reliance Industries Limited

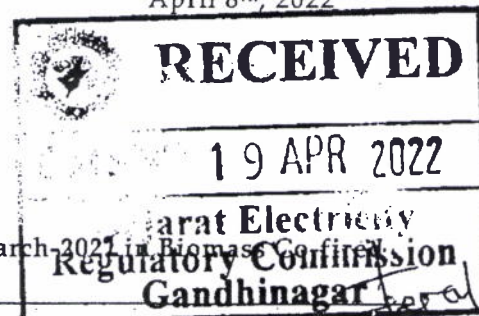
Reliance
Industries Limited

CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/373

April 8th, 2022

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR



Sub: Submission of monthly electricity generation data for March-2021 in Biomass Cofiring thermal power plant for consideration towards RPO

- Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021 and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC), to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring.

For consideration of electricity generated through biomass, we herewith submit monthly data of Fuel, GCV & electricity generation, as there is no methodology prescribed by Hon GERC, we have calculated the power from cofiring of Biomass as per the methodology advised by CERC in order dtd 18.02.2020. Therefore, we herewith submit monthly data for March-2022 for your kind consideration please. Accordingly, following units generated through biomass cofiring, required to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
March-22	11,061,289.32	11,061,289.32

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

R.V. Chaudhary
Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.
18/11/22.

Copy fwcs:
Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Dahej Manufacturing Division

P. O. : Dahej, Taluka : Vagra, District - Bharuch - 392 130, Gujarat, India. Phone: +91-02641-282000

Registered Office : 3rd Floor, Maker Chambers IV, 222, Nariman Point. Mumbai - 400 021, India.

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/373

April 8th, 2022

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Sub: Submission of monthly electricity generation data for March-2022 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019

Dear Sir,

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Month	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
March-22	11,061,289.32	11,061,289.32

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)
Sr. General Manager - Corporate Affairs Dept.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: As Above

Mar-22

RELIANCE INDUSTRIES LIMITED - DAHEJ MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL	BIOMASS
		Data	Data
Opening Balance	Kg	59,786,317	3,296,456
Weighted Avg GCV of Opening Balance	Kcal/kg	5,495.14	3,074.44
Quantity Received during month	Kg	80,880,880	18,696,025
Weighted Avg GCV of Quantity Received	Kcal/kg	4,902.95	3,187.77
Closing Stock	Kg	46,809,846	4,002,023
Weighted Avg GCV of Closing Balance	Kcal/kg	5,043.91	3,116.87
		Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)
		488,984,442,253	57,259,538,371
Ratio of Power Generated through Biomass [$Q_b \times G_b$]/[($Q_c \times G_c$)+($Q_b \times G_b$)]			
3.1048			

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	M/F	Electrical Units (kwh)
CPP-I : STG-I	34 MW	2626393	kwh	326,807.69	327,297.75	E,000	3,920,480
CPP-III : STG-II	18 MW	XB544207	kwh	408,552.20	410,339.11	1,000	1,736,900
CCPP : STG-III	90 MW	XB569260	kwh	2,497,978.00	2,538,370.00	1,000	40,332,000
CCPP : STG-IV	90 MW	XB569252	kwh	2,416,576.00	2,456,898.00	1,000	40,322,000
CCPP : STG-V	90 MW	XB569251	kwh	2,304,552.00	2,344,921.00	1,000	40,359,000
				Total Electricity Generated - E(GT)		kwh	126,730,380

C. AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	M/F	Electrical Units (kwh)
CPP-I : STG-I Aux Meter	GJU64717	kwh	2,725.21	2,729.09	E,500	9,700
CPP-III : Aux Meter - I	12526268	kwh	1,254.53	1,262.55	€6,000	758,000
CPP-III : Aux Meter - II	12526271	kwh	641.21	649.33	€6,000	732,400
CCPP Aux Meter - I	XC598784	kwh	673,989	684,205	1,000	10,217,000
CCPP Aux Meter - II	XC598785	kwh	524,085	533,575	1,000	9,491,000
			Total Auxiliary Power		kwh	21,258,100

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY	
1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	13,290,701 kwh
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	105,522,280 kwh
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)]$	11,061,289.32 kwh

Sanjiv Prasad
SANJIV PRASAD
 Vice President
 Reliance Industries Limited
 Dahej Manufacturing Division

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Mar-2022

A. Coal GCV Working

Coal	Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock	Closing Stock	Coal Consumed	Weighted Average GCV of Coal			
			kCal/kg	kg	kg	kg	kg	Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock
Coal	ADANI ENTERPRISES	28.12.2015	5,884	-	4,992,790	4,992,790	-	4902.95	5209.86	5495.14	5043.91
Coal	MV ARTEMIS-89		4,666	6,811,190	-	4,823,732	1,987,448				
Coal	MV Good will-88	16.02.2022	5,013	72,396,530	-	56,642,354	15,555,176				
Coal	MV MAGIC THUNDER-86	29.12.2021	5,379	-	12,964,886	-	2,965,886				
Coal	MV NAVIOS GALAXY II -87	15.01.2022	5,696	-	39,714,011	-	19,713,011				
Coal	JMD	06.05.2021	1,519	1,671,160	2,114,630	354,500	3,634,900				
Total				30,880,880	59,784,317	46,804,386	13,857,551	4903	5210	5495	5044

B. Biomass GCV Working

Biomass Material	Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock	Closing Stock	Biomass Consumed	Weighted Average GCV of Biomass			
			kCal/kg	kg	kg	kg	kg	Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
Soyabean+ Mustard	SAI SAGAR BIOYAMAS FUELS PRODUCTS	29.01.2022	2,936.00	446,960	-	1,301.00	445,160	3187.76	3182.77	3074.44	3116.87
Wood chips	M S ENTERPRISE	24.01.2022	3,435.00	226,240	-	4,331.00	322,110				
Soyabean+ Mustard	GPS KANSAL INDUSTRIES	10.02.2022	3,618.00	1,175,120	705,570	1,441.00	1,884,250				
Soya	SHRI KRISHNA INDUSTRIES	16.11.2021	2,996.00	102,200	-	21,734.00	80,410				
Soyabean+ Mustard	OM INDUSTRIES	15.02.2022	3,204.00	134,505	-	4,521.00	189,520				
mustard	IAI SAI BRIQUETTES INDUSTRIES	12.01.2022	3,696.00	452,055	-	-	482,055				
Soya	SHREE NARAYAN INDUSTRIES	24.01.2022	3,492.00	1,297,440	414,670	67,321.00	1,649,268				
Groundnut shell	PATIDAR BRIQUETTES	17.01.2022	3,320.00	455,390	-	-	455,390				
Coriander + Cumin	Amrut Biocoal	09.11.2021	3,892.00	404,285	-	22,441.00	381,845				
Juliflora	SHUBH TRADING	18.02.2022	3,331.00	582,325	-	-	582,325				
Coriander + Cumin	Race Eco	09.03.2022	3,590.00	1,706,285	-	136,451.00	1,570,180				
Soyabean+ Mustard	SEVEN ACCESS	18.01.2022	3,452.00	1,000,945	524,230	439,311.00	1,180,560				
Soya husk	JE SAVERS INDIA LLP	27.01.2022	3,307.00	295,670	-	25,131.00	270,220				
Almond + Castor	S K AGRO FUELS	16.12.2021	3,464.00	297,750	-	-	297,750				
Soya husk	NJ RENEWABLE ENERGY PRIVATE	06.03.2022	3,452.00	1,292,525	-	656,351.00	635,675				
Bagasse	Ready Fuel - Bagasse	11.11.2021	2,422.50	5,401,835	1,375,481	1,536,841.00	5,258,570				
mustard	MANUSHREE BIOFUEL MANDSAUR	18.02.2022	3,595.00	1,306,760	16,100	148,431.00	1,319,270				
Juliflora	GIRNAR INDUSTRIES	16.12.2022	3,403.00	75,170	-	25,101.00	50,070				
Juliflora	Vishal	31.12.2021	3,463.00	130,010	-	79,731.00	50,280				
Soya husk	VIRTUAL-WHITE FLAME	31.12.2021	3,144.00	137,620	-	-	137,620				
Soya husk	Shriram briquettes	24.02.2022	3,667.00	134,260	-	104,151.00	-				
Juliflora	GREEN GOLD BIOFUELS	17.11.2021	3,598.50	136,990	80,605	126,551.00	153,080				
Juliflora	JMD Biomass	13.12.2021	3,749.00	51,300	14,800	61,301.00	16,800				
Saw dust	KALPATARU INDUSTRIES	27.12.2021	3,325.00	25,640	-	-	25,640				
mustard	BHAWANI BIO ENERGY	24.01.2022	3,503.00	547,060	-	61,731.00	485,330				
Soya husk	DHAKAD INDUSTRIES	06.03.2022	3,899.00	142,595	-	142,595.00	0				
mustard	HADOTI BIOTECH PRIVATE LIMITED	09.03.2022	3,703.00	117,770	-	117,770.00	0				
Cotton	MAYABHAI GOVINDBHAI MAKWANA	19.02.2022	3,234.00	16,390	-	16,390.00	0				
Coriander + Cumin	BIOFUELS JUNCTION PRIVATE LIMITED	10.03.2022	3,736.00	122,490	-	122,490.00	0				
mustard	HIND BIO ENERGY	15.02.2022	3,670.00	77,440	-	77,440.00	0				
				18,696,025	3,294,456	3,021,083	7,990,458	3188	3183	3074	3117

o/c

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/53

July 05, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

9/11/21
Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Sub: Submission of CA Certificate towards electricity generation in Biomass Co-fired thermal power plant for consideration towards RPO for the period Feb-21 & Mar-21

- Ref:**
1. RIL Letter to GEDA dtd. 02.02.2021
 2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019
 3. GERC Order No. 1 of 2018 dtd. 15.03.2018

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring. Further, as per GERC Order dtd. 15.03.2018, read with Point No. 4.11 (Monitoring Mechanism for the use of fossil and non fossil fuel), it is required to submit details of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Therefore, we herewith submit CA Certificate for monthly data for Feb-21 & Mar-21 towards Quarter-IV of FY 2020-21 for your kind consideration please. Accordingly, following units generated through biomass cofiring, to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

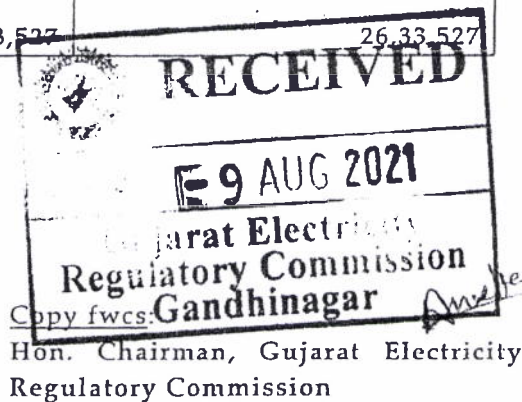
Period	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Feb-21 & March-21 (Quarter-IV of FY 2020-21)	26,33,527	26,33,527

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited


(Anis Desai)



To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai - 400 021.

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF FEBRUARY 2021 TO MARCH 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co - firing of Biomass and Power generation at Dahej manufacturing division for the month February 2021 to March 2021, duly signed by the authorized signatory of the Company ('the Statement') is annexed, which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as referred to in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.



Conclusion

8. We hereby conclude that the details as referred to Annexure A is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

Restriction on Use

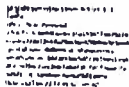
9. This digitally signed certificate has been issued for submission to GEDA, CED, GERC & any statutory authorities for the purpose of any statutory permissions/processes and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

For Chaturvedi & Shah LLP

Chartered Accountants

Firm Registration No. 101720W/W100355

Sandesh
Bankatlal
Ladha



Sandesh Ladha

Partner

Membership No.: 047841

Place: Mumbai

UDIN: 21047841AAAFOM1538

Certificate No.: 1212/2021-22

Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF FEBRUARY 2021 TO MARCH 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point – 400 021, the statement in respect of fuel usage and procurement for co-firing of biomass and power generation at dahej manufacturing division for the month February 2021 to March 2021 is as below :

Fuel Usage & Procurement Statement - FY 2020-21 - (Feb 21 to March 21)

Sr No	Particulars	Coal			Biomass		
		Feb-21	Mar-21	Cumulative Qty.	Feb-21	Mar-21	Cumulative Qty.
		MT	MT	MT	MT	MT	MT
1	Opening Stock	68,685	75,815	68,685	-	569	0
2	Qty. Procured (Receipt)	1,26,976	98,500	2,25,476	1,983	1,998	3,981
3	Qty. Consumed	1,19,845	1,07,708	2,27,554	1,414	1,980	3,394
4	Closing Stock	75,815	66,607	66,607	569	588	588

Energy Generation

		Feb-21	Mar-21	Cumulative Qty.
		Kwh	Kwh	Kwh
1	Gross Electricity Generated - E(GT)	12,70,86,240	14,61,49,480	27,32,35,720
2	Net Electricity Generated* - ESO	10,72,44,255	12,41,70,935	23,14,15,190
3	Electricity Generated from Biomass - Eb(G)	12,39,967	18,68,087	31,08,054
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	10,46,371	15,87,156	26,33,527

Note : * Net Electricity Generated = Gross Electricity Generated - Auxiliary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020

For Reliance Industries Limited


Authorised Signatory

Name: Bajrang Kedia

Designation: Sr. General Manager

Place: Bharuch

Date: 22nd June, 2021.

o/c

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/111

September 14, 2021

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Sub: Submission of CA Certificate towards electricity generation in Biomass Co-fired thermal power plant for consideration towards RPO for the period Apr-21 to June-21

- Ref:**
1. RIL Letter to GEDA dtd. 02.02.2021
 2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019
 3. GERC Order No. 1 of 2018 dtd. 15.03.2018

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021, to approve and adopt methodology approved by CERC for calculating quantum of energy generated through biomass cofiring. Further, as per GERC Order dtd. 15.03.2018, read with Point No. 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit details of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Therefore, we herewith submit CA Certificate for monthly data for period Apr-21 to June-21 towards Quarter-I of FY 2021-22 for your kind consideration please. Accordingly, following units generated through biomass cofiring, to be adjusted against our non-solar RPO as per MNRE notification dated 26.09.2019

Period	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Apr-21 to June-21 (Quarter-I of FY 2021-22)	92,90,248	92,90,248

Submitted for your information and record please.

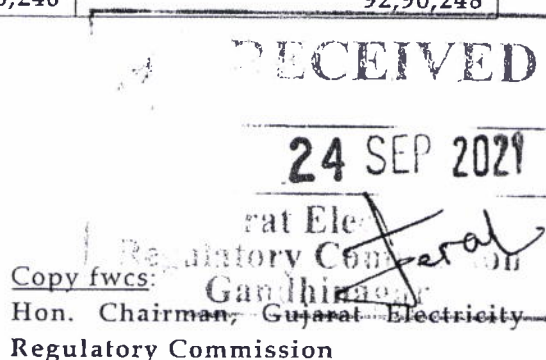
Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Anis Desai)

Sr. General Manager - Corporate Affairs Dept.



Encl: CA Certificate

To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai – 400 021.

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF APRIL 2021 TO JUNE 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai – 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co – firing of Biomass and Power generation at Dahej manufacturing division for the month April 2021 to June 2021, duly signed by the authorized signatory of the Company ('the Statement') is annexed, which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as referred to in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

CHATURVEDI SHAH^{LLP}

Chartered Accountants

Conclusion

8. We hereby conclude that the details as referred to **Annexure A** is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

Restriction on Use

9. This digitally signed certificate has been issued for submission to GEDA, CED, GERC & any statutory authorities for the purpose of any statutory permissions/processes / compliances (statutory / judicial body / etc.) and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

For Chaturvedi & Shah LLP

Chartered Accountants

Firm Registration No. 101720W/W100355

Sandesh
Bankatlal
Ladha

Digitally signed by Sandesh Bankatlal Ladha
DN: cn=Sandesh Bankatlal Ladha, o=CHATURVEDI & SHAH LLP, email=sandesh@chaturvediandshah.com, c=IN
Date: 2021.12.22 15:45:15 +05'30'

Sandesh Ladha

Partner

Membership No.: 047841

Place: Mumbai

UDIN: 21047841AAAJP3870

Certificate No.: 1289/2021-22

Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF APRIL 2021 TO JUNE 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point - 400 021, the statement in respect of fuel usage and procurement for co - firing of biomass and power generation at Dahej manufacturing division for the month April 2021 to June 2021 is as below:

Fuel Usage & Procurement Statement - FY 2021-22 : Quarter - I (Apr-21 to June-21)

Sr No	Particulars	Coal				Biomass			
		Apr-21	May-21	Jun-21	Cumulative Qty	Apr-21	May-21	Jun-21	Cumulative Qty
		MT	MT	MT	MT	MT	MT	MT	MT
1	Opening Stock	66,607	65,920	47,623	66,607	588	201	223	588
2	Qty Procured (Receipt)	95,692	90,268	1,35,568	3,21,528	4,730	3,410	3,622	11,763
3	Qty Consumed	96,379	1,08,565	1,07,406	3,12,349	5,117	3,389	3,635	12,141
4	Closing Stock	65,920	47,623	75,706	75,706	201	223	210	210

Energy Generation

		Apr-21	May-21	Jun-21	Cumulative Qty
		kwh	kwh	kwh	kwh
1	Gross Electricity Generated - E(GT)	10,50,33,180	14,25,58,620	14,17,45,920	38,93,37,720
2	Net Electricity Generated* - ESO	9,26,79,915	12,85,78,440	12,77,37,320	34,89,95,675
3	Electricity Generated from Biomass - Eb(G)	40,02,023	30,24,102	33,63,817	1,03,89,942
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	35,31,333	27,27,540	30,31,375	92,90,248

Note : * Net Electricity Generated = Gross Electricity Generated - Auxiliary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020

For Reliance Industries Limited.



Authorised Signatory

Name: Rajrang Kedia

Designation: Sr. General Manager

Place: Bharuch

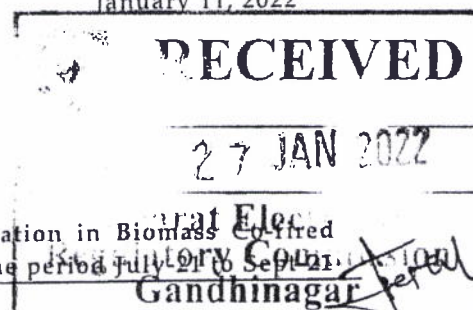
0/C

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/231

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

January 11, 2022



Sub: Submission of CA Certificate towards electricity generation in Biomass Cofired thermal power plant for consideration towards RPO for the period July 21 to Sept-21

- Ref:**
1. RIL Letter to GEDA dtd. 02.02.2021
 2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019
 3. GERC Order No. 1 of 2018 dtd. 15.03.2018

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021 and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC), to approve the methodology as notified by CERC for calculating quantum of energy generated through biomass cofiring. Further, as per GERC Order dtd. 15.03.2018, read with Point No. 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit details of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Therefore, we herewith submit CA Certificate for monthly data for period July-21 to Sept-21 towards Quarter-II of FY 2021-22 for your kind consideration please. Accordingly, following units generated through biomass cofiring, may please be considered towards our non-solar RPO as per MNRE notification dated 26.09.2019

Period	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
July-21 to Sept-21 (Quarter-II of FY 2021-22)	99,40,428	99,40,428

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited


(Amit Desai)

Sr. General Manager - Corporate Affairs Dept.

Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: CA Certificate

CHATURVEDI SHAH^{LLP}
Chartered Accountants

To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai - 400 021.

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF JULY 2021 TO SEPTEMBER 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co - firing of Biomass and Power generation at Dahej manufacturing division for the month July to September 2021, duly signed by the authorized signatory of the Company ('the Statement') is attached as "Annexure A", which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as referred to in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

CHATURVEDI SHAH_{LLP}
Chartered Accountants**Conclusion**

8. We hereby conclude that the details as referred to **Annexure A** is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

Restriction on Use

9. This digitally signed certificate has been issued for submission to Gujarat Energy Development Agency (GEDA), Collector of Electricity Duty (CED), Gujarat Electricity Regulatory Commission (GERC) & any statutory authorities for the purpose of any statutory permissions/processes compliances (statutory / judicial body / etc.) and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

For Chaturvedi & Shah LLP

Chartered Accountants

Firm Registration No. 101720W/W100355

Sandesh
Bankatlal
Ladha

**Sandesh Ladha**

Partner

Membership No.: 047841

Place: Mumbai

UDIN, 22047841AAAACF1598

Certificate No.. 1409 /2021-22

Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF JULY 2021 TO SEPTEMBER 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point - 400 021, the statement in respect of fuel usage and procurement for co - firing of biomass and power generation at Dahej manufacturing division for the month July 2021 to September 2021 is as below :

Fuel Usage & Procurement Statement - FY 2021-22 : Quarter - II (Jul-21 to Sept-21)

Sr No	Particulars	Coal				Biomass			
		Jul-21	Aug-21	Sep-21	Cumulative Qty	Jul-21	Aug-21	Sep-21	Cumulative Qty
		MT	MT	MT	MT	MT	MT	MT	MT
1	Opening Stock	75,786	97,097	90,974	75,786	210	443	434	210
2	Qty Procured (Receipt)	1,34,392	1,06,112	68,021	3,08,526	5,255	5,163	2,340	12,758
3	Qty Consumed	1,13,082	1,12,236	1,09,965	3,35,282	5,021	5,172	2,733	12,927
4	Closing Stock	97,097	90,974	49,030	49,030	443	434	41	41

Energy Generation

		Jul-21	Aug-21	Sep-21	Cumulative Qty
		kwh	kwh	kwh	kwh
1	Gross Electricity Generated - E(GT)	14,57,06,840	14,49,18,760	14,04,88,600	43,11,14,200
2	Net Electricity Generated* - ESO	10,00,52,795	12,05,47,415	11,01,09,490	37,55,09,700
3	Electricity Generated from Biomass - Eb(G)	45,19,468	43,47,323	24,75,322	1,13,42,113
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	41,51,785	37,06,218	20,82,425	99,40,428

Note : * Net Electricity Generated = Gross Electricity Generated - Auxiliary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020
For Reliance Industries Limited


Authorised Signatory

Name: Bajrang Kumar Kedia

Designation: Sr General Manager

Place: Dahej

Date: 31.12.2021

o/c

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

RIL-DMD/CAD/2021-22/376

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR

February 15, 2022

RECEIVED

18 FEB 2022

Sub: Submission of CA Certificate towards electricity generation in Biomass Co-fired thermal power plant for consideration towards RPO for the period Oct-21 to Dec-21

- Ref: 1. RIL Letter to GEDA dtd. 02.02.2021
2. CERC Order dtd. 18.02.2020 & MNRE Notification dtd. 26.09.2019
3. GERC Order No. 1 of 2018 dtd. 15.03.2018

Dear Sir,

Reliance Industries Limited (RIL) - Dahej Manufacturing Division operates one of the largest & fully integrated Petrochemical Complex in the country at PCPIR - Dahej. RIL - Dahej caters its power requirement through its thermal power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in thermal power plants since February 2021. We have already requested GEDA, vide our letter dated 02.02.2021 and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC), to approve the methodology as notified by CERC for calculating quantum of energy generated through biomass cofiring. Further, as per GERC Order dtd. 15.03.2018, read with Point No. 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit details of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Therefore, we herewith submit CA Certificate for monthly data for period Oct-21 to Dec-21 towards Quarter-III of FY 2021-22 for your kind consideration please. Accordingly, following units generated through biomass cofiring, may please be considered towards our non-solar RPO as per MNRE notification dated 26.09.2019

Period	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
Oct-21 to Dec-21 (Quarter-III of FY 2021-22)	83,84,798	83,84,798

Submitted for your information and record please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited


(Anis Desai)

General Manager - Corporate Affairs Dept

Copy fwcs:

Hon. Chairman, Gujarat Electricity
Regulatory Commission

Encl: CA Certificate

To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai – 400 021.

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF OCTOBER 2021 TO DECEMBER 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai – 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co – firing of Biomass and Power generation at Dahej manufacturing division for the month October to December 2021, duly signed by the authorized signatory of the Company ('the Statement') is attached as "Annexure A", which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation, and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as referred to in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

8. We hereby conclude that the details as referred to Annexure A is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

9. This digitally signed certificate has been issued for submission to Gujarat Energy Development Agency (GEDA), Collector of Electricity Duty (CED), Gujarat Electricity Regulatory Commission (GERC) & any statutory authorities for the purpose of any statutory permissions/processes compliances (statutory / judicial body / etc.) and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

Firm Registration No. 101720W/W100355

[illegible]

Certificate No.: 1431 / 2021-22

Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT DAHEJ MANUFACTURING DIVISION (DMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF OCTOBER 2021 TO DECEMBER 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point - 400 021, the statement in respect of fuel usage and procurement for co - firing of biomass and power generation at Dahej manufacturing division for the month October 2021 to December 2021 is as below:

Fuel Usage & Procurement Statement - FY 2021-22 : Quarter - III (Oct-21 to Dec-21)

Sr No	Particulars	Coal				Biomass			
		Oct-21	Nov-21	Dec-21	Cumulative Qty	Oct-21	Nov-21	Dec-21	Cumulative Qty
		MT	MT	MT	MT	MT	MT	MT	MT
1	Opening Stock	49,030	63,650	76,319	49,030	41	435	861	41
2	Qty Procured (Receipt)	1,15,345	1,16,797	1,05,142	3,41,284	1,905	3,630	9,454	15,144
3	Qty Consumed	1,00,725	1,04,128	1,05,911	3,10,764	1,510	3,203	8,251	12,965
4	Closing Stock	63,650	76,319	75,550	75,550	435	861	2,569	2,569

Energy Generation

		Oct-21	Nov-21	Dec-21	Cumulative Qty
		kwh	kwh	kwh	kwh
1	Gross Electricity Generated - E(GT)	12,46,03,500	13,69,98,320	14,17,66,640	40,33,68,460
2	Net Electricity Generated* - ESO	10,23,58,325	11,51,93,960	11,95,89,925	33,71,42,210
3	Electricity Generated from Biomass - Eb(G)	10,65,482	26,15,892	62,94,663	99,76,037
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	8,75,264	21,99,553	53,09,982	83,84,798

Note : * Net Electricity Generated = Gross Electricity Generated - Auxiliary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020

For Reliance Industries Limited



Authorised Signatory

Name: Bajrang Kumar Kedia

Designation: Sr General Manager

Place: Dahej

Date: 28.01.2022

Reliance

Industries Limited

CIN # L17110MH1973PLC019786

RIL-Hz/CAD/2021-22/120

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR - 382 017

October 01, 2021
Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Pf
18/10/21

Sub : Proposed Methodology for Estimation of Electricity Generated
from Biomass in Biomass Co-fired Thermal Power Plants

Ref : 1. RIL Letter to GEDA dt. 02.02.2021
2. CERC Order dt. 18.02.2020 & MNRE Notification dt.26.09.2019

Dear Sir,

Reliance Industries Limited (RIL) - Hazira Manufacturing Division operates a world class fully integrated Petrochemical Complex at Vill. Mora, Post: Bhatha, Surat-Hazira Road, Surat and it caters its power requirement through its Captive Power Plants.

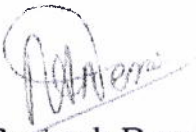
In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we hereby submit:

- * Brief Note on our plant
- * Schematic Diagram for co-firing of biomass in thermal power plants
- * Monthly Power Generation from Biomass data from Apr'2021 onwards.

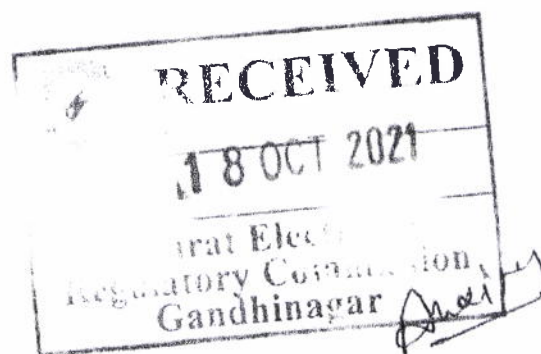
In light of above, we request you to consider electricity generated by cofiring of biomass in our thermal power plant towards compliance of RPO & oblige.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited


(Rashesh Desai)

Sr. General Manager (Corporate Affairs)



Encl: As Above

CC:- To, Secretary - GERC - GIFT CITY, GUJARAT

A Brief Note on our Plant

**Coal Based Captive Power Plant
Reliance Industries Limited
Hazira Manufacturing Division-Gujarat**

- Reliance Industries Limited (RIL) has setup a world class fully integrated Petrochemical Complex - Hazira Manufacturing Division (HMD) located at Vill. Mora, Post: Bhatha, Surat-Hazira Road, Surat
- RIL-HMD produces an extensive range of Polymers, Elastomers, Polyesters, Aromatics & Fiber & Fiber intermediates etc.
- The power and steam requirement of RIL-HMD is met by Coal based Captive Power Plant (CCPP) consisting of (05) IR-CFBC boilers with 500 TPH capacity each and four (04) Steam Turbines with 90 MW capacity each and two(02) Steam Turbines with 40 MW capacity each (condensing load 22 MW only) with following designed and current average operating parameters:

Sr No.	Particulars	Design Parameters		Operating Parameters	
		Design	Total	Current	Total
1	Power (MWH) (Condensing Load 22MW only)	04x90 + 02x40	440	04x74.5 + 02x19	336
2	Steam (TPH)	05x500	2500	05x348	1740
3	Process Steam (TPH)			450	450
4	Internal Power Consumption (MW)				40

Steam & Power Generation and Distribution for Captive Usage:

- Steam is generated in Coal Fired Boilers and supplied to common steam distribution network, and it is consumed for Power Generation in Steam Turbines and as process steam in Petrochemical plants.
- The Power generated from Steam Turbines at 11 kV is stepped up to 220 kV Voltage level and distributed across site at various Voltage Level for plants consumptions.
- As a Standby Source of Power, RIL-HMD is connected at 220 kV with GETCO grid and remains in floating mode with a Contract Demand of 27.5 MVA.
- The Auxiliary consumption of CCPP is made through Station Service Transformers and depend on Petrochemical plants power & steam needs.
- The CCPP plant involves major equipment/systems like Coal Handling, Lime Handling, Ash Handling, Boilers, Turbines, Transformers, Cooling Towers etc.

Fuel Sourcing and Utilization:

- Currently, CCPP plant is operated with imported coal of different origins

at Hazira Port is then transferred to plant site through covered trucks and stored in a covered coal shed.

- The coal received is monitored for its quality in both internal & external labs at source (as procured) and as received in port/plant.
- The CCPP plant also hosts adequate truck weighbridges to ascertain the weights carried by trucks from port or from any vendor and these weighbridges are calibrated periodically.
- The stocked coal is then processed for required particle distribution sizes (upto 8mm) and conveyed to coal bunkers for consumption in boiler.
- The combusted coal generates Super-heated steam (SHP) of 535 °C & 115 kg/cm² pressure for power generation in steam turbines and for process plant consumptions.

Biomass Procurement and Consumption Planning:

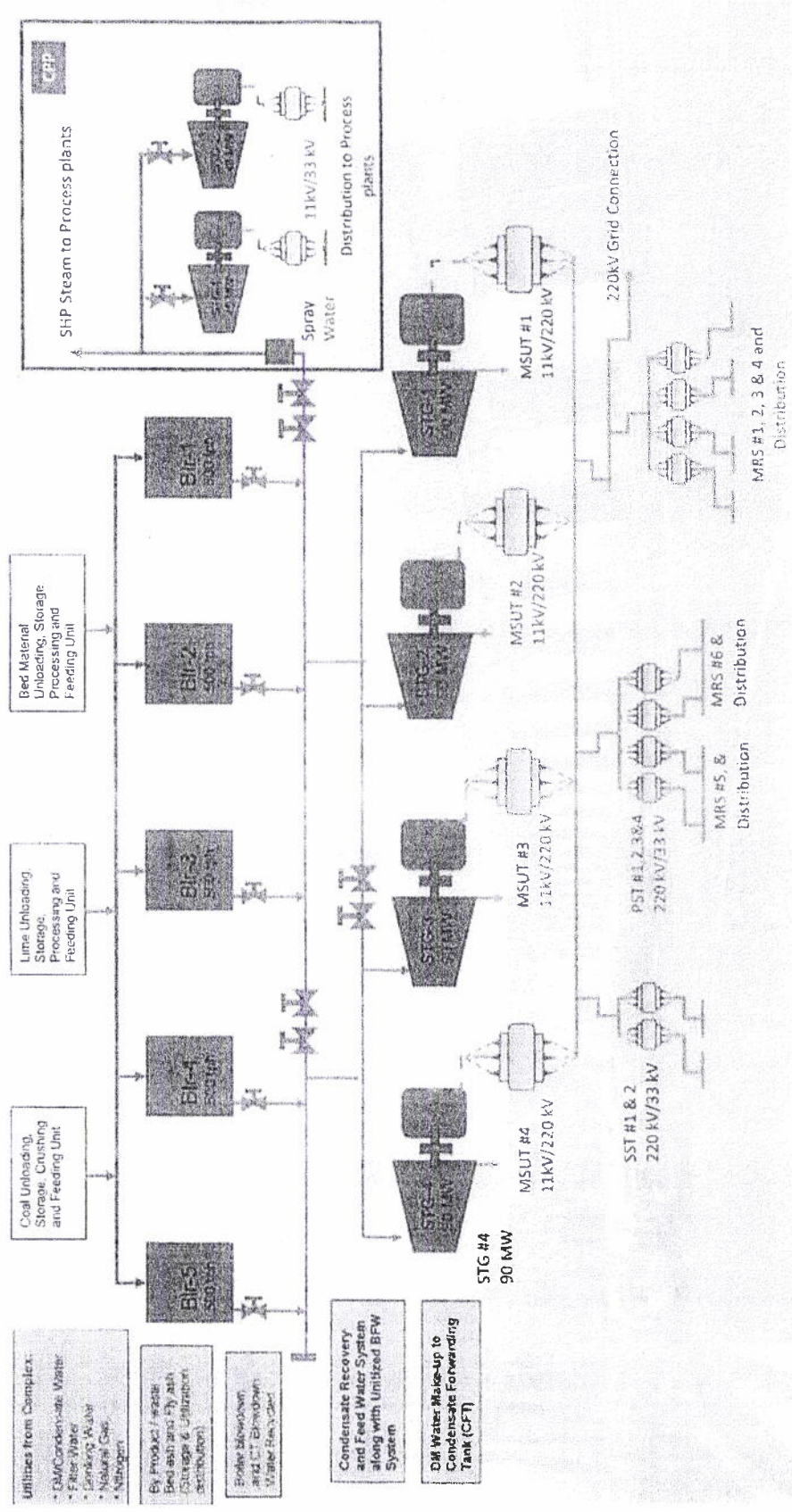
- Biomass sourcing will be done based on availability and suitability of Vendors from different areas.
- Biomass will be received through trucks at CCPP plant and necessary records for receiving and consumption of Biomass will be maintained as per the requirement.
- Biomass sample collected from each supplier on receipt and analysis will be done at our laboratory.
- The Biomass being available largely are Agro-waste and crop residue in the form of densified like briquettes/pellets and in loose forms depending on type of biomass.
- Typical Specification of Biomass which will be utilized is as under:

Sr No.	Specification	Unit	Value	Remarks
1	GCV ARB	Kcal/Kg	3000-5200	Non torrefied pellets>2800, Torrefied>3600
2	Moisture ARB	%	<12	
3	Ash ARB	%	<20	
4	HGI		>50	
5	Bulk Density	Kg/m ³	>200	
6	Fines (length 3mm)	%	<5	

- Result of Proximate analysis for Biomass sample received from different vendors:

Sr No.	Sample	Total Moisture (%)	Volatile Matter (%)	Fixed Carbon (%)	Ash (%)	GCV (kcal/kg)
1	Sample 1	8.8	59.39	13.49	17.32	3391
2	Sample 2	8.9	60.38	14.73	15.99	3494
3	Sample 3	10.7	62.89	14.84	11.57	3528
4	Sample 4	15.8	55.49	14.77	13.93	3319
5	Sample 5	14.4	52.92	12.82	10.85	3072

Power Plant Schematic



Monthly Details of Fuels (Coal & Biomass) & its GCV Working - April 2021

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to barabanki
						From Opening Stock	From New Receipt	Total Consumed			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
						kg	kg	kg			kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
DEAD STOCK-S15009		3,700	-	3,700	49,99,470	-	-	-	3,700	49,99,470					
Illiant Venus (AUST) S20046COAX		4,754	-	4,754	40,23,630	40,23,630	-	40,23,630	-	-					
hard oldendroff (indo) (S20057COAX)		4,145	40,930	4,145	94,53,150	43,57,334	-	43,57,334	4,145	50,22,426	5,042	5,329	5,362	4,957	1,14,320
ne Veni (Aust)-S20059COAX		5,748	4,26,890	5,748	73,95,643	73,95,643	4,26,890	78,22,533	-	-					
e Ocean(Aust)S20063COAX		5,638	44,42,440	5,638	7,03,06,180	6,89,05,179	-	6,89,05,179	5,638	58,43,441					
hard oldendroff (SA) (S20077COAX)		5,032	4,03,97,500	5,032	-	-	-	-	5,032	4,03,97,500					
Imer Oldendroff (SA) (S20065COAX)		5,019	10,90,21,570	5,019	-	-	5,51,66,288	5,51,66,288	5,019	5,38,55,282					
Total			15,43,29,330		9,61,78,073			14,02,74,964		11,01,18,119					1,14,320

LINE

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass			
						From Opening Stock	From New Receipt	Total Consumed			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
						kg	kg	kg			kCal/kg	kCal/kg	kCal/kg	kCal/kg
oil		3,418	64,980	-	-	-	-	-	3,418	64,980				
coal		-	-	-	-	-	-	-	-	-	3,623	3,725		3,521
Enterprise		3,716	35,650	-	-	-	1,527	1,527	3,716	34,123				
wo Biofuels		3,725	97,640	-	-	-	97,640	97,640	3,725	-				
Total			1,98,270		-			99,167		99,103				


[R. Arun Kumar]

Apr - 2021

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)

Particulars	Unit	COAL	BIOMASS
Balance	Kg	9,61,78,073	
Ad Avg GCV of Opening Balance	Kcal/kg	5,362	
Received during month	Kg	15,43,29,330	
Ad Avg GCV of Quantity Received	Kcal/kg	5,042	
Stock	Kg	11,01,18,119	
Ad Avg GCV of Closing Balance	Kcal/kg	4,957	
		Total Heat Generated by Coal (Qc x Gc) (kcal)	Total Heat Generated by Biomass (Qb x Gb) (kcal)
		7,47,99,46,90,271	36,93,90,547
			Ratio of Power Generated through Biomass [Qb x Gb]/[(Qc x Gc)+(Qb x Gb)]
			0.0005

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
G-I	40 MW	3098647	kWH	24,92,335	25,03,050	1,000	1,07,15,000
G-II	40 MW	8001941	kWH	20,85,906	21,06,834	1,000	2,09,28,000
ITG-I	90 MW	XB569261	kWH	23,66,823	24,10,268	1,000	4,34,45,000
ITG-II	90 MW	XB569259	kWH	21,41,655	21,85,501	1,000	4,38,46,000
ITG-III	90 MW	XB569255	kWH	21,97,467	22,39,989	1,000	4,25,22,000
ITG-IV	90 MW	XB569264	kWH	22,95,073	23,38,339	1,000	4,32,66,000
				Total Electricity Generated - E(GT)			20,47,22,000

AUXILIARY POWER USED FOR GENERATING POWER

Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
G-I Aux Meter	7002662	kWH	3,107.00	3,133.57	1,000	26,570
G-II Aux Meter						
meter1	7002663	kWH	7,870.80	7,910.32	1,000	39,520
meter2	7002665	kWH	6,925.76	6,975.47	1,000	49,710
meter3	7002653	kWH	10,640.22	10,708.22	1,000	68,000
meter4	7002651	kWH	10,106.53	10,162.08	1,000	55,550
meter5	7023020	kWH	44,454.04	44,836.40	1,000	3,82,360
meter6	7023021	kWH	43,178.42	43,568.84	1,000	3,90,420
meter7	7023019	kWH	38,376.15	38,376.60	1,000	450
ST-I Aux Meter	XC598792	kWH	7,09,167	7,23,085	1,000	1,39,18,000
ST-II Aux Meter	XC598788	kWH	6,50,344	6,62,666	1,000	1,23,22,000
			Total Auxiliary Power			2,72,52,580

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$$[Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$$

1,01,050 kWH

1. ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

$$\text{Total Electricity Generated} - \text{Aux Consumption}$$

17,74,69,420 kWH

2. Electrical Energy Generated by using Biomass - Eb(ex-bus)

$$E1 = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)]$$

87,598 kWH


[K. Anur Kumar]

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - May 2021

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to bank/mt
						From Opening Stock	From New Receipt	Total Consumed			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
AD STOCK (S1500 COAL)				3,700	49,99,470				3,700	49,99,470					
rd oldendroff (Indo) (S2000 COAL)				4,145	50,22,426	50,22,426		50,22,426							
Acari Aust (S2000 COAL)				5,638	58,43,441			5,38,55,283	5,638	58,43,441	4,573	4,676	4,957	4,893	
or Oldendroff (SA) (S2000 COAL)				5,032	5,38,55,283										
Pemas (Indo) S2000 COAL		4,163	7,49,99,860				6,58,95,062	6,58,95,062	4,163	86,20,058					4,84,740
rd oldendroff (SA) (S2000 COAL)		5,032	6,69,16,055	5,032	4,03,97,500	4,03,97,500	1,02,13,862	5,06,11,362	5,032	5,67,02,193					
Total			14,19,15,915		11,01,18,120			17,53,84,133		7,61,65,162					4,84,740

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass				
						From Opening Stock	From New Receipt	Total Consumed			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock	
															kg
Enterprise		3,462	5,54,780	3,418	64,980				3,457	6,19,760					
Biofuels		3,808	5,53,160	3,716	34,123	34,123	5,04,607	5,38,730	3,808	48,553	3,689	3,761	3,521	3,483	
Total			22,54,140		99,103			16,84,930		6,68,313					


[K. Arun Kumar]

May - 2021

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO
MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)

Particulars	Unit	COAL	BIOMASS
		Data	Data
Opening Balance	Kg	11,01,18,120	99,103
Weighted Avg GCV of Opening Balance	Kcal/kg	4,957	3,521
Quantity Received during month	Kg	14,19,15,915	22,54,140
Weighted Avg GCV of Quantity Received	Kcal/kg	4,573	3,689
Closing Stock	Kg	7,61,65,162	6,68,313
Weighted Avg GCV of Closing Balance	Kcal/kg	4,893	3,483
		8,22,16,86,35,010	6,33,67,29,944
		Ratio of Power Generated through Biomass [(Qb x Gb)/((Qc x Gc)+(Qb x Gb))]	
			0.0076

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	3098647	kWH	23,03,050	23,13,403	1,000	1,08,53,000
CPP : STG-II	40 MW	8001941	kWH	21,08,834	21,20,415	1,000	1,98,11,000
CCPP : STG-I	90 MW	XB569261	kWH	24,10,268	24,57,751	1,000	4,74,83,000
CCPP : STG-II	90 MW	XB569259	kWH	21,85,501	22,13,780	1,000	4,82,79,000
CCPP : STG-III	90 MW	XB569255	kWH	22,39,989	22,87,659	1,000	4,76,70,000
CCPP : STG-IV	90 MW	XB569264	kWH	23,38,339	23,85,482	1,000	4,76,43,000
				Total Electricity Generated - E(GT)		kWH	22,17,39,000

C. <u>AUXILIARY POWER USED FOR GENERATING POWER</u>						
Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I Aux Meter	7002662	kWH	3,133.57	3,159.95	1,000	26,380
CPP : STG-II Aux Meter						
Meter1	7002663	kWH	7,910.32	7,999.95	1,000	89,630
Meter2	7002665	kWH	6,975.47	6,978.49	1,000	3,020
Meter3	7002655	kWH	10,708.22	10,779.48	1,000	71,260
Meter4	7002651	kWH	10,162.08	10,220.33	1,000	58,250
Meter5	7023020	kWH	44,836.40	45,232.20	1,000	3,95,800
Meter6	7023021	kWH	43,568.84	43,686.38	1,000	1,17,540
Meter7	7023019	kWH	38,376.60	38,679.07	1,000	3,02,470
CCPP : SST-I Aux Meter	XC598792	kWH	7,23,085	7,37,248	1,000	1,41,63,000
CCPP : SST-II Aux Meter	XC598788	kWH	6,62,666	6,76,582	1,000	1,39,16,000
				Total Auxiliary Power	kwh	2,91,43,350

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [(Qb \times Gb) / ((Qc \times Gc) + (Qb \times Gb))] \times E(GT)$	16,95,946 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	19,25,95,650 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - (E(GT) - ESO / E(GT))]$	14,73,046 kWH

[Signature]
[K. Anur Kumar]

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - June 2021

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month		Opening Stock GCV	Opening Stock kg	From Opening Stock kg	Coal Consumed		Closing Stock GCV	Closing Stock kg	Weighted Average GCV of Coal				Coal sent to barabanki kg
			kg	kCal/kg				From New Receipt kg	Total Consumed kg			Coal Received kCal/kg	Coal consumed kCal/kg	Coal - Opening Stock kCal/kg	Coal - Closing Stock kCal/kg	
AL DEAD STOCK-(SI5009COAX)					3,700	49,99,470	-			3,700	49,99,470					4,75,200
Onicorm Sky (Indo) (S21004COAX)		5,003	6,87,86,214					3,37,67,140	3,37,67,140	5,003	3,45,43,874					
One Ocean(Aus)S20063COAX				5,638		58,43,441	58,43,441		58,43,441							
Portaliissa (Aus)S21008COAX		5,637	5,95,20,150					2,29,79,750	2,29,79,750	5,637	3,65,40,400					
Great Persues(Indo) S20073COAX				4,163		41,96,201	41,96,201		41,96,201	4,163	44,23,855		5,159	4,893	5,217	
Yeu Dian 103(Aus)S21012COAX		5,287	3,50,81,830					2,54,91,379	2,54,91,379	5,287	95,90,451					
Philipp oldendroff (Aus) S21016 COAX		5,492	1,31,59,850							5,492	1,31,59,850					
Richard oldendroff (SA) (S20077COAX)		5,032	31,63,450	5,032	5,67,02,193	5,67,02,193	31,63,450		5,98,65,643							4,75,200
Total			17,97,11,494			7,61,65,160			15,21,43,554		10,32,57,900					

orking.

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received In month		Opening Stock GCV	Opening Stock kg	From Opening Stock kg	Biomass Consumed		Closing Stock GCV	Closing Stock kg	Weighted Average GCV of Biomass			
			kg	kCal/kg				From New Receipt kg	Total Consumed kg			Biomass Received kCal/kg	Biomass consumed kCal/kg	Biomass - Opening Stock kCal/kg	Biomass - Closing Stock kCal/kg
coal					3,457	6,19,760	1,847		1,847	3,457	6,17,913				
hand natural products		3,668	1,69,990							3,668	1,69,990				
hi Enterprise		3,625	2,29,890		3,808	48,553	48,553		48,553	3,625	2,29,890	3,650	3,796	3,483	3,539
bio exports		3,702	55,290							3,702	55,290				
Total			4,55,170			6,68,313			50,400		10,73,083				


 [K. Anur Kumar]

June - 2021

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL	BIOMASS
Opening Balance	Kg	7,61,65,160	6,68,313
and Avg GCV of Opening Balance	Kcal/kg	4,893	3,483
Quantity Received during month	Kg	17,97,11,494	4,55,170
and Avg GCV of Quantity Received	Kcal/kg	5,305	3,650
Closing Stock	Kg	10,32,57,900	10,73,083
and Avg GCV of Closing Balance	Kcal/kg	5,217	3,539
		Total Heat Generated by Coal ($Q_c \times G_c$)	Total Heat Generated by Biomass ($Q_b \times G_b$)
		7,87,34,91,39,250	19,14,63,942
		Ratio of Power Generated through Biomass $[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)]$	
		0.0002	

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
GT-I	40 MW	3098647	kWH	25,13,903	25,23,527	1,000	96,24,000
GT-II	40 MW	8001941	kWH	21,26,645	21,45,836	1,000	1,91,91,000
STG-I	90 MW	XB569261	kWH	24,57,751	25,04,379	1,000	4,66,28,000
STG-II	90 MW	XB569259	kWH	22,33,780	22,80,992	1,000	4,72,12,000
STG-III	90 MW	XB569255	kWH	22,87,659	23,34,596	1,000	4,69,37,000
STG-IV	90 MW	XB569264	kWH	23,85,982	24,32,326	1,000	4,63,44,000
				Total Electricity Generated - E(GT)		kWH	21,59,36,000

AUXILIARY POWER USED FOR GENERATING POWER

Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
GT-I Aux Meter	7002662	kWH	3,159.95	3,185.76	1,000	25,810
GT-II Aux Meter						
Meter1	7002663	kWH	7,999.95	8,087.49	1,000	87,540
Meter2	7002665	kWH	6,978.49	6,979.74	1,000	1,250
Meter3	7002655	kWH	10,779.48	10,847.02	1,000	67,540
Meter4	7002651	kWH	10,220.33	10,276.16	1,000	55,830
Meter5	7023020	kWH	45,232.20	45,612.26	1,000	3,80,060
Meter6	7023021	kWH	43,686.38	43,686.38	1,000	
Meter7	7023019	kWH	38,679.07	39,087.21	1,000	4,08,140
ST-I Aux Meter	XC598792	kWH	7,37,248	7,50,322	1,000	1,30,74,000
ST-II Aux Meter	XC598788	kWH	6,76,582	6,90,407	1,000	1,38,25,000
			Total Auxiliary Power		kwh	2,79,25,170

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$$[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT) = 52,498 \text{ kWH}$$

J. ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

Total Electricity Generated - Aux Consumption = 18,80,10,830 kWH

Net Electrical Energy Generated by using Biomass - Eb(ex-bus)

$$Eb = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)] = 45,708 \text{ kWH}$$

[Signature]
[K Anur Kumar]

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - July 2021

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Coal Consumed			Closing Stock GCV	Weighted Average GCV of Coal				Coal sent to barabanki
					Opening Stock	From Operating Stock	From New Receipt		Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
		kCal/kg	kg	kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
DEAD STOCK (S15009COAX)		3,700		19,02,470				49,99,470					
icrom Stry (Indo) (S21004COAX)		5,003	14,24,420	3,45,43,874	2,09,07,038			5,003					
talitissa (Aust) (S21008COAX)		5,637	2,35,12,980	3,05,40,403	2,03,36,125			5,637					
al Persuett (Indo) (S20073COAX)				44,23,853				4,163					
i Dian 103X (Aust) (S21012COAX)		5,287	5,49,95,340	95,90,451		87,31,790		5,287	5,442	5,421	5,217	5,278	5,17,160
lipp oldendroff (Aust) (S21016COAX)		5,492	9,21,01,930	1,31,59,850		8,18,33,806		5,492					
Total			17,20,34,670	10,32,57,900				15,45,59,060					5,17,160

rkinn;

Agent/Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Biomass Consumed			Closing Stock GCV	Weighted Average GCV of Biomass			
					Opening Stock	From Operating Stock	From New Receipt		Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
		kCal/kg	kg	kg	kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
cal				6,17,913								
Enterprise		3,952	9,28,110	2,29,890	6,17,913			2,35,843				
id Natural Products		3,313	3,93,380	1,69,990	1,69,990			90,200				
o		3,700	3,30,580	55,290				27,120				
ustries		3,558	1,43,390									
a Energy & Agro Process		3,830	2,48,990									
i		4,264	4,80,755						3,924	3,859	3,539	3,839
b Enterprise		3,785	5,65,980					68,610				
ternational		4,514	6,46,910					74,290				
ndustries		4,077	3,26,535					85,650				
orporates		3,510	4,14,310					1,16,320				
lin Food		3,968	4,95,545					86,220				
Total			49,74,485	10,73,083				9,20,998				


[K. Arun Kumar]

July - 2021

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION

ACTIVITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL	BIOMASS
Opening Balance	Kg	10,32,57,900	10,73,083
Received during month	Kg	17,20,34,670	49,74,485
Closing Balance	Kg	12,02,10,350	9,20,898
Avg GCV of Opening Balance	Kcal/kg	5,217	3,539
Avg GCV of Quantity Received	Kcal/kg	5,442	3,924
Avg GCV of Closing Balance	Kcal/kg	5,278	3,839
Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)		8,40,39,59,75,436	
Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)			19,78,21,92,455
Ratio of Power Generated through Biomass [$Q_b \times G_b / ((Q_c \times G_c) + (Q_b \times G_b))$]			0.0230

DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
G-I	40 MW	3098647	kWH	25,23,527	25,33,429	1,000	99,02,000
G-II	40 MW	8001941	kWH	21,45,836	21,65,640	1,000	1,98,04,000
TG-I	90 MW	XB569281	kWH	25,04,379	25,55,596	1,000	5,12,17,000
TG-II	90 MW	XB569259	kWH	22,80,992	23,33,581	1,000	5,25,89,000
TG-III	90 MW	XB569255	kWH	23,34,596	23,86,478	1,000	5,18,82,000
TG-IV	90 MW	XB569264	kWH	24,32,326	24,84,211	1,000	5,18,88,000
Total Electricity Generated - E(GT)						kWH	23,72,82,000

AUXILIARY POWER USED FOR GENERATING POWER

Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
G-I Aux Meter	7002662	kWH	3,185.76	3,213.09	1,000	27,330
G-II Aux Meter						
meter1	7002663	kWH	8,087.49	8,131.06	1,000	43,570
meter2	7002665	kWH	6,979.74	7,028.04	1,000	48,300
meter3	7002655	kWH	10,847.02	10,915.79	1,000	68,770
meter4	7002651	kWH	10,276.16	10,333.45	1,000	57,290
meter5	7023020	kWH	45,612.26	46,004.03	1,000	3,91,770
meter6	7023021	kWH	43,686.38	43,686.38	1,000	
meter7	7023019	kWH	39,087.21	39,506.57	1,000	4,19,360
ST-I Aux Meter	XC598792	kWH	7,50,322	7,65,317	1,000	1,49,95,000
ST-II Aux Meter	XC598788	kWH	6,90,407	7,04,274	1,000	1,38,67,000
Total Auxiliary Power					kwh	2,99,18,390

ACTIVITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

ACTIVITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)

$Q_b \times G_b / ((Q_c \times G_c) + (Q_b \times G_b)) \times E(GT)$ **54,56,960 kWH**

1. ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO

Total Electricity Generated - Aux Consumption **20,73,63,610 kWH**

Electrical Energy Generated by using Biomass - Eb(ex-bus)

$Eb = Eb(G) \times \frac{1}{1 - [(E(GT) - ESO)/E(GT)]}$ **47,68,904 kWH**


[K. Arun Kumar]

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - August-2021

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Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to barabanki
						From Opening Stock	From New Receipt	Total Consumed			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
. DEAD STOCK-(S15009COAX)		-	-	3,700	49,99,470	-	-	-	3,700	49,99,470					
micorn Sky (Indo) (S21004COAX)		-	-	5,003	1,45,44,096	89,04,266	-	89,04,266	5,003	56,39,830					
ortaitissa (Aust)S21008COAX		-	-	5,637	3,97,17,255	2,79,04,329	-	2,79,04,329	5,637	1,18,12,926					
reat Persues(Indo) S20073COAX		-	-	4,163	44,23,855	44,23,855	-	44,23,855	-	-					
eu Dian 103(Aust)S21012COAX		5,287	1,60,04,510	5,287	4,62,63,550	4,62,63,550	1,60,04,510	6,22,68,060	-	-	4,308	4,868	5,278	4,440	
ilipp oldendroff (Aust) S21016 COAX		-	-	5,492	1,02,68,124	1,02,68,124	-	1,02,68,124	-	-					
om Gaia(Indo)S210017COAX		4,039	7,57,49,500	-	-	-	5,70,83,716	5,70,83,716	4,039	1,86,65,784					
ster Oldendroff (SA)(S21020COAX)		5,092	2,26,98,950	-	-	-	34,93,590	34,93,590	5,092	1,92,05,360					
ervia (Indo) (S21022COAX)		4,095	6,16,15,850	-	-	-	71,39,870	71,39,870	4,095	5,41,12,750					3,63,230
Total			17,60,68,810		12,02,16,350			18,14,85,810		11,44,36,120					3,63,230

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Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass			
						From Opening Stock	From New Receipt	Total Consumed			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass Closing Stock
i Enterprise und Natural Products io Industries al ikh Enterprise ; International Industries nterprises i Bio Fuel		3,733	7,80,370	3,633	2,35,843	2,35,843	7,80,370	10,16,213						
		3,451	1,57,420	3,313	90,200	90,200	1,57,420	2,47,620	-	-				
		3,426	51,000	3,700	27,120	27,120	51,000	78,120	-	-				
		3,241	70,930	-	-	-	70,930	70,930	-	-				
		3,895	3,24,065	4,264	68,610	68,610	3,14,742	3,83,352	3,895	9,323				
		3,766	4,56,500	3,785	74,290	74,290	3,60,850	4,35,140	3,766	95,650	3,703	3,728	3,839	3,928
		4,292	4,01,760	4,514	85,650	85,650	3,58,380	4,44,030	4,292	43,380				
		3,691	1,31,595	4,077	1,16,320	1,16,320	1,31,595	2,47,915	-	-				
		3,200	5,21,015	3,510	86,220	86,220	5,21,015	6,07,235	-	-				
Total			28,94,655		9,20,898			36,67,200		1,48,353				


 [C. Arun Kumar]

August - 2021

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL			BIOMASS
		Data		Data	
Opening Balance	Kg	12,02,16,350	Total Heat Generated by	9,20,898	
Weighted Avg GCV of Opening Balance	Kcal/kg	5,278	Coal ($Q_c \times G_c$)	3,839	Total Heat Generated by Biomass ($Q_b \times G_b$)
Quantity Received during month	Kg	17,60,68,810	(kcal)	28,94,655	(kcal)
Weighted Avg GCV of Quantity Received	Kcal/kg	4,308		3,703	
Closing Stock	Kg	11,44,36,120		1,48,353	
Weighted Avg GCV of Closing Balance	Kcal/kg	4,440	8,84,93,94,93,454	3,928	13,67,15,04,303
			Ratio of Power Generated through Biomass [$Q_b \times G_b / ((Q_c \times G_c) + (Q_b \times G_b))]$		0.0152

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	3098647	kWH	25,33,429	25,43,394	1,000	99,65,000
CPP : STG-II	40 MW	8001941	kWH	21,65,640	21,85,296	1,000	1,96,56,000
CCPP : STG-I	90 MW	XB569261	kWH	25,55,596	26,08,805	1,000	5,32,09,000
CCPP : STG-II	90 MW	XB569259	kWH	23,33,581	23,87,435	1,000	5,38,54,000
CCPP : STG-III	90 MW	XB569255	kWH	23,86,478	24,39,126	1,000	5,26,48,000
CCPP : STG-IV	90 MW	XB569264	kWH	24,84,214	25,37,402	1,000	5,31,88,000
Total Electricity Generated - E(GT)						kWH	24,25,20,000

C. AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I Aux Meter	7002662	kWH	3,213.09	3,243.22	1.000	30,130
CPP : STG-II Aux Meter						
Meter1	7002663	kWH	8,131.06	8,183.95	1.000	52,890
Meter2	7002665	kWH	7,028.04	7,069.15	1.000	41,110
Meter3	7002655	kWH	10,915.79	10,985.00	1.000	69,210
Meter4	7002651	kWH	10,333.45	10,391.57	1.000	58,120
Meter5	7023020	kWH	46,004.03	46,403.18	1.000	3,99,150
Meter6	7023021	kWH	43,686.38	43,686.38	1.000	-
Meter7	7023019	kWH	39,506.57	39,930.49	1.000	4,23,920
CCPP : SST-I Aux Meter	XC598792	kWH	7,65,317	7,79,825	1.000	1,45,08,000
CCPP : SST-II Aux Meter	XC598788	kWH	7,04,274	7,18,788	1.000	1,45,14,000
Total Auxiliary Power					kwh	3,00,96,530

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(IGT)$	36,89,709 kWh
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
ESO = Total Electricity Generated - Aux Consumption	21,24,23,470 kWh
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - \{(E(IGT) - ESO) / E(IGT)\}]$	32,31,819 kWh

Gay
[K. Arun Kumar]



CIN # L17110MH1973PLC019786

RIL-Hz/CAD/2021-22/191

January 19, 2022

Dy. Director - Gujarat Energy Development Agency,
 4th Floor, Block No. 11/12,
 Udyog Bhavan, Sector-11,
GANDHINAGAR - 382 017

Sub : Submission of monthly electricity generated data for Sep'21, Oct'21, Nov'21 & Dec'21 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref : 1. RIL Letter to GEDA dt. 02.02.2021
 2. CERC Order dt. 18.02.2020 & MNRE Notification dt.26.09.2019
 3. GERC Order No. 1 of 2018 dt. 15.03.2018
 4. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/120 dt. 01.10.2021
 5. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/159 dt. 02.12.2021

Dear Sir,

Reliance Industries Limited (RIL) - Hazira Manufacturing Division operates a world class fully integrated Petrochemical Complex at Vill. Mora, Post: Bhatha, Surat-Hazira Road, Surat and it caters its power requirement through its Captive Power Plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in our Captive thermal power plants at Hazira since April - 2021. We have already requested GEDA (ref#4) and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC) to approve and adopt methodology notified by CERC for calculating quantum of energy generated through biomass cofiring.

According to GERC Order on Biomass based power projects dtd. 15.03.2018, para 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit statement of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Accordingly, we have submitted CA Certificate for Q1 & Q2 of FY:2021-2022 vide our letter dt. 02.12.2021 (ref#5) and monthly fuel GCV working data and power generation through biomass data for the period of Apr'21 to Aug'21 as submitted (ref#4). Furthermore, we herewith submit monthly data for Sep'21, Oct'21, Nov'21 & Dec'21 for your kind consideration please.

Accordingly, following units generated through biomass cofiring may please be



Sr No.	Month	Units Generation through Biomass (KWH)	Non-Solar RPO met (KWH)
1	Sep'21	7,88,612	7,88,612
2	Oct'21	7,41,181	7,41,181
3	Nov'21	20,62,007	20,62,007
4	Dec'21	79,84,924	79,84,924

Submitted for your information and records please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited

(Rashesh Desai)
Sr. General Manager (Corporate Affairs)

Encl: As Above

Copy Fwcs: Hon. Chairman, Gujarat Electricity Regulatory Commission

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - September-2021

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Consignee	Purchase Bill Date	Discharge	Coal Received	Opening	Opening	Coal Consumed			Closing	Closing	Weighted Average GCV of Coal				Coal sent to barabanki
		Port GCV	in month	Stock GCV	Stock	From Opening	From New	Total	Stock GCV	Stock	Coal	Coal	Coal -	Coal -	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
. DEAD STOCK-(S15009COAX)		3,700	-	3,700	49,99,470	-	-	-	3,700	49,99,470	-	-	-	-	-
micorn Sky (Indo) (S21004COAX)		5,003	-	5,003	56,39,830	-	-	-	5,003	56,39,830	-	-	-	-	-
praltissa (Aust)(S21008COAX)		5,637	-	5,637	1,18,12,926	5,48,586	-	5,48,586	5,637	1,12,64,340	-	-	-	-	-
rient Centaur(Indo)S21023COAX		4,051	5,21,82,840	4,051	-	-	3,21,73,908	3,21,73,908	4,051	2,00,08,932	4,612	4,436	4,440	4,804	-
om Gala(Indo)S210017COAX		4,039	-	4,039	1,86,65,784	1,86,65,784	-	1,86,65,784	4,039	-	-	-	-	-	-
ster Oldendorff (SA)(S21020COAX)		5,092	8,35,84,990	5,092	1,92,05,360	1,92,05,360	4,86,28,644	6,78,34,004	5,092	3,49,56,346	-	-	-	-	-
ervia (Indo) (S21022COAX)		4,095	2,08,82,710	4,095	5,41,12,750	5,41,12,750	2,01,83,550	7,42,96,300	4,095	-	-	-	-	-	6,99,160
Total			15,66,50,540		11,44,36,120			19,35,18,582		7,68,68,918					6,99,160

Working

Agent/ Supplier	Purchase Bill Date	Discharge	Biomass	Opening	Opening	Biomass Consumed			Closing	Closing	Weighted Average GCV of Biomass			
		Port GCV	Received in month	Stock GCV	Stock	From Opening	From New	Total	Stock GCV	Stock	Biomass	Biomass	Biomass -	Biomass -
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
il Enterprise		3,746	4,21,170	-	-	-	2,72,460	2,72,460	3,746	1,48,710	-	-	-	-
and Natural Products		2,700	27,250	-	-	-	27,250	27,250	-	-	-	-	-	-
Bio		-	-	-	-	-	-	-	-	-	-	-	-	-
Industries		-	-	-	-	-	-	-	-	-	-	-	-	-
yva Energy & Agro Process		-	-	-	-	-	-	-	-	-	-	-	-	-
sal		3,797	40,550	3,895	9,323	9,323	40,550	49,873	-	-	-	-	-	-
akh Enterprise		3,848	2,49,230	3,766	95,650	95,650	1,43,190	2,38,840	3,848	1,06,040	3,663	3,662	3,928	3,764
g International		3,050	35,980	4,292	43,380	43,380	35,980	79,360	-	-	-	-	-	-
r Industries		3,791	70,355	-	-	-	42,155	42,155	3,791	28,200	-	-	-	-
enterprises		3,270	1,85,080	-	-	-	1,85,080	1,85,080	-	-	-	-	-	-
il Bio Fuel		-	-	-	-	-	-	-	-	-	-	-	-	-
Coal		3,062	59,100	-	-	-	-	-	3,062	59,100	-	-	-	-
vayur infratech		4,355	88,370	-	-	-	30,030	30,030	4,355	58,340	-	-	-	-
Total			11,77,085		1,48,353			9,25,048		4,00,390				


[K. Arun Kumar]

September - 2021

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)						
Particulars	Unit	COAL	BIOMASS			
Opening Balance	Kg	11,44,36,120	Total Heat Generated by Coal (Qc x Gc) (kcal)	Data	1,48,353	Total Heat Generated by Biomass (Qb x Gb) (kcal)
Weighted Avg GCV of Opening Balance	Kcal/kg	4,440			3,928	
Quantity Received during month	Kg	15,09,50,540			11,77,085	
Weighted Avg GCV of Quantity Received	Kcal/kg	4,612			3,663	
Closing Stock	Kg	7,68,68,918	8,61,29,03,81,208		4,00,390	3,38,73,24,979
Weighted Avg GCV of Closing Balance	Kcal/kg	4,804			3,764	
Ratio of Power Generated through Biomass [Qb x Gb]/[(Qc x Gc) + (Qb x Gb)]						0.0039

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)							
Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	3098647	kWH	25,43,394	25,53,769	1,000	1,03,75,000
CPP : STG-II	40 MW	8001941	kWH	21,85,296	22,04,443	1,000	1,91,47,000
CCPP : STG-I	90 MW	XB569261	kWH	26,08,805	26,58,820	1,000	5,00,15,000
CCPP : STG-II	90 MW	XB569259	kWH	23,87,435	24,38,122	1,000	5,06,87,000
CCPP : STG-III	90 MW	XB569255	kWH	24,39,126	24,89,282	1,000	5,01,56,000
CCPP : STG-IV	90 MW	XB569264	kWH	25,37,402	25,87,575	1,000	5,01,73,000
Total Electricity Generated - E(GT)						kWH	23,05,53,000

C. AUXILIARY POWER USED FOR GENERATING POWER							
Power Plant		Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I Aux Meter		7002662	kWH	3,243.22	3,270.45	1,000	27,230
CPP : STG-II Aux Meter							
Meter1		7002663	kWH	8,183.95	8,186.37	1,000	2,420
Meter2		7002665	kWH	7,069.15	7,154.63	1,000	85,480
Meter3		7002655	kWH	10,985.00	11,050.64	1,000	65,640
Meter4		7002651	kWH	10,391.57	10,447.13	1,000	55,560
Meter5		7023020	kWH	46,403.18	46,786.12	1,000	3,82,940
Meter6		7023021	kWH	43,686.38	43,686.38	1,000	
Meter7		7023019	kWH	39,930.49	40,336.09	1,000	4,05,600
CCPP : SST-I Aux Meter		XC598792	kWH	7,79,825	7,95,018	1,000	1,51,92,880
CCPP : SST-II Aux Meter		XC598788	kWH	7,18,788	7,31,815	1,000	1,30,27,354
Total Auxiliary Power						kwh	2,92,45,103

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY	
1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$	9,03,178 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	20,13,07,897 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)]$	7,88,612 kWH

[Signature]
[K. Arun Kumar]

Monthly Details of Inputs (Coal & Biomass) & Its GCV Working - (October-2021)

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed		Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to barebarki
						From Opening Stock	From New Receipt			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
COAL DEAD STOCK-(S1500XCOAX)		3,700		3,700	49,99,470			3,700	49,99,470					
MV Omikorn Sky (Indo) (S2100XCOAX)		5,003		5,003	56,39,830			5,003	56,39,830					
MV Portallissa (Aus)(S2100XCOAX)		5,637		5,637	1,12,64,340			5,637	1,12,64,340					
MV Orient Centaur(Indo)(S2102XCOAX)		4,051	5,29,67,160	4,051	2,00,08,932	2,00,08,932	5,29,67,160	4,051	7,29,76,092	4,463	4,653	4,804	4,393	
MV Sikkha Wave(AUS) (S2102XCOAX)		5,217	8,20,97,730				6,76,88,103	5,217	1,44,09,627					
MV Peter Oldendroff (GA)(S2102XCOAX)		5,092		5,092	3,49,56,346	2,96,02,395		5,092	53,53,951					
MV Pta Oldendroff (Indo) (S2102XCOAX)		4,004	8,73,79,870			1,10,71,670		4,004	7,62,12,880					95,320
Total			22,24,44,760		7,68,68,918				18,13,38,260					95,320

is GCV Working

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed		Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass			
						From Opening Stock	From New Receipt			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
		kCal/kg	kg	kCal/kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Varahi Enterprise		3,275	3,92,125	3,746	1,48,710		1,80,680	3,275	2,11,445				
Gajanan Natural Products													
Agni Bio													
Black Industries													
Sumanya Energy & Agro Process													
B B Coal													
Pramukh Enterprise		3,887	2,07,490	3,848	1,06,040	1,06,040	1,19,780	3,887	87,710				
Chirag International													
Gimar Industries		3,791		3,791	28,200	28,200				3,072	3,450.61	3,764	2,997
L&T Enterprises													
Global Bio Fuel													
E Bio Coal		3,639	1,37,345	3,062	59,100	59,100	73,395	3,639	63,950				
Gimayour InfraTech		4,355		4,355	58,340	58,340							
Gimar Industries		3,169	29,120										
Varabhai G Makwana		2,899	11,950										
Gramin Energy		2,858	1,47,880										
Ready Fuel (Ex work)		2,503	29,740										
Ready Fuel		2,503	5,60,390				1,48,555	2,503	4,00,835				
Royal Traders		3,619	87,450					3,619	82,450				
Total			16,07,490		4,00,390				10,65,080				



 [K. Arun Kumar]

Oct-21

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION

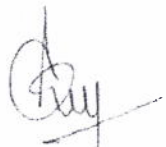
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)						
Particulars	Unit	COAL		BIOMASS		
		Data		Data		
Opening Balance	Kg	7,68,68,918	Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)	4,00,390	Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)	
Weighted Avg GCV of Opening Balance	Kcal/kg	4,804		3,761		
Quantity Received during month	Kg	22,24,44,760		16,07,490		
Weighted Avg GCV of Quantity Received	Kcal/kg	4,463		3,072		
Closing Stock	Kg	11,78,80,098	8,44,20,19,75,438	10,65,080		3,25,32,32,480
Weighted Avg GCV of Closing Balance	Kcal/kg	4,393		2,997		
Ratio of Power Generated through Biomass $[Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)]$						0.0038

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)							
Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	3098647	kWH	25,53,769	25,64,440	1,000	1,06,71,000
CPP : STG-II	40 MW	8001941	kWH	22,04,443	22,24,223	1,000	1,97,80,000
CCPP : STG-I	90 MW	XB569261	kWH	26,58,820	27,06,747	1,000	4,79,27,000
CCPP : STG-II	90 MW	XB569259	kWH	24,38,122	24,85,964	1,000	4,78,42,000
CCPP : STG-III	90 MW	XB569255	kWH	24,89,282	25,37,403	1,000	4,81,21,000
CCPP : STG-IV	90 MW	XB569264	kWH	25,87,575	26,35,616	1,000	4,80,71,000
Total Electricity Generated - E(GT)						kWH	22,24,12,000

C. AUXILIARY POWER USED FOR GENERATING POWER							
Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)	
CPP : STG-I Aux Meter	7002662	kWH	3,270.45	3,297.75	1,000	27,300	
CPP : STG-II Aux Meter							
Meter1	7002663	kWH	8,186.37	8,188.89	1,000	2,520	
Meter2	7002665	kWH	7,154.63	7,242.53	1,000	87,900	
Meter3	7002655	kWH	11,050.64	11,118.10	1,000	67,460	
Meter4	7002651	kWH	10,447.13	10,503.75	1,000	56,620	
Meter5	7023020	kWH	46,786.12	47,170.71	1,000	3,84,590	
Meter6	7023021	kWH	43,686.38	43,686.38	1,000		
Meter7	7023019	kWH	40,336.09	40,746.03	1,000	4,09,940	
CCPP : SST-I Aux Meter	XC598792	kWH	7,95,018	8,09,225	1,000	1,42,07,468	
CCPP : SST-II Aux Meter	XC598788	kWH	7,31,815	7,45,909	1,000	1,40,93,272	
Total Auxiliary Power						kwh	2,93,37,071

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY	
1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	8,53,801 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	19,30,74,929 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)]$	7,41,181 kWH


[K. Arun Kumar]

Monthly Details of Fuel (Coal & Biomass) & its GCV Working - November 2021

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed		Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to barabanki
						From Opening Stock	From New Receipt			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
COAL DEAD STOCK K-151000A (VAX)		3,700		49,99,470				3,700	49,99,470					
MV Omicron Sky (Indo) (S21004C (VAX)		5,003		56,39,830		56,39,830		5,003						
MV Portatissa (Aus) (S21008COAX)		5,637		1,12,64,340				5,637	1,12,64,340					
MV Sika Wave (AUS) (S21025COAX)		5,217	2,85,270	1,44,09,627			2,85,270	5,217						
MV Peter Oldendroff (SA) (S21026COAX)		5,092		53,53,951		53,53,951		5,092						
MV Pa Oldendroff (Indo) (S21026COAX)		4,004		7,63,12,880		7,63,12,880		4,004						
MV Yue Dian 103 (Aus) (S21029COAX)		5,165	1,76,68,140				1,69,56,620	5,165	4,01,48,752	5,170	4,589,90	4,393	5,353	7,11,520
MV Goya (INDO) (S21031COAX)		5,722	3,00,24,290				6,59,35,248	5,722	2,78,73,466					
MV Richard Oldendroff MY (S21032COAX)		5,545	1,22,97,230				21,50,824	5,545	1,22,97,230					
Total			16,63,58,930	11,78,80,098	10,16,16,288	8,53,27,962	18,69,44,250	-	9,65,83,258					7,11,520

GCV Working

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed		Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass			
						From Opening Stock	From New Receipt			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
		kCal/kg	kg	kCal/kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
Varahi Enterprises (240372249)	S21BML0001	3,598	57,660	3,275	2,11,445	2,11,445	57,660	3,275					
Pranukh Enterprises (240374490)	S21BML0007	3,887		87,710		82,000		3,887	5,710				
E Bio Coal (240388071)	S21BML0013	3,721	1,83,955	3,639	63,950	63,950	75,155	3,721	1,08,800				
Gumar Industries (240988332)	S21BML0014				29,120	29,120							
Mayabhai C Mahawana (240396629)	HMDDBM0001	2,941	60,940	2,899	11,950	11,950	57,380	2,941	3,560				
Gramini Energy (240396651)	HMDDBS10001	3,412	2,35,270	2,858	1,47,880	1,47,880	1,42,880	3,412	92,590				
Ready Fuel (Ex work) (24098705)	HMDDBS10002				29,740	29,740							
Ready Fuel (240398245)	HMDDBS10003	3,734	5,52,746	2,503	4,00,835	4,00,835							
Royal Traders (240401868)	HMDDBS10004	3,042	3,26,300	3,619	82,450	82,450							
KAJPS Agrotech (240403755)	HMDDBS10005	3,732	4,15,135				3,26,300						
Virtual white flame (240403399)	HMDDBS10006	3,393	3,64,080				2,73,625						
Virtual white flame (240403403)	HMDDBS10007	2,766	59,360				2,36,760						
Biofuels junctions (240404203)	HMDDBS10009	3,568	4,82,145				59,360						
Pranukh Enterprise (240404227)	HMDDBS10010	3,638	1,76,350				4,82,145						
Venkaateswara Agro Fuel (240406403)	HMDDBS10011	3,802	1,58,455				54,185						
Raghav Agro industries (240406485)	HMDDBS10012	4,337	58,960										
NJ Renewable energy Private Ltd (240406871)	HMDDBS10014	2,902	89,625				89,625						
Shri Krishna Industries (240407262)	HMDDBS10015	3,047	24,640				24,640						
Biofuels junctions Private Ltd (240409005)	HMDDBS10017	3,851	25,260										
Total			32,70,881		10,65,080		27,04,000		16,31,961				



 [K. Anur Kumar]

Nov-21

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION
12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)						
Particulars	Unit	Data	COAL	Data	BIOMASS	
Opening Balance	Kg	11,78,80,098	Total Heat Generated by	10,65,080	Total Heat Generated by	
Weighted Avg GCV of Opening Balance	Kcal/kg	4,393	Coal (Qc x Gc)	2,997	Biomass (Qb x Gb)	
Quantity Received during month	Kg	16,63,58,930	(kcal)	32,70,881	(kcal)	
Weighted Avg GCV of Quantity Received	Kcal/kg	5,170		3,524		
Closing Stock	Kg	9,65,83,258	8,60,91,27,58,540	16,31,961	8,95,29,11,191	
Weighted Avg GCV of Closing Balance	Kcal/kg	5,353		3,533		
Ratio of Power Generated through Biomass $[Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)]$						0.0103

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)						
Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF
CCPP : STG-I	40 MW	3098647	kWH	25,64,440	25,74,385	1,000
CCPP : STG-II	40 MW	8001941	kWH	22,24,223	22,40,597	1,000
CCPP : STG-I	90 MW	XB569261	kWH	27,06,747	27,57,187	1,000
CCPP : STG-II	90 MW	XB569259	kWH	24,85,964	25,37,253	1,000
CCPP : STG-III	90 MW	XB569255	kWH	25,37,403	25,87,989	1,000
CCPP : STG-IV	90 MW	XB569264	kWH	26,35,646	26,86,267	1,000
Total Electricity Generated - E(GT)						kWH
						22,92,55,000

C. AUXILIARY POWER USED FOR GENERATING POWER						
Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CCPP : STG-I Aux Meter	7002662	kWH	3,297.75	3,326.78	1,000	29,030
CCPP : STG-II Aux Meter						
Meter1	7002663	kWH	8,188.89	8,237.79	1,000	48,900
Meter2	7002665	kWH	7,242.53	7,285.81	1,000	43,280
Meter3	7002655	kWH	11,118.10	11,188.02	1,000	69,920
Meter4	7002651	kWH	10,503.75	10,562.63	1,000	58,880
Meter5	7023020	kWH	47,170.71	47,555.09	1,000	3,84,380
Meter6	7023021	kWH	43,686.38	43,686.38	1,000	-
Meter7	7023019	kWH	40,746.03	41,165.89	1,000	4,19,860
CCPP : SST-I Aux Meter	XC598792	kWH	8,09,225	8,23,277	1,000	1,40,51,671
CCPP : SST-II Aux Meter	XC598788	kWH	7,45,909	7,59,713	1,000	1,38,04,338
Total Auxiliary Power						kwh
						2,89,10,259

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - E_h(G)	
$E_b(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$	23,59,559 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	20,03,44,741 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - E_b(ex-bus)	
$E_{b(ex-bus)} = E_b(G) \times [1 - (ESO/E(GT))]$	20,62,007 kWH

[Signature]
[Name]

V Working

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Coal Consumed			Closing Stock GCV	Weighted Average GCV of Coal			Coal sent to barabanki
					From Opening Stock	From New Receipt	Total Consumed		Coal Received	Coal consumed	Coal - Closing Stock	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
COAL DEAD STOCK (S1509COAX)		3700		3700	49,99,470			3700				
MV Penatitica (Aus)(S2108COAX)		5637		5637	1,12,64,940							
MV Aquababa (Adani coal) (Indo) (S2104KCOAX)		4172	1,35,31,560		11,95,110		11,95,110					
MV Yasa diamond (Aus)(S2103COAX)		5926	1,33,600			69,61,076	69,61,076					
MV Yue Dian 100(Aus)(S2102COAX)		5165		5165	4,01,48,752		4,01,48,752					
MV Goya (INDO) (S2101COAX)		5722	4,21,71,460	5722	2,78,73,466	3,95,22,188	6,73,95,654	5722	5,441	5,454	5,353	5,273
MV Richard Oldmudroff MV (S2102COAX)		5545	5,09,50,030	5545	1,22,97,230	1,28,10,038	2,51,07,268	5545				5,53,270
Total			10,67,86,650		9,65,83,258	8,15,14,558	14,08,07,850					5,53,270

GCV Working

Agent/ Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Biomass Consumed			Closing Stock GCV	Weighted Average GCV of Biomass		
					From Opening Stock	From New Receipt	Total Consumed		Biomass Received	Biomass consumed	Biomass - Opening Stock
		kCal/kg	kg	kCal/kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg
Pramukh Enterprises (240274490)	S21BML0007			5,710	5,710		5,710				
E Bio Coal (240380071)	S21BML0013	3,235	67,030	3,721	1,08,800	67,030	1,75,830				
Mayabhai G Makwana (240396629)	HMDBST0001	3,012	12,010	2,941	3,560	12,010	15,570				
Gramin Energy (240798651)	HMDBST0001			92,590	3,412		3,412		92,590		
Ready Fuel (240398745)	HMDBST0001	3,460	38,33,431	3,367	7,87,831	38,33,431	46,21,262				
Royal Tradex (240101866)	HMDBST0004	3,723	1,74,400			1,74,400	1,74,400				
ITPS Aemtech (240403275)	HMDBST0005	3,700	6,54,295	3,712	1,41,510	5,64,130	7,05,640	3,700	90,165		
Virtual white flame (240403399)	HMDBST0004	3,079	8,36,615	3,193	1,27,320	7,64,285	8,91,605	3,079	72,330		
Biotech Junctions (240404203)	HMDBST0004	2,817	22,020			22,020	22,020				
Pramukh Entc (240404227)	HMDBST0010	4,000	18,520	3,638	1,22,165	18,520	1,40,685				
Venkateshware Agro Fuel (240406403)	HMDBST0011	3,764	2,05,300	3,802	1,58,455	1,20,245	3,28,700				
Rajbhav Agro Industries (240406485)	HMDBST0012	4,337	26,160	4,337	58,960	58,960	87,140				
Ready Fuel(240406443)	HMDBST0013	3,495	8,54,740			28,180	28,180	3,495	7,36,740		
NI Renewable energy Private Ltd (240406471)	HMDBST0014	2,614	1,15,420			1,18,000	1,18,000	2,614	9,980		
Shri Krishna Industries (240407262)	HMDBST0015	3,047	24,510			1,05,440	1,05,440	3,047	17,377		
Biodia Energy Private Ltd (240408453)	HMDBST0017	4,011	12,04,365			7,133	7,133	4,011	1,09,150		
Venture Energy Private Ltd (240410757)	HMDBST0019	2,767	7,630	25,260	10,05,215	11,20,475	11,20,475	2,767	3,857		
Rajbhav Agro Industries (240412017)	HMDBST0021	3,967	5,18,915			7,630	7,630	3,967	5,18,915		
Shri Krishna Industries (240412033)	HMDBST0022	2,951	57,470			2,951	2,951	2,951	57,470		
Renhar Energy Pvt Ltd(240415841)	HMDBST0023	2,025	4,95,080			2,51,000	2,51,000	2,025	2,42,080		
Venkateshware Agro Fuel (240415910)	HMDBST0024	3,554	51,810				3,554	3,554	51,810		
Ready Fuel(Rajasthan)(240406443)	HMDBST0024	3,580	14,82,805			11,68,160	3,580	3,580	3,14,645		
Mayabhai G Makwana (Bajpase)(240410965)	HMDBST0020	3,857	2,77,290				3,857	3,857	2,77,290		
Total			1,09,41,836		16,31,961		99,48,400		26,25,397		
								3,496	3,533	3,502	

[Signature]
[Rajesh Kumar]

Dec-21

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL ($Q_c \times G_c$) & BIOMASS ($Q_b \times G_b$)

Particulars	Unit	COAL	BIOMASS
Opening Balance	Kg	9,65,83,258	16,31,961
Weighted Avg GCV of Opening Balance	Kcal/kg	5,353	3,533
Quantity Received during month	Kg	10,67,86,650	1,09,41,836
Weighted Avg GCV of Quantity Received	Kcal/kg	5,441	3,491
Closing Stock	Kg	6,20,08,788	26,25,397
Weighted Avg GCV of Closing Balance	Kcal/kg	5,273	3,502
Total Heat Generated by Coal ($Q_c \times G_c$) (kcal)			7,71,06,40,03,600
Total Heat Generated by Biomass ($Q_b \times G_b$) (kcal)			34,76,95,27,395
Ratio of Power Generated through Biomass [$Q_b \times G_b$] / [$(Q_c \times G_c) + (Q_b \times G_b)$]			0.0431

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	3098647	kWH	25,74,385	25,86,037	1,000	1,16,52,000
CPP : STG-II	40 MW	8001941	kWH	22,40,597	22,48,358	1,000	77,61,000
CCPP : STG-I	90 MW	XB569261	kWH	27,57,187	28,04,666	1,000	4,74,79,000
CCPP : STG-II	90 MW	XB569259	kWH	25,37,253	25,86,462	1,000	4,92,09,000
CCPP : STG-III	90 MW	XB569255	kWH	25,87,989	26,36,385	1,000	4,83,96,000
CCPP : STG-IV	90 MW	XB569264	kWH	26,86,267	27,34,739	1,000	4,84,72,000
Total Electricity Generated - E(GT)						kWH	21,29,69,000

C.

AUXILIARY POWER USED FOR GENERATING POWER						
Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I Aux Meter	7002662	kWH	3,326.78	3,354.96	1,000	28,180
CPP : STG-II Aux Meter						
Meter1	7002663	kWH	8,237.79	8,262.07	1,000	24,280
Meter2	7002665	kWH	7,285.81	7,318.27	1,000	32,460
Meter3	7002655	kWH	11,188.02	11,228.58	1,000	40,560
Meter4	7002651	kWH	10,562.63	10,604.42	1,000	41,790
Meter5	7023020	kWH	47,555.09	47,744.76	1,000	1,89,670
Meter6	7023021	kWH	43,686.38	43,714.90	1,000	28,520
Meter7	7023019	kWH	41,165.89	41,374.87	1,000	2,08,980
CCPP : SST-I Aux Meter	XC598792	kWH	8,23,277	8,37,469	1,000	1,41,92,109
CCPP : SST-II Aux Meter	XC598788	kWH	7,59,713	7,72,833	1,000	1,31,20,424
Total Auxiliary Power					kwh	2,79,06,973

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - $E_b(G)$	
$E_b(G) = [Q_b \times G_b] / [(Q_c \times G_c) + (Q_b \times G_b)] \times E(GT)$	91,89,034 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	18,50,62,028 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - $E_b(\text{ex-bus})$	
$E_b(\text{ex-bus}) = E_b(G) \times [1 - \{(E(GT) - ESO) / E(GT)\}]$	79,84,924 kWH

19/01/22
[K. Arun Kumar]

Reliance

Industries Limited
CIN # L17110MH1973PLC019786

RIL-Hz/CAD/2021-22/213

February 22, 2022

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR - 382 017

Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

24/2/22

Sub : Submission of monthly electricity generated data for Jan'2022 in Biomass Co-fired thermal power plant for consideration towards RPO

Ref : 1. RIL Letter to GEDA dt. 02.02.2021
2. CERC Order dt. 18.02.2020 & MNRE Notification dt.26.09.2019
3. GERC Order No. 1 of 2018 dt. 15.03.2018
4. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/120 dt. 01.10.2021
5. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/159 dt. 02.12.2021
6. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/191 dt. 19.01.2022
7. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/212 dt. 22.02.2022

Dear Sir,

Reliance Industries Limited (RIL) - Hazira Manufacturing Division have started co-firing of biomass in our Captive thermal power plants at Hazira since April - 2021 (ref#1).

We have already requested GEDA (ref#4) and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC) to approve and adopt methodology notified by CERC for calculating quantum of energy generated through biomass cofiring.

According to GERC Order on Biomass based power projects dtd. 15.03.2018, para 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit statement of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Accordingly, we have submitted CA Certificate for Q1 & Q2 (ref#5) & Q3 (ref#7) of FY:21-22 and monthly fuel GCV working data & power generation through biomass data for the period Apr'21 to Aug'21 (ref#4) & Sep'21 to Dec'21 (ref#6). Furthermore, we herewith submit monthly data for Jan'2022 for your kind consideration please.

Accordingly, following units generated through biomass cofiring may please be considered towards our non-solar RPO and oblige:

Sr No.	Month	Units Generation through Biomass (KWH)	Non-Solar RPO met (KWH)	RECEIVED
1	Jan'22	1,06,63,553	1,06,63,553	

Reliance

CIN # L17110MH1273PLC019786

Submitted for your information and records please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Rashesh Desai)
Sr. General Manager (Corporate Affairs)

Encl: As above

Copy Fwcs: Hon. Chairman, Gujarat Electricity Regulatory Commission

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - January -2022

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to barabanki
						From Opening Stock	From New Receipt	Total Consumed			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kg	
AD STOCK (S15009COAX)		3,700	-	3,700	49,99,470	-	-	-	3,700	49,99,470					
issa (Aust)(S21008COAX)		5,637	-	5,637	1,00,69,230	47,14,375	-	47,14,375	5,637	53,54,855					
aha (Adani coal) (Indo) (S21016COAX)		4,172	64,68,440	4,172	65,70,484	65,70,484	64,68,440	1,30,38,924	4,172	-					
iamond (Aust)(S21035COAX)		5,926	5,49,30,860	5,926	1,33,690	-	1,39,07,932	1,39,07,932	5,926	4,11,56,528	5,006	4,854	5,273	5,655	
(INDO) (S21031COAX)		5,722	-	5,722	20,96,002	20,96,002	-	20,96,002	5,722	-					
d Oldendroff (Indo) (S21044COAX)		4,024	4,26,94,330	-	-	-	4,26,91,651	4,26,91,651	4,024	2,679					
Lady (Indo)(S21047COAX)		3,810	1,99,99,460	-	-	-	1,99,99,460	1,99,99,460	3,810	-					
d Oldendroff (AUS) (S21092COAX)		5,545	5,85,11,910	5,545	3,81,40,002	3,81,40,002	2,67,82,134	6,49,22,136	5,545	1,17,29,776					
Total			16,26,05,000		6,20,08,788	5,15,20,863	10,98,49,617	16,13,70,480	-	6,32,43,308					

ing

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass			
						From Opening Stock	From New Receipt	Total Consumed			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kCal/kg
terprise (240374490)	S218ML0007				-	-	-	-	-	-	-	-	-	-
40388071)	S218ML0013	3,667	1,21,420		-	-	98,130	98,130	3,667	23,290	-	-	-	-
rgy (240398651)	HMDBST0001		-	3,412	92,390	92,390		92,390		-	-	-	-	-
rs (240401866)	HMDBST0004	3,722	1,19,900		-	-	1,19,900	1,19,900		-	-	-	-	-
ech (240403275)	HMDBST0005	3,451	3,69,985	3,700	90,165	90,165	3,44,415	4,34,580	3,451	25,570	-	-	-	-
e (Name) (240403999)	HMDBST0006	3,079	29,420	3,079	72,330	72,330	29,420	1,01,750		-	-	-	-	-
te (240404127)	HMDBST0010	4,000	1,92,740		-	-	1,92,740	1,92,740		-	-	-	-	-
at Agro Fuel (240406403)	HMDBST0011	3,506	30,160	3,764	35,055	35,055	30,160	65,215		-	-	-	-	-
(240406413)	HMDBST0013	3,495		3,495	7,36,740	4,39,003		4,39,003	3,495	2,97,737	-	-	-	-
le energy Private Ltd (240406871)	HMDBST0014	3,141	29,250	2,614	9,980	9,980	29,250	39,230		-	-	-	-	-
Industries (240407262)	HMDBST0015	3,047		3,047	17,377	17,377		17,377		-	-	-	-	-
uoms Private Ltd (240409005)	HMDBST0017	3,859	2,59,195	4,011	1,09,150	1,09,150	2,59,195	3,68,345		-	-	-	-	-
(240410373)	HMDBST0018	2,624	28,630		-	-	28,630	28,630		-	-	-	-	-
Industries (240412017)	HMDBST0021	3,744	3,79,363	3,967	5,18,915	5,18,915	3,79,363	8,98,278		-	-	-	-	-
Industries (240412053)	HMDBST0022	3,023	1,46,135	2,951	57,470	57,470	1,46,135	2,03,605		-	-	-	-	-
gy Pvt Ltd (240413584)	HMDBST0023	2,025		2,025	2,42,080	2,42,080		2,42,080		-	-	-	-	-
ata Agro Fuel (240413910)	HMDBST0024	3,400	2,17,675	3,554	51,810	51,810	1,92,365	2,44,175	3,400	25,310	-	-	-	-
energy (240417039)	HMDBST0025	3,255	2,18,260		-	-	1,90,900	1,90,900	3,255	27,360	-	-	-	-
Stone Pvt. Ltd (240419077)	HMDBST0026	3,318	6,05,510		-	-	6,05,510	6,05,510		-	-	-	-	-
gy Pvt Ltd (240419110)	HMDBST0027	3,145	1,81,170		-	-	1,56,070	1,56,070	3,145	25,100	-	-	-	-
e flame (240419262)	HMDBST0028	3,075	7,02,050		-	-	7,02,050	7,02,050		-	-	-	-	-
ing companies (240419597)	HMDBST0034	3,528	25,045		-	-			3,528	25,045	-	-	-	-
Baagse (240406643)	HMDBC001	2,750	95,59,695	3,580	3,14,645	3,14,645	88,17,129	91,31,774	2,750	7,42,566	-	-	-	-
(Makwana) (240410965)	HMDBST0033	3,328	7,13,750	3,857	2,77,290	2,77,290	5,01,750	7,79,040	3,328	2,12,000	-	-	-	-
Total			1,39,29,353		26,25,397			1,51,50,772		14,03,978				


 13/2/22
 { Anur Kumar }

Jan-22

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)						
Particulars	Unit	COAL	BIOMASS			
Opening Balance	Kg	6,20,08,788	Total Heat Generated by	26,25,397	Total Heat Generated by	
Weighted Avg GCV of Opening Balance	Kcal/kg	5,273	Coal (Qc x Gc)	3,502	Biomass (Qb x Gb)	
Quantity Received during month	Kg	16,26,05,000	(kcal)	1,39,29,353	(kcal)	
Weighted Avg GCV of Quantity Received	Kcal/kg	5,006		2,951		
Closing Stock	Kg	6,32,43,308	7,83,33,20,62,384	14,03,978	45,99,64,68,427	
Weighted Avg GCV of Closing Balance	Kcal/kg	5,655		3,065		
			Ratio of Power Generated through Biomass [(Qb x Gb)/((Qc x Gc)+(Qb x Gb))]			0.0555

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)							
Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	3098647	kWH	25,86,037	25,98,871	1,000	1,28,34,000
CPP : STG-II	40 MW	8001941	kWH	22,48,358	22,65,263	1,000	1,69,05,000
CCPP : STG-I	90 MW	XB569261	kWH	28,04,666	28,52,229	1,000	4,75,63,000
CCPP : STG-II	90 MW	XB569259	kWH	25,86,462	26,34,813	1,000	4,83,81,000
CCPP : STG-III	90 MW	XB569255	kWH	26,36,385	26,84,195	1,000	4,78,10,000
CCPP : STG-IV	90 MW	XB569264	kWH	27,34,739	27,82,204	1,000	4,74,65,000
				Total Electricity Generated - E(GT)	kWH		22,09,58,000

C. AUXILIARY POWER USED FOR GENERATING POWER							
Power Plant		Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I Aux Meter		7002662	kWH	3,354.96	3,383.45	1,000	28,490
CPP : STG-II Aux Meter							
Meter1		7002663	kWH	8,262.07	8,350.16	1,000	88,090
Meter2		7002665	kWH	7,318.27	7,322.00	1,000	3,730
Meter3		7002655	kWH	11,228.58	11,300.04	1,000	71,460
Meter4		7002651	kWH	10,604.42	10,694.72	1,000	90,300
Meter5		7023020	kWH	47,744.76	48,132.78	1,000	3,88,020
Meter6		7023021	kWH	43,714.90	43,739.82	1,000	24,920
Meter7		7023019	kWH	41,374.87	41,788.49	1,000	4,13,620
CCPP : SST-I Aux Meter		XC598792	kWH	8,37,469	8,50,678	1,000	1,32,09,111
CCPP : SST-II Aux Meter		XC598788	kWH	7,72,833	7,87,207	1,000	1,43,73,560
				Total Auxiliary Power	kwh		2,86,91,301

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY	
1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$	1,22,54,839 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	19,22,66,699 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)]$	1,06,63,553 kWH

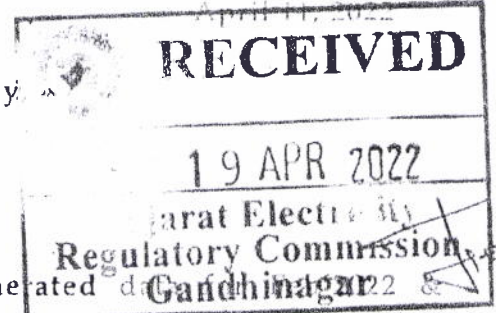

 18/2/22
 [R. Arun Kumar]

Reliance

CIN # L17110MH1973PLC019786

RIL-Hz/CAD/22-23/8

Dy. Director - Gujarat Energy Development Agency
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR - 382 017



Sub : Submission of monthly electricity generated
Mar'2022 in Biomass Co-fired thermal power plant for consideration
towards RPO

- Ref : 1. RIL Letter to GEDA dt. 02.02.2021
2. CERC Order dt. 18.02.2020 & MNRE Notification dt.26.09.2019
3. GERC Order No. 1 of 2018 dt. 15.03.2018
4. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/120 dt. 01.10.2021
5. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/159 dt. 02.12.2021
6. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/191 dt. 19.01.2022
7. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/212 dt. 22.02.2022
8. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/213 dt. 22.02.2022
9. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/226 dt. 16.03.2022

Dear Sir,

Reliance Industries Limited (RIL) - Hazira Manufacturing Division have started co-firing of biomass in our Captive thermal power plants at Hazira since April - 2021 (ref#1).

We have already requested GEDA (ref#4) and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC) to approve and adopt methodology notified by CERC for calculating quantum of energy generated through biomass cofiring.

According to GERC Order on Biomass based power projects dtd. 15.03.2018, para 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit statement of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Accordingly, we have submitted CA Certificate for Q1, Q2 & Q3 (ref#5 & ref#7) of FY:21-22 and monthly fuel GCV working data & power generation through biomass data for the period Apr'21 to Feb'22 (ref#4, ref#6, ref # 8 & ref #9).

We have observed an inadvertent clerical mistake in Feb'22 data submitted by us (ref#9). Therefore, kindly considered our resubmission of monthly data for Feb'22 and we herewith submit monthly data for Mar'22 for your kind consideration please (Conv attached).

Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.
18/4/22

Reliance

Industries Limited

CIN # L17110MH1973PLC019786

Accordingly, following units generated through biomass cofiring may please be considered towards our non-solar RPO and oblige:

Sr No.	Month	Units Generation through Biomass (KWH)	Non-Solar RPO met (KWH)
	Feb'22	72,91,071	72,91,071
2	Mar'22	1,02,11,772	1,02,11,772

Submitted for your information and records please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Rashesh Desai)
Sr. General Manager (Corporate Affairs)

Encl: As above

Copy Fwcs: Hon. Chairman, Gujarat Electricity Regulatory Commission

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - February 2022

A Working

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal			Coal sent to haralanki
						From Opening Stock	From New Receipt	Total Consumed			Coal Received	Coal consumed	Coal - Opening Stock	
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	kg
COAL DEAD STOCK-(S/5009COAX)				3,700	49,99,170				3,700	19,99,170				
MV Portallisa (Aus)(S21008COAX)		4,868	4,16,75,390	5,637	53,54,855				5,637	53,54,855				
MV Al Yasal II (SA)(S21053COAX)		5,926	2,74,35,110											
MV Yasa diamond (Aus)(S21035COAX)		3,763	80,16,390	5,926	4,11,56,528	4,11,56,528	1,68,35,662	80,18,799	4,868	3,66,56,591				
MV Leviathan (Indo)(S21056COAX)		4,024	6,55,04,750	4,024	2,679	2,679	57,19,276	57,19,276	3,763	1,05,99,448	4,664	4,943	5,655	4,984
MV Richard Oldendroff (Indo)(S21044COAX)		3,810	4,31,130							22,97,114				
MV Scardel Lady (Indo)(S21047COAX)		5,545	65,46,830	5,545	1,17,29,776	1,17,29,776	65,46,830	1,82,76,606	3,810	5,99,07,478				
MV Richard Oldendroff (AUS)(S21032COAX)			15,26,09,600		6,32,43,308	5,28,88,983	10,30,56,447	15,59,45,430						
Total														

s GCV Working

Agent/ Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed				Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass		
						From Opening Stock	From New Receipt	Total Consumed	Biomass Received			Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
		kCal/kg	kg	kCal/kg	kg	kg	kg	kg	kCal/kg	kg	kCal/kg	kCal/kg	kCal/kg	
Bio Coal (240388071)		3,893	83,555	3,667	23,290	23,290	83,555	1,06,845						
LAPS Agrotech (240400275)		3,733	1,67,940	3,451	25,570	25,570	1,39,910	1,65,480	3,733	28,030				
ramukh Enre (240404227)		3,253	10,240				10,240	10,240		2,97,737				
Ready Fuel(240406643)				3,495	2,97,737									
A R Energy (240410378)		2,955	1,80,760				1,80,760	1,80,760						
zenkateshwara Agro Fuel (240413910)		3,281	52,730	3,400	25,310	25,310	52,730	78,040						
tarshil bio energy (240417039)		3,244	1,86,950	3,255	27,360	27,360	1,86,950	2,14,310						
biofuels junctions Pvt. Ltd.(240419897)		3,589	1,76,765				1,76,765	1,76,765						
rohbar Energy Pvt.Ltd(240431910)		3,514	3,36,300	3,145	25,100	25,100	3,36,300	3,61,400						
Virtual white flame(240419262)		2,886	12,60,245				12,21,985	12,21,985	2,886	38,260	2,632	2,656	3,065	
shri krishna industries (24042746)		2,497	3,58,805				3,58,805	3,58,805						
US Savers India LLP(240425611)		4,025	1,48,740				1,48,740	1,48,740						
Wamish trading company(240425977)		3,097	45,620	3,528	25,045	25,045	45,620	70,665						
tarshil Bio Energy (240428846)		2,985	3,00,800				2,73,645	2,73,645	2,985	27,155				
shri Citricol Dharan International(240430759)		3,679	1,56,930				1,56,930	1,56,930						
JM Industries (240430476)		3,432	46,170							46,170				
Rohbar Energy Private Limited(240431960)		3,686	1,45,800							1,45,800				
Ready-fuel(240432359)(240406643)	HMD/BC/001	2,329	74,00,675	2,750	7,42,566	7,42,566	68,06,574	75,49,140	2,329	5,94,101				
Marathbai G Makwana (Bigo-2)(240410985)		3,063	7,32,330	3,328	2,12,000	2,12,000	7,32,330	9,44,330						
			1,17,91,355		14,03,978			1,20,18,080		11,77,253				
Total														

D. Ray
[K. Anur Kumar]

Feb-22

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/SM/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)

Particulars	Unit	COAL	BIOMASS
Opening Balance	Kg	6,32,43,308	14,03,978
Weighted Avg GCV of Opening Balance	Kcal/kg	5,655	3,065
Quantity Received during month	Kg	15,26,09,600	1,17,91,355
Weighted Avg GCV of Quantity Received	Kcal/kg	4,664	2,632
Closing Stock	Kg	5,99,02,478	11,77,253
Weighted Avg GCV of Closing Balance	Kcal/kg	4,984	2,902
		7,70,83,32,10,788	31,92,16,50,724
			0.0398

Ratio of Power Generated through Biomass $[Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)]$

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)

Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I	40 MW	808647	kWH	25,98,871	26,09,187	1,000	1,03,16,000
CPP : STG-II	40 MW	8001941	kWH	22,65,263	22,80,108	1,000	1,48,45,000
CCPP : STG-I	90 MW	XB569261	kWH	28,52,229	28,98,172	1,000	4,59,43,000
CCPP : STG-II	90 MW	XB569259	kWH	26,34,843	26,81,379	1,000	4,65,36,000
CCPP : STG-III	90 MW	XB569255	kWH	26,84,195	27,30,375	1,000	4,61,80,000
CCPP : STG-IV	90 MW	XB569264	kWH	27,82,204	28,28,401	1,000	4,61,97,000
				Total Electricity Generated - E(GT)		kWH	21,00,17,000

C. AUXILIARY POWER USED FOR GENERATING POWER

Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CPP : STG-I Aux Meter	7002662	kWH	3,383.45	3,409.48	1,000	26,030
CPP : STG-II Aux Meter						
Meter1	7002663	kWH	8,350.16	8,431.61	1,000	81,450
Meter2	7002665	kWH	7,322.00	7,323.22	1,000	1,220
Meter3	7002655	kWH	11,300.04	11,363.36	1,000	63,320
Meter4	7002651	kWH	10,694.72	10,774.59	1,000	79,870
Meter5	7023020	kWH	48,132.78	48,498.12	1,000	3,65,340
Meter6	7023021	kWH	43,739.82	43,739.82	1,000	
Meter7	7023019	kWH	41,788.49	42,162.12	1,000	3,73,630
CCPP : SST-I Aux Meter	XC598792	kWH	8,50,678	8,63,531	1,000	1,28,52,919
CCPP : SST-II Aux Meter	XC598788	kWH	7,87,207	8,00,027	1,000	1,28,19,835
				Total Auxiliary Power	kwh	2,66,63,614

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY

1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$	83,51,353 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	18,33,53,386 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(ex-bus) = Eb(G) \times [1 - (E(GT) - ESO) / E(GT)]$	72,91,071 kWH

Monthly Details of Fuels (Coal & Biomass) & its GCV Working - Mar-2022

CV Working

Consignee	Purchase Bill Date	Discharge Port GCV	Coal Received in month	Opening Stock GCV	Opening Stock	Coal Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Coal				Coal sent to barabank i
						From Opening Stock	From New Receipt	Total Consumed			Coal Received	Coal consumed	Coal - Opening Stock	Coal - Closing Stock	
						kg	kg	kg			kCal/kg	kCal/kg	kCal/kg	kCal/kg	kg
COAL DEAD STOCK-(S15009COAX)				3,700	49,99,470				3,700	49,99,470					
MV Portailissa (Aust)(S21008COAX)				5,637	53,54,855				5,637	53,54,855					
MV Al Yasat II (SA) (S21053COAX)		4,868	1,06,46,610	4,868	3,66,56,591	3,66,56,591	1,06,46,610	4,73,03,201							
MV Yasa diamond (Aust)(S21035COAX)				5,926	1,05,99,448	1,05,99,448		1,05,99,448							
MV Levathan (Indo)(S21056COAX)		3,763	10,53,070	3,763	22,97,114	22,97,114	10,53,070	13,50,184							
MV Navios Hyperion(Indo)(S21055COAX)		4,972	7,29,00,000					7,29,00,000							
MV Samoa (Indo) (S21058COAX)		4,859	7,14,00,710				3,61,89,522	3,61,89,522	4,859	3,52,11,188					
MV Peter Oldendroff (RUS) (S21057COAX)		5,591	1,23,05,420						5,591	1,23,05,420					
Total			16,83,05,810		5,99,07,478	4,95,53,153	12,07,89,202	17,03,42,355		5,78,70,933					

B GCV Working

Agent / Supplier	Purchase Bill Date	Discharge Port GCV	Biomass Received in month	Opening Stock GCV	Opening Stock	Biomass Consumed			Closing Stock GCV	Closing Stock	Weighted Average GCV of Biomass			
						From Opening Stock	From New Receipt	Total Consumed			Biomass Received	Biomass consumed	Biomass - Opening Stock	Biomass - Closing Stock
						kg	kg	kg			kCal/kg	kCal/kg	kCal/kg	kCal/kg
E Bio Coal (240388071)	S21BM1.0013	3,996	1,10,795				1,10,795	1,10,795						
RAIS Agrotech (240401275)		3,475	3,59,575	3,733	28,030	28,030	2,55,500	2,63,530	3,475	1,04,075				
Ready Fuel(240406643)				3,495	2,97,737				3,495	2,97,737				
Venkateshwara Agro Fuel (240413910)		3,805	48,800						3,805	48,800				
Biofuels junctions Pvt Ltd (240419097)		3,437	11,72,660				11,48,060	11,48,060	3,437	24,600				
Virtual white flame(240419262)		3,257	1,57,020	2,886	38,260	38,260	1,57,020	1,95,280						
Shri krishna industries (240424746)		3,326	3,35,145				3,35,145	3,35,145						
Harshat Bio Energy (240428846)		3,335	7,13,230	2,985	27,155	27,155	7,13,230	7,40,385						
Shri Giriraj Dheran International(240429759)		3,671	4,50,570				4,50,570	4,50,570						
OM Industries (240430476)	HMDBST0037	3,481	2,80,530	3,432	46,170	46,170	2,80,530	3,26,700						
Manish trading company (240430602)	HMDBS10038	3,636	3,27,230				3,27,230	3,27,230						
Raghav agro industries(240431479)	HMDBST0040	3,761	1,99,370				1,99,370	1,99,370						
Rehbar Energy Private Limited(240431960)		3,364	3,32,530	3,686	1,45,800	1,45,800	3,32,530	4,78,330						
Varahi Enterprise(240432383)		3,579	4,54,090				4,33,440	4,33,440	3,579	20,650				
RACE Eco Chain Limited(240432769)		3,489	5,57,700				5,57,700	5,57,700						
A R Energy (240432998)		2,943	3,73,380				3,48,445	3,48,445	2,943	24,935				
Rehbar Energy Pvt Ltd(240435802)		3,501	4,59,680				4,06,450	4,06,450	3,501	53,230				
Jai Sai Briquette Industries(240436226)		3,728	2,26,020				1,64,660	1,64,660	3,728	61,360				
Gramin Energy Solutions Pvt Ltd(240436317)		3,599	3,26,680				3,26,680	3,26,680						
Shri Krishna Industries (240436854)		3,117	2,08,680				2,08,680	2,08,680						
Gujar Agro Tech(240437821)		3,291	83,150						3,291	83,150				
Sumayya energy and agro process (240437875)		3,363	58,860						3,363	58,860				
E Bio coal(240438188)		3,668	2,86,945				2,62,285	2,62,285	3,668	24,660				
Rehbar Energy Private Limited(240439573)		3,380	2,26,805				2,26,805	2,26,805						

[Signature]
S. R. Arun Kumar

Mar-22

RELIANCE INDUSTRIES LIMITED - HAZIRA MANUFACTURING DIVISION
ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY FINALIZED IN ORDER DTD. 18.02.2020 OF SUO MOTO PETITION # 12/5M/2019

A. DETERMINATION OF HEAT ENERGY GENERATED BY COAL (Qc x Gc) & BIOMASS (Qb x Gb)						
Particulars	Unit	COAL	BIOMASS			
Opening Balance	Kg	5,99,07,478	11,77,253			
Weighted Avg GCV of Opening Balance	Kcal/kg	4,984	2,902			
Quantity Received during month	Kg	16,83,05,810	1,04,16,270			
Weighted Avg GCV of Quantity Received	Kcal/kg	4,955	3,090			
Closing Stock	Kg	5,78,70,933	26,97,898			
Weighted Avg GCV of Closing Balance	Kcal/kg	4,987	3,308			
Ratio of Power Generated through Biomass [(Qb x Gb)/((Qc x Gc)+(Qb x Gb))]						0.0509

B. DETERMINATION OF TOTAL POWER GENERATION - E(GT)						
Power Plant	Capacity	Meter Serial	Units	Initial Reading	Final Reading	MF
CCPP : STG-I	40 MW	3098647	kWH	26,09,187	26,19,770	1,000
CCPP : STG-II	40 MW	8001941	kWH	22,80,108	22,97,075	1,000
CCPP : STG-I	90 MW	XB569261	kWH	28,98,172	29,49,350	1,000
CCPP : STG-II	90 MW	XB569259	kWH	26,81,379	27,30,854	1,000
CCPP : STG-III	90 MW	XB569255	kWH	27,30,575	27,80,899	1,000
CCPP : STG-IV	90 MW	XB569264	kWH	28,28,401	28,80,035	1,000
Total Electricity Generated - E(GT)						
					kWH	23,03,61,000

C. AUXILIARY POWER USED FOR GENERATING POWER						
Power Plant	Meter Serial	Units	Initial Reading	Final Reading	MF	Electrical Units (kwh)
CCPP : STG-I Aux Meter	7002662	kWH	3,409.48	3,438.80	1,000	29,320
CCPP : STG-II Aux Meter						
Meter1	7002663	kWH	8,431.61	8,525.42	1,000	93,810
Meter2	7002665	kWH	7,323.22	7,325.60	1,000	2,380
Meter3	7002655	kWH	11,363.36	11,434.00	1,000	70,640
Meter4	7002651	kWH	10,774.59	10,862.89	1,000	88,300
Meter5	7023020	kWH	48,498.12	48,903.36	1,000	4,05,240
Meter6	7023021	kWH	43,739.82	43,739.95	1,000	130
Meter7	7023019	kWH	42,162.12	42,579.78	1,000	4,17,660
CCPP : SST-I Aux Meter	XC598792	kWH	8,63,531	8,78,513	1,000	1,49,81,376
CCPP : SST-II Aux Meter	XC598788	kWH	8,00,027	8,13,499	1,000	1,34,71,753
Total Auxiliary Power					kwh	2,95,60,609

ELECTRICITY GENERATED FROM BIOMASS AS PER CERC METHODOLOGY	
1. ELECTRICITY GENERATED FROM BIOMASS AT GENERATOR TERMINAL - Eb(G)	
$Eb(G) = [Qb \times Gb] / [(Qc \times Gc) + (Qb \times Gb)] \times E(GT)$	1,17,15,087 kWH
2. TOTAL ELECTRICAL ENERGY SENT OUT (ex-bus) during the month - ESO	
$ESO = \text{Total Electricity Generated} - \text{Aux Consumption}$	20,08,00,391 kWH
3. Ex-Bus Electrical Energy Generated by using Biomass - Eb(ex-bus)	
$Eb(\text{ex-bus}) = Eb(G) \times ESO / [E(GT) + ESO]$	1,02,11,772 kWH

[Signature]
[K. Anur Kumar]



CIN # L17110MH1973PLC019786

RIL-Hz/CAD/2021-22/159

December 02, 2021

Dy. Director - Gujarat Energy Development Agency,
 4th Floor, Block No. 11/12,
 Udyog Bhavan, Sector-11,
GANDHINAGAR

Sub : Submission of CA Certificate towards electricity generation in Biomass Co-fired thermal power plant for consideration towards RPO for FY:21-22 Q1 (Apr'21 to Jun'21) & Q2 (Jul'21 to Sep'21)

Ref : 1. RIL Letter to GEDA dt. 02.02.2021
 2. CERC Order dt. 18.02.2020 & MNRE Notification dt. 26.09.2019
 3. GERC Order No. 1 of 2018 dt. 15.03.2018
 4. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/120 dt. 01.10.2021

Dear Sir,

Reliance Industries Limited (RIL) - Hazira Manufacturing Division operates a world class fully integrated Petrochemical Complex at Vill. Mora, Post.: Bhatha, Surat-Hazira Road, Surat and it caters its power requirement through its Captive power plants.

In view of MNRE Notification & CERC Order (ref # 2) & as per our application to your good office (ref # 1), we have started co-firing of biomass in our Captive thermal power plants at Hazira since April - 2021. We have already requested GEDA (ref#4) and also filed petition no 2012/2021 in Gujarat Electricity Regulatory Commission (GERC) to approve and adopt methodology notified by CERC for calculating quantum of energy generated through biomass cofiring. According to GERC Order on Biomass based power projects dtd. 15.03.2018, para 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit statement of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Accordingly, we are, herewith submitting CA Certificates for monthly data for the period of Apr'21 to Jun'21 (Quarter-I) of FY:2021-22 and Jul'21 to Sep'21 (Quarter-II) of FY:2021-2022. Following units generated through biomass cofiring as per the CA certificates, may please be considered towards our non-solar RPO as per MNRE notification dated 26.09.2019:

Sr No.	Period	Units generation through Biomass (KWH)	Non-solar RPO met (KWH)
1	Apr'21 to Jun'21 (Quarter-I of FY 2021-22)	16,06,352	16,06,352
2	Jul'21 to Sep'21	07 00 225	07 00 225



Submitted for your information and record please.

Thanking you in kind anticipation.

**Yours Sincerely,
For Reliance Industries Limited**

A handwritten signature in black ink, appearing to read "Rashesh Desai", is written over a horizontal line.

**(Rashesh Desai)
Sr. General Manager - Corporate Affairs Dept.**

**Copy fwcs:
Hon. Chairman, Gujarat Electricity Regulatory Commission**

Encl: CA Certificates

To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai - 400 021.

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT HAZIRA MANUFACTURING DIVISION (HMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF APRIL 2021 TO JUNE 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co - firing of Biomass and Power generation at Hazira manufacturing division for the month April 2021 to June 2021, duly signed by the authorized signatory of the Company ('the Statement') is annexed, which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as referred to in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

Conclusion**CHATURVEDI & SHAH LLP**
Chartered Accountants

8. We hereby conclude that the details as referred to Annexure A is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

Restriction on Use

9. This digitally signed certificate has been issued for submission to GEDA, CED, GERC & any statutory authorities for the purpose of any statutory permissions/processes and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

For Chaturvedi & Shah LLP

Chartered Accountants

Firm Registration No. 101720W/W100355

Sandesh
Bankatlal
LadhaDigital Signature of Sandesh Bankatlal Ladha
C.A. No. 047841
UDIN: 21047841AAAKRI7792
Certificate No. 1333 / 2021-22**Sandesh Ladha**

Partner

Membership No.: 047841

Place: Mumbai

UDIN: 21047841AAAKRI7792

Certificate No.:1333 / 2021-22

Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT HAZIRA MANUFACTURING DIVISION (HMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF APRIL 2021 TO JUNE 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point - 400 021, the statement in respect of fuel usage and procurement for co-firing of biomass and power generation at Hazira manufacturing division for the month April 2021 to June 2021 is as below :

Fuel Usage & Procurement Statement - FY 2021-22 - (April 21 to June 21)

Sr No	Particulars	Coal				Biomass			
		Apr-21	May-21	Jun-21	Cumulative Qty	Apr-21	May-21	Jun-21	Cumulative Qty
		MT	MT	MT	MT	MT	MT	MT	MT
1	Opening Stock	96,178	110,118	76,165	96,178		99	668	
2	Qty Procured (Receipt)	154,329	141,916	179,711	475,956	198	2,254	455	2,908
3	Qty Consumed	140,275	175,384	152,144	467,803	99	1,685	50	1,834
4	Transfer to Other Site	114.32	485	475	1,074.32				
5	Closing Stock	110,118	76,165	103,258	103,258	99	668	1,073	1,073

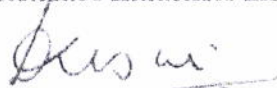
Energy Generation

	Particulars	Apr-21	May-21	Jun-21	Cumulative Qty
		kwh	kwh	kwh	kwh
1	Gross Electricity Generated - E(GT)	204,722,000	221,739,000	215,936,000	642,397,000
2	Net Electricity Generated* - ESO	177,469,420	192,595,650	188,010,830	558,075,900
3	Electricity Generated from Biomass - Eb(G)	101,050	1,695,946	52,498	1,849,494
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	87,598	1,473,046	45,708	1,606,352

Note : * Net Electricity Generated = Gross Electricity Generated - Auxiliary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020

For Reliance Industries Limited



Authorised Signatory

Name: Krunal Desai
Designation: Vice President
Place: Surat
Date: 15.11.2021

To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai - 400 021.

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT HAZIRA MANUFACTURING DIVISION (HMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF JULY 2021 TO SEPTEMBER 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai - 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co - firing of Biomass and Power generation at Hazira manufacturing division for the month July 2021 to September 2021, duly signed by the authorized signatory of the Company ("the Statement") is annexed, which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as referred to in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

Conclusion

8. We hereby conclude that the details as referred to Annexure A is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

Restriction on Use

9. This digitally signed certificate has been issued for submission to GEDA, CED, GERC & any statutory authorities for the purpose of any statutory permissions/processes and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

For Chaturvedi & Shah LLP

Chartered Accountants

Firm Registration No. 101720W/W100355

Sandesh
Bankatlal
Ladha

Sandesh Ladha

Partner

Membership No.: 047841

Place: Mumbai

UDIN: 21047841AAAKRJ3404

Certificate No.:1334 /2021-22

Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT HAZIRA MANUFACTURING DIVISION (HMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF JULY 2021 TO SEPTEMBER 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point - 400 021, the statement in respect of fuel usage and procurement for co-firing of biomass and power generation at Hazira manufacturing division for the month July 2021 to September 2021 is as below :

Fuel Usage & Procurement Statement - FY 2021-22 - (July 21 to September 21)

S r N o	Particulars	Coal				Biomass			
		Jul-21	Aug-21	Sep-21	Cumulati ve Qty	Jul-21	Aug- 21	Sep-21	Cumulativ e Qty
		MT	MT	MT	MT	MT	MT	MT	MT
1	Opening Stock	103,258	120,216	114,436	103,258	1,073	921	148	1,073
2	Qty Procured (Receipt)	172,035	176,069	156,651	504,754	4,974	2,895	1,177	9,046
3	Qty Consumed	154,559	181,486	193,519	529,563	5,127	3,667	925	9,719
4	Transfer to Other Site	517	363	699	1,580				
5	Closing Stock	120,216	114,436	76,869	76,869	921	148	400	400

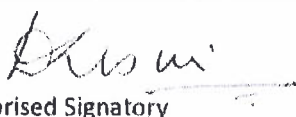
Energy Generation

	Particulars	Jul-21 kwh	Aug-21 Kwh	Sep-21 kwh	Cumulative Qty Kwh
1	Gross Electricity Generated - E(GT)	237,282,000	242,520,000	230,553,000	710,355,000
2	Net Electricity Generated* - ESO	207,363,610	212,423,470	201,307,897	621,094,977
3	Electricity Generated from Biomass - Eb(G)	5,456,960	3,689,709	903,178	10,049,847
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	4,768,904	3,231,819	788,612	8,789,335

Note : * Net Electricity Generated = Gross Electricity Generated - Auxiliary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020

For Reliance Industries Limited


 Authorised Signatory
 Name: Krunal Desai
 Designation: Vice President
 Place: Surat
 Date: 15.11.2021

Reliance

Reliance Industries Limited
CIN # 117110MH1973PLC019786

RIL-Hz/CAD/2021-22/212

February 22, 2022

Dy. Director - Gujarat Energy Development Agency,
4th Floor, Block No. 11/12,
Udyog Bhavan, Sector-11,
GANDHINAGAR - 382 017

Gujarat Energy Development Agency,
Block No. 11 & 12, Udyog Bhavan,
4th Floor, Sector-11, Gandhinagar.

Sub : Submission of CA Certificate towards electricity generation in Biomass
Co-fired thermal power plant for consideration towards RPO for FY:21-
22 Q3 (Oct'21 to Dec'21)

Ref : 1. RIL Letter to GEDA dt. 02.02.2021
2. CERC Order dt. 18.02.2020 & MNRE Notification dt.26.09.2019
3. GERC Order No. 1 of 2018 dt. 15.03.2018
4. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/120 dt. 01.10.2021
5. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/159 dt. 02.12.2021
6. RIL-HMD Letter to GEDA # RIL-Hz/CAD/2021-22/191 dt. 19.01.2022

Dear Sir,

Reliance Industries Limited (RIL) - Hazira Manufacturing Division have started co-firing of biomass in our Captive thermal power plants at Hazira since April - 2021 (ref#1):

We have already requested GEDA (ref#4) and also filed petition no. 2012/2021 in Gujarat Electricity Regulatory Commission (GERC) to approve and adopt methodology notified by CERC for calculating quantum of energy generated through biomass cofiring.

According to GERC Order on Biomass based power projects dtd. 15.03.2018, para 4.11 (Monitoring Mechanism for the use of fossil and non-fossil fuel), it is required to submit statement of monthly fuel usage to GEDA on quarterly basis, duly certified by a practising Chartered Accountant empanelled by C&AG.

Accordingly, we have submitted CA Certificate for Q1 & Q2 of FY:21-22 vide our letter dt. 02.12.2021 (ref#5) and we are herewith submitting CA Certificate for Q3 (Oct'21 to Dec'21) of FY:21-22.

Accordingly, following units generated through biomass cofiring as per the CA Certificates, may please be considered towards our non-solar RPO and oblige:

Sr No.	Period	Units Generation through Biomass (KWH)	Non-Solar RPO met (KWH)
1	Oct'21 to Dec'21 (Quarter III of FY 2021-2022)	1,07,88,112	1,07,88,112

RECEIVED

Reliance

CTN # 117110R011973PLX 019786

Submitted for your information and records please.

Thanking you in kind anticipation.

Yours Sincerely,
For Reliance Industries Limited



(Rashesh Desai)
Sr. General Manager (Corporate Affairs)

Encl: CA Certificate

Copy Fwcd: Hon. Chairman, Gujarat Electricity Regulatory Commission

**To,
Reliance Industries Limited,
Maker Chambers, IV, 3rd Floor,
222, Nariman Point,
Mumbai - 400 021.**

INDEPENDENT PRACTITIONER'S CERTIFICATE IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT HAZIRA MANUFACTURING DIVISION (HMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF OCTOBER 2021 TO DECEMBER 2021.

1. This certificate is issued in accordance with the terms of our engagement with the Company having its registered office at Maker Chambers, IV, 3rd Floor, 222, Nariman Point, Mumbai – 400 021.
2. A Statement containing details in respect of fuel usage and procurement for Co - firing of Biomass and Power generation at Hazira manufacturing division for the month October 2021 to December 2021, duly signed by the authorized signatory of the Company ('the Statement') is annexed, which we have digitally signed for identification purposes only.

Management's Responsibility

3. The preparation of the Statement is the responsibility of the Management of the Company including the preparation and maintenance of all accounting and other relevant supporting records and documents. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the Statement and applying an appropriate basis of preparation; and making estimates that are reasonable in the circumstances.
4. The Management is also responsible for ensuring adherence that the details in the statement are correct.

Practitioner's Responsibility

5. It is our responsibility to provide reasonable assurance that the details as given in Annexure A have been correctly extracted as per records including Books of Account produced before us and information and explanations provided to us.
6. We conducted our examination of the Statement in accordance with the Guidance Note on Reports or Certificates for Special Purposes (Revised 2016) (the "Guidance Note") issued by the Institute of Chartered Accountants of India (ICAI). The Guidance Note requires that we comply with the ethical requirements of the Code of Ethics issued by the ICAI.
7. We have complied with the relevant applicable requirements of the Standard on Quality Control (SQC) 1, Quality Control for Firms that Perform Audits and Reviews of Historical Financial Information, and Other Assurance and Related Services Engagements.

8. We hereby conclude that the details as given in Annexure A is in accordance with the information and explanations to us and other records including Books of Account produced before us for verification by the management of the Company.

9. This digitally signed certificate has been issued for submission to GEDA, CED, GERC & any statutory authorities for the purpose of any statutory permissions/processes and should not be used by any other person or for any other purpose. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this certificate is shown or into whose hands it may come without our prior consent in writing.

Certificate No.: 1436/2021-2022

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Annexure A

A STATEMENT CONTAINING DETAILS IN RESPECT OF FUEL USAGE AND PROCUREMENT FOR CO-FIRING OF BIOMASS AND POWER GENERATION AT HAZIRA MANUFACTURING DIVISION (HMD) BY RELIANCE INDUSTRIES LIMITED (RIL) ("THE COMPANY") FOR THE MONTH OF OCTOBER 2021 TO DECEMBER 2021.

This is to certify that the Company, having its Registered office at Maker Chamber IV, 3rd Floor, Nariman Point – 400 021, the statement in respect of fuel usage and procurement for co – firing of biomass and power generation at Hazira manufacturing division for the month October 2021 to December 2021 is as below :

Fuel Usage & Procurement Statement - FY 2021-22 ; Quarter - 3 (October-21 to December-21)

Sr No	Particulars	Coal				Biomass			
		Oct-21	Nov-21	Dec-21	Cumulative Qty	Oct-21	Nov-21	Dec-21	Cumulative Qty
		MT	MT	MT	MT	MT	MT	MT	MT
1	Opening Stock	76,869	1,17,880	96,583	76,869	400	1,065	1,632	400
2	Qty Procured (Receipt)	2,22,445	1,66,359	1,06,787	4,95,590	1,607	3,271	10,942	15,820
3	Qty Consumed	1,81,338	1,86,944	1,40,808	5,09,090	943	2,704	9,948	13,595
4	Transfer to Other Site	95	712	553	1,360				
5	Closing Stock	1,17,880	96,583	62,009	62,009	1,065	1,632	2,625	2,625

Energy Generation

		Oct-21	Nov-21	Dec-21	Cumulative Qty
		kwh	kwh	kwh	kwh
1	Gross Electricity Generated - E(GT)	22,24,12,000	22,92,55,000	21,29,69,000	66,46,36,000
2	Net Electricity Generated* - ESO	19,30,74,929	20,03,44,741	18,50,62,028	57,84,81,698
3	Electricity Generated from Biomass - Eb(G)	8,53,801	23,59,559	91,89,034	1,24,02,394
4	Ex-Bus electricity Generated from Biomass - Eb(ex-bus)	7,41,181	20,62,007	79,84,924	1,07,88,112

Note : * Net Electricity Generated = Gross Electricity Generated - Auxillary Consumption

** Calculations done as per CERC methodology vide order no Petition # 12/SM/2019 dtd 18.02.2020

For Reliance Industries Limited


Authorised Signatory

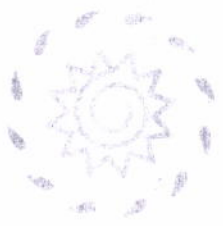
Name: Krunal Desai

Designation: Vice President (FC&A)

Place: Mumbai

all

35018/e-tappa/08/2022



GEDA

ગુજરાત વિદ્યુત નિયંત્રક બોર્ડ
GUJARAT ELECTRICITY REGULATORY COMMISSION
A Public Utility Regulatory Organisation

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BY RPAD

GEDA/GERC/RPO Status/2022-23/08/2381

17/08/2022

To,
✓ The Secretary,
Gujarat Electricity Regulatory Commission,
6th Floor, Gift-One, Road-5C, Zone-5,
GIFT CITY,
Gandhinagar- 382355.

Sub: Request to Hon'ble Commission provide guidance regarding RPO Compliance submission request of monthly electricity generation data of Biomass Co-fired thermal Power plant for consideration towards RPO from M/s. Reliance Industries Limited.

Ref: 1. Monthly electricity generation report from M/s. Reliance Industries Limited.

Respected Sir,

With reference to above subject, it is to kindly inform you that M/s. Reliance Industries Limited is submitting electricity generation data of Biomass Co-fired thermal Power plant on monthly basis to this office from February-2021 for consideration towards RPO. For which they had filled petition having no. 2012/2021 to GERC to approve and adopt methodology for calculating quantum of energy generated through biomass cofiring.

In view of the above, it is kindly bringing on note of Hon'ble Commission that GEDA will submit monthly electricity generation data of Biomass Co-fired thermal Power plant for consideration towards RPO from M/s. Reliance Industries Limited after the verdict of aforesaid petition and approval of adopting methodology for the same.

Thanking You,

for kind personal kl.
- Hon'ble chairman
- " Member
- " Member
- Secretary
AD (Legal)/Ex (Legal)
Process
23/08/2022
Legal

Yours faithfully

(H.M. Mehta)

Asst. Project Executive

CC to:

M/s. Reliance Industries Limited
3rd floor, Maker Chambers IV,
222, Nariman Point, Mumbai- 400021

G.E.R.C.	
No - 4533	Inward No.
Date : 23 AUG 2022	

ચોથો માળ, બ્લોક નં. ૧૧ અને ૧૨ ઉદ્યોગભવન
સેક્ટર-૧૧, ગાંધીનગર - ૩૮૨ ૦૧૭.
4th Floor, Block No. 11-12, Udhogbhavan,
Sector-11, Gandhinagar-382017, India.

Ph. : 079-232 57251-53
Fax : +91 79 232-47097, 57255
e-mail : director@geda.org.in
www.geda.gujarat.gov.in

Subject: Re: Hearing Intimation Notice in Petition No. 2012/2021.

Date: Thursday, 29 September 2022 at 11:14:40 AM India Standard Time

From: Namrata Bhuptani

To: Wasim Ansari

CC: H S Silajiya, Spexwind

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Dear Sir,

Due to today's PM event at Motera Stadium, as all staff members are engaged over there, it is requested to give the next date for the hearing.

On Wed, Sep 21, 2022 at 1:38 PM Wasim Ansari <wasim@gercin.org> wrote:

Sir,

With reference to the above, please find enclosed herewith hearing notice in the Petitions No. 2012/2021. It is to inform you that the hearing is scheduled in Petition No. 2012/2021 on 29.09.2022 at 11:30 A.M.

The hard copy of the aforesaid letter is also being sent separately by R.P.A.D/Speed Post.

Acknowledgement in this regard is solicited by return email.

Thanks & Regards

Wasim Ansari

Assistant Director (Legal)

Gujarat Electricity Regulatory Commission

Gandhinagar, Gujarat.

AD (Legal) / Ex (Legal)
Put in relevant files
29/09/2022

Legal
29/9

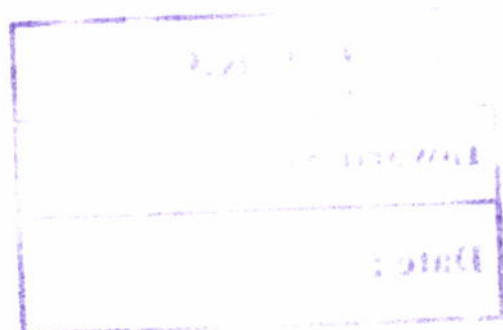
G.E.R.C.

Inward No. 5227

Date: 29 SEP 2022

For kind perusal pl.
- Hon'ble chairman
- " Member
- " Member
- Secretary

W. Ansari
29/9/22



all
10/12/22
6/12/22

252

**BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION AT
GANDHINAGAR**

PETITION NO. 2012 OF 2021

IN THE MATTER OF:

Reliance Industries Limited
Vraj, Near Chandanbala Tower,
Opp. Suvidha Shopping Centre
Paldi, Ahmedabad- 380007

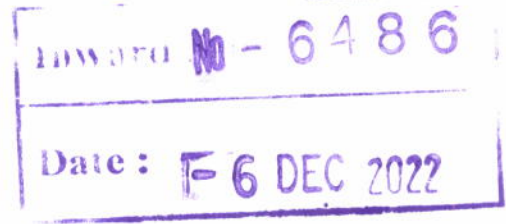
Versus

Gujarat Energy Development Agency
4th Floor, Block No. 11 & 12, Udhog Bhavan,
Sector-11, Gandhinagar
Gujarat- 382017



AD (Legal) / Ex (Legal)
Put in relevant
files

06/12/22
Petitioner



.....Respondent

AFFIDAVIT OF COMPLIANCE PURSUANT TO ORDER DATED 10.10.2022
OF THE HON'BLE COMMISSION

MOST RESPECTFULLY SHOWETH:

1. The Petitioner is filing the present Affidavit in due compliance of the directions issued in the order dated 10.10.2022 of this Hon'ble Commission. Copy of the order dated 10.10.2022 of the Hon'ble Commission is annexed hereto and marked as **Annexure-I**.
2. This Hon'ble Commission, vide its order dated 10.10.2022 in the captioned Petition, had to issue public notices in two daily newspapers i.e. one in English language and one in vernacular language having wide circulation inviting suggestions/views/comments/objections from the stakeholders. Accordingly, the Petitioner has published Public Notice in Gujarati Newspaper 'Gujarat Samachar' dated 26.11.2022 and English Newspaper 'Indian Express' dated 27.11.2022.

Copies of the Public Notices in English as well as Gujarati Newspaper is annexed hereto and marked as **ANNEXURE-II Collectively**.

3. This Hon'ble Commission has further directed to amend the memo of parties to join SLDC and all the distribution licensees within the State as party Respondents in the captioned Petition. The Petitioner submits that

Arzeta



in due compliance of the said direction, the Petitioner has amended the memo of parties by impleading all distribution licensees.

Copy of the amended memo of parties is annexed hereto and marked as **ANNEXURE-III**.



4. This Hon'ble Commission has further directed the Petitioner to provide a copy of Petition with amended memo of parties along with all other documents to the said Respondents within two weeks' time from the date of the aforesaid order. The petitioner submits that in due compliance of the said direction, the Petitioner has supplied a copy of Petition with all other documents, alongwith amended memo of parties to all distribution licensees through RAPD.

Copies of the RAPD receipts is annexed hereto and marked as **ANNEXURE-IV Collectively**.

5. This Hon'ble Commission has further directed the Petitioner to upload the Petition along with all relevant documents on the website of the Commission and call for objections/suggestions from the concerned stakeholders within 30 days of the public notice. The petitioner submits that in due compliance of the said direction, the Petitioner has uploaded the public notice, Petition along with all documents on its website at **www.ril.com/InvestorRelations/Petitions.aspx** calling upon the stakeholders to submit their objections/suggestions within 30 days of the issuance of public notice.

6. The Petitioner submits that the present Affidavit may be treated to be due compliance of the directions issued in the Order dated 10.10.2022 of this Hon'ble Commission.

For, Reliance Industries Ltd.
[Signature]

DEPONENT Signatory



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**BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION AT
GANDHINAGAR**

PETITION NO. 2012 OF 2021

IN THE MATTER OF:

Reliance Industries Limited
Vraj, Near Chandanbala Tower,
Opp. Suvidha Shopping Centre
Paldi, Ahmedabad- 380007

.....Petitioner

Versus

Gujarat Energy Development Agency
4th Floor, Block No. 11 & 12, Udhog Bhavan,
Sector-11, Gandhinagar
Gujarat- 382017.

... Respondent

AFFIDAVIT

I, Ashish Shah, s/o Late Bhalchandra Shah, aged about 55 years residing at Ahmedabad, do solemnly affirm and say as follows:

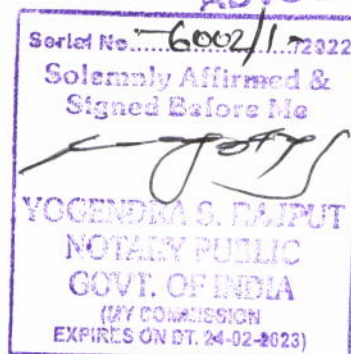
That I am the Senior General Manager of the Petitioner Reliance Industries Limited and authorized signatory of the Petitioner Company herein and I have read the present Affidavit and I am competent and duly authorized by the Petitioner Company to file this Affidavit.

Solemnly affirmed at Ahmedabad on this 3rd day of December, 2022 that the contents of the above affidavit are true to my knowledge and belief (as derived from the records), based on information believed to be true and no part of it is false and nothing material has been concealed therefrom.

For, Reliance Industries Ltd.

Ashish Shah
Authorized Signatory

DEPONENT



- 3 DEC 2022



**BEFORE THE GUJARAT ELECTRICITY REGULATORY COMMISSION
GANDHINAGAR**

Petition No. 2012 of 2021.

In the Matter of:

Petition under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, for issuing necessary directives to the Respondent Gujarat Energy Development Agency (GEDA) to consider power generated from Co-fired Biomass towards compliance of Non-Solar Renewable Purchase Obligation.

Petitioner : Reliance Industries Limited
Vraj, Near Chandanbala Tower,
Opp. Suvidha Shopping Centre,
Paldi, Ahmedabad - 380007.

Represented by : Ld. Sr. Advocate Mr. Saurabh Soparkar and Ld. Adv.
Mr. Keyur Gandhi, Mr. Nisarg Desai alongwith Mr. Mr.
Bhadresh Chauhan and Mr. Anant Kapse

V/s.

Respondent : Gujarat Energy Development Agency
4th Floor, Block No. 11 & 12, Udyog Bhavan,
Sector-11, Gandhinagar- 382017, Gujarat.

Represented by : Nobody was present.

CORAM:

**Mehul M. Gandhi, Member
S. R. Pandey, Member**

Date: 10/10/2022.

DAILY ORDER

1. The above matter was heard on 29.09.2022.

2. At the outset, Ld. Adv. Mr. Nisarg Desai, appearing on behalf of the Petitioner, submitted that the Commission may permit him to file Vakalatnama on behalf of the Petitioner in the present Petition.
- 2.1. Ld. Sr. Adv. Mr. Saurabh Soparkar, appearing on behalf of the Petitioner, submitted that the Petitioner has installed coal based captive power plants of 360 MW at Hazira and 270 MW at Dahej. It is submitted that the present Petition has been filed by the Petitioner seeking directions under the GERC RPO Regulations to consider units generated through biomass co-firing alongwith coal at its captive power plants towards compliance of its non-solar RPO.
- 2.2. It is also submitted that the Ministry of Power had issued the policy for biomass utilisation for power generation through co-firing in pulverized coal fired boilers. It is further submitted that MNRE clarified that the power generated from co-firing of biomass in the thermal power plants is a renewable energy and is eligible for meeting non-solar RPO. It also requested CERC to formulate and notify a procedure/methodology for quantifying the energy produced from biomass in biomass co-fired thermal power plants. Accordingly, the CERC has issued methodology vide its Order dated 18.02.2020 for estimating the energy generated from biomass in biomass co-fired coal based thermal power plants including CPP and co-generation plants. The Petitioner by way of filing the present Petition seeking approval the co-firing of biomass of the Petitioner's plants towards compliance of its non-Solar RPO from February 2021 onwards and issue necessary directions to GEDA in this regard.
- 2.3. In response to the query of the Commission as to whether the Petitioner has joined distribution licensees or SLDC in the present matter, it is submitted that the Petitioner has not joined them as party Respondents in the present matter. It is further requested that the Commission may grant some time to the Petitioner to join distribution licensees, SLDC etc. as party Respondents in the present matter.
3. We have considered the submissions of the Petitioner. We note that when the matter was called out, Respondent GEDA has not remained present. However, the Office of the Commission has received an email from Ms. Namarata Bhuptani, representative of GEDA, requested to give the next date for the hearing due to

unavoidable circumstances as all their staff members are engaged in Hon'ble Prime Minister's event today's at Motera Stadium.

3.1. We note that the present Petition is filed by the Petitioner under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, seeking for issuance of necessary directives to the Respondent Gujarat Energy Development Agency (GEDA) to consider power generated from Co-fired Biomass towards compliance of its Non-Solar Renewable Purchase Obligation. The Petitioner further prayed to implement the procedure as per CERC's Order dated 18.02.2020 in the State of Gujarat and to consider power generated from cofiring of biomass towards compliance of Solar RPO after fulfilment of Non-Solar RPO. We note that the GERC RPO Regulations have been notified by the Commission in exercise of the powers conferred under Sections 61, 66, 86 (1)(e) and 181 of the Electricity Act 2003 and all powers enabling it in that behalf and further amendments have also been issued to Renewable energy/RPO etc. from time to time. Since, the present matter pertains under Section 86(1) of the Electricity Act, 2003 and aforesaid Regulations, the Commission has the power and jurisdiction to decide the same. Hence, we decide to admit the present Petition.

3.2. We also note that the Petitioner is seeking indulgence of the Commission to issue necessary directions to consider power generated from Co-fired Biomass towards compliance of its Non-Solar Renewable Purchase Obligation as per MoP Policy regarding biomass utilisation for power generation through co-firing in coal based power plants and to implement the procedure as per CERC's Order dated 18.02.2020 in the State of Gujarat and thereby to consider power generated from cofiring of biomass towards compliance of Solar RPO after fulfilment of Non-Solar RPO for which the Petitioner alongwith other prayers through the present Petition inter-alia seeking the amendment to the aforesaid Regulations and Order and specify the procedure for declaration of utilisation of biomass to qualify as RE energy and accordingly qualify for RPO compliance. We are of the view that it is necessary to hear stakeholders etc. prior to granting the prayers in the present matter for which, the Petitioner is required to give public notice in two daily newspapers, one in English language and one in vernacular language having wide

circulation inviting suggestions/views/comments/objections from the stakeholders on the present Petition and thereafter, the Commission can decide the matter.

- 3.3. Accordingly, we hold that a public hearing shall be conducted to take into consideration the views/comments/suggestions/objections of the stakeholders before deciding the present matter. The Petitioner is, therefore, directed to issue a public notice in one daily Gujarati Newspaper and one English Newspaper having wide circulation in the State/National level stating that they have filed Petition No. 2012 of 2021 before the Commission under Section 86 read with Sections 62 and 181 of the Electricity Act, 2003 and Regulations 4,5,8 and 12 of GERC (Procurement of Renewable Energy from Renewable Energy Sources) Regulations 2010 and its subsequent amendments thereto, for issuing necessary directives to consider power generated from Co-fired Biomass towards compliance of Non-Solar Renewable Purchase Obligation. The Petitioner is also directed to upload the present Petition with all the documents on its website and invite comments and suggestions from the stakeholders on the Petition on affidavit within 30 days from the date of issuance of public notice. The Petitioner shall also state in the public notice that the stakeholders/objectors shall file their objections/suggestions in the Petition to the Secretary, Gujarat Electricity Regulatory Commission, 6th Floor, GIFT ONE, Road 5C, Zone 5, GIFT City, Gandhinagar - 382355 in five copies along with affidavit in support of their submissions with a direct copy to the Petitioner. Upon receipt of the comments/views/objections/suggestions from the stakeholders, the Petitioner is at liberty to file its reply, if any, to the Commission. The staff of the Commission is also directed to upload the Petition along with all relevant documents on the website of the Commission after compliance affidavit of issuing public notice and uploading of Petition is filed by the Petitioner along with copy of public notices issued by the Petitioner is provided to the Commission and invite comments/suggestions from the stakeholders.
- 3.4. We note that the Petitioner has not impleaded the distribution licensees and SLDC within the State as party Respondents to the present Petition whose views are necessary while deciding the procedures for utilisation of biomass for power generation through co-firing in coal based power plants. Hence, we are of the view

that it is necessary to join SLDC and the distribution licensees within the State as a party Respondents in the matter and hear them in the present matter. Therefore, we decide and direct the Petitioner to join SLDC and all the distribution licensees within the State as party Respondents in the present Petition. We also direct the Petitioner to amend the memo of parties by joining SLDC and all the distribution licensees within the State as party Respondents and file such amended memo of parties in present matter. Further, the Petitioner is directed to provide a copy of Petition with amended memo of parties along with all other documents to the said Respondents within two weeks' time from the date of this Order.

- 3.5. The staff of the Commission is also directed to inform/issue hearing notice for the present Petition to stakeholders/objectors who file their submissions/objections/comments before the Commission in the present matter.
4. The next date of date of hearing will be intimated separately.
5. We order accordingly.

Sd/-
[S. R. Pandey]
Member

Sd/-
[Mehul M. Gandhi]
Member

Place: Gandhinagar.
Date: 10/10/2022.

WWW.INDIANEXPRESS.COM
THE SUNDAY EXPRESS, NOVEMBER 27, 2022

ISRO places nine satellites in orbit, one from Bhutan

ENS & PTI
NEW DELHI, SRIHARIKOTA,
NOVEMBER 26

THE INDIA Space Research Organisation's workhorse PSLV Saturday injected into multiple

Taloja Prison in Navi Mumbai.

Speaking to reporters outside the jail, the scholar-activist said: "I am obviously happy to be released after 31 months for which I have been in prison. The sad part, however, is that we had to spend time in jail for years after being booked in a fake case and the way the case was put on us."



address was mentioned as residing at the Goa Institute of Management, Sanquelim, Goa, due to efflux of time, the court should tract of Teltumbde with the institute has come to an end, said. and the residential address of the appellant would be Rajgruha, Hindu Colony, Dadar (East). Rajgruha is a residence of the Ambedkar family.

Constitution is uniquely Indian even in its functioning, despite the fact that some of its provisions were inspired from other Constitutions of the world. "There is no better time to recall that India is one of the few nations where the Constitution was written by her people," he said. Unnikrishnan, NSG Commando Sunil Jodha rescued the victims, civilians and guests from Taj Hotel during the 26/11 attack. He took seven bullets," Fadnavis said while honouring Jodha.

STATE BANK OF INDIA

LIMBDI BRANCH (60103), STATION ROAD, LIMBDI

SYMBOLIC POSSESSION NOTICE

Rule 8 (1) (For Immovable Properties)

Whereas:

The Undersigned being the Authorized officer of the State Bank of India, under the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest Act - 2002 and in exercise of power conferred under section 13(12) read with Rule 3 of the Security Interest (Enforcement) Rules, 2002 issued a demand Notice dated 09-09-2022 calling upon the Borrower **Shri Zala Rajendrasinh Vikramsinh** to repay the amount mentioned in the notice being **Rs.22,32,843.85 (Rupees Twenty two lacs thirty two thousand eight hundred forty three and paise eighty five only)** as on 29/08/2022 and accrued interest and cost within 60 days from the date of receipt of the said notice.

The Borrower having failed to repay the amount, notice is hereby given to the Borrower/Guarantor and the public in general that the Undersigned has taken **Symbolic Possession** of the property described below in exercise of Powers conferred on him/her under section 13(4) of the Act read with Rule 8 of the said Rules on 21-11-2022.

The Borrower/Guarantor in particular and the public in general are hereby cautioned not to deal with the property and any dealings with property will be subject to the charge of the State Bank of India, for an amount of **Rs.22,32,843.85 (Rupees Twenty two lacs thirty two thousand eight hundred forty three and paise eighty five only)** as on 29/08/2022 and accrued interest and cost etc.

Description of the Immovable Properties

- Situated at...
- Deeded...
- Registered...
- Revenue...
- Survey...
- Area...
- Boundaries...
- Access...
- Easements...
- Encumbrances...
- Other...

(Bachelors Accommodation can be provided in Scientist Hostel at non categories will be as per Govt. Rules. Interested candidates are requested to attend the walk-in interview with their complete bio-data, latest photograph and attested copies of Director, JNARDDC will be final in all matters related to the above mentioned downloaded from the Centre's website <http://jnarddc.gov.in/en/opportunity>

Jayesh R. Limbachiya
Advocate & Notary



BANARAS HINDU UNIVERSITY

Importance established by an Act of Parliament

ADMISSION TO PH.D./VIDYAVARIDHI PROGRAMME

University invites ONLINE APPLICATION for

vidyavardhi programme for January 2023 term

category of the academic session 2022-23.

of applying for admission to the said

the University's Entrance Test Portal

by downloading the RET Information Bulletin

of application form. The online application

the Entrance Test Portal. The last date of its

08th December, 2022. For further details visit

al of BHU (www.bhuonline.in).

REGISTRAR

Gujarat Pollution Control Board
Bhavan, Sector 10 A, Gandhinagar 382 010
Tel 079-23232152 Fax 079-23222784
www.gpcb.gujarat.gov.in

Classifieds

PERSONAL

CHANGE IN NAME

I CHAUHAN BABUBHAI HARIBHAI
is legal father of No.14849924P, Rank:

CHANGE IN NAME

I CHAUHAN DEVUBEN BABUBHAI
is legally wedded spouse of No.
14849924P, Rank: SEP/MT, Name:

IMPORTANT

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Reliance
Industries Limited
Growth is Life

PUBLIC NOTICE

M/s Reliance Industries Ltd (RIL) invites suggestions/ views/ comments/ objections from the stakeholders in Petition No 2012 of 2021 filed by RIL before Hon'ble Gujarat Electricity Regulatory Commission under section 86 read with 62 and 181 of the Electricity Act, 2003 and Regulations 4, 5, 8 and 12 of GERC (Procurement of Energy from Renewable Energy Sources) Regulations, 2010 and its subsequent amendments thereto, to consider power generated through Biomass co-firing along with Coal at its Captive Power Plants situated at Dahej and Hazira towards compliance of its Non Solar Renewable Purchase Obligation (RPO); to implement the "Methodology for Estimation of Electricity Generated from Biomass in Biomass Co-fired Thermal Power Plants" in the State of Gujarat as per the order dated 18.02.2020 passed by Hon'ble Central Electricity Regulatory Commission; and to consider power generated from co-firing of Biomass towards compliances of Solar RPO after fulfillment of Non Solar RPO. Hon'ble GERC vide order dated 10.10.2022 has directed RIL to call for comments/ objections/ suggestions from the stakeholders by issuing public notice. All the relevant documents of the said petition and GERC order dated 10.10.2022 is uploaded on <https://www.ril.com> and also on website of Commission. The stakeholders can file their suggestion/ views/ comments/ objections along with affidavit in support of their submission in the said petition within 30 days from the issuance of this public notice directly to RIL at the address given below and also to the Secretary, Gujarat Electricity Regulatory Commission, 6th Floor, GIFT ONE, Road 5C, Zone 5, GIFT City, Gandhinagar-382355, in 5 copies/sets.

Anant Kapse
Sr. General Manager - Reliance Industries Limited,
VRAJ, Nr Orion Lawn, Rajpath-Rangoli Road,
Off Sindhu Bhavan Road, Bodakdev, Ahmedabad - 380054
Date: 26.11.2022

Gujarat Pollution Control Board
Paryavaran Bhavan, Sector 10 A, Gandhinagar 382 010
Tel 079-23232152 Fax 079-23222784 www.gpcb.gujarat.gov.in

Public Notice

It is hereby to inform that as per Ministry of Environment, Forest & Climate Change, Government of India, New Delhi vide its Notification no. S.O. 1533(E) dated September 14, 2006; Public Hearing has been fixed for below mentioned 05 (Five) Riverbed Sand Mine Leases for Proposed Rate of Mining - 72,210 MTPA (Total Cluster Area: 5.39.74 Ha) located at Village: Sundalpura and Shili, Taluka: Umroth, Dist. Anand, Covered under project category "B" as mentioned in their request Applications.

District Level Officer authorized by him/her in this behalf shall supervise and preside over the entire public hearing process.

(Note:- If a project or activity is confined to the territorial jurisdiction of one sub-division, the District Magistrate/District Collector/Deputy Commissioner may alternatively authorize any officer not below the rank of Sub-Divisional Magistrate to supervise and preside over the entire public hearing process).

The Public Hearing is scheduled to be held on 28/12/2022 at 15:00 Hrs, Venue: At Survey No. 479, Shaktinagar Chokdi, Village: Shili, Ta. Umroth, Dist. Anand.

Considering the present situation of pandemic of Covid-19 all concerned are hereby informed to follow Government guidelines regarding Covid-19 pandemic.

Place: Gandhinagar
Date: 24/12/2022

D. M. Thaker
Member Secretary

Ahmedabad

**BEFORE THE HON'BLE GUJARAT ELECTRICITY REGULATORY
COMMISSION, GANDHINAGAR**

PETITION NO. 2012 OF 2021

AMENDED MEMO OF PARTIES

IN THE MATTER OF:

Reliance Industries Limited Vraj,
Near Chandanbala Tower,
Opp. Suvidha Shopping Centre,
Paldi, Ahmedabad - 380007

....Petitioner

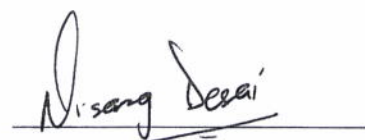
Versus

1. Gujarat Energy Development Agency
4th floor, Block No. 11 & 12,
Udyog Bhavan,
Sector -11, Gandhinagar,
Gujarat 382017
2. State Load Despatch Centre
132KV Gotri Sub Station Compound,
Gotri Road, near T.B. Hospital,
Vadodara
Gujarat 390007
3. Paschim Gujarat Vij Company Ltd.
"Paschim Gujarat Vij Seva Sadan",
Laxminagar, Rajkot,
Gujarat 360004
4. Madhya Gujarat Vij Company Ltd
Sardar Patel Vidyut Bhavan,
Race Course, Vadodara,
Gujarat 390007
5. Dakshin Gujarat Vij Company Ltd.
"Urja Sadan"
Nana Varachha Road Kapodar,
Surat,
Gujarat 395006
6. Uttar Gujarat Vij Company Ltd
"UGVCL Regd. & Corporate Office",
Visnagar Road, Mehsana,
Gujarat 384001
7. Torrent Power Limited - Dholera
'Samanvay', 600, Tapovan,

Ambawadi, Ahmedabad,
Gujarat 380015

8. Torrent Power Limited – Distribution Ahmedabad
“Samanvay”, 600, Tapovan,
Ambawadi, Ahmedabad,
Gujarat 380015
9. Torrent Power Limited – Distribution Surat
Torrent House, Station Road, Surat
Gujarat 395003
10. Torrent Power Limited – Distribution Dahej
Plot Z-21, Dahej SEZ Ltd,
Tal Vagra, Dist Bharuch
Gujarat 392130
11. MPSEZ Utilities Ltd
Adani Corporate House, Shantigram,
Near Vaishnavdevi Circle, S.G.Highway,
Khodiyar, Ahmedabad
Gujarat 382421
12. AspenPark Infra Vadodara Private Limited
5th Floor, Godrej Millennium,
Koregaon Park Road,
Koregaon Park, Pune,
Maharashtra 411001
13. GIFT Power Company Limited
EPS- Building No 49A, Block No 49,
Zone 04, Gyan Marg, GIFT City,
Gandhinagar
Gujarat 382355
14. Deendayal Port Trust
Business Development Cell,
P.O. Box 50, Administrative Building
Gandhidam, Kutch
Gujarat 370201
15. Jubilant Infrastructure Limited
Plot No. 4 & 5,
Vilayat Industrial Estate,
Tal. Vagra, Dist. Bharuch
Gujarat 390012

....Respondent



For Gandhi Law Associates
Advocate for Petitioners

<Dial 18002666868> <Wear Masks, Stay Safe>



RG177943525IN IVR:8271177943525
RL GUJARAT HIGH COURT SO <380060>
Counter No:1,11/11/2022,12:46
To:GIFT POWER CO LTD.GHR
PIN:382355, Dabhoda SO
From:GANDHI LAW ASSOCIATES.AHD
Wt:794gms
Amt:220.00(Cash)

<Track on www.indiapost.gov.in>

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RG177943777IN IVR:8271177943777
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Counter No:1,11/11/2022,12:46
To:ASPEHPARK INFRA VADODARA.P LTD
PIN:411001, Pune H.O
From:GANDHI LAW ASSOCIATES.AHD
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Amt:220.00(Cash)

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RG177943785IN IVR:8271177943785
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To:MPSEZ UTILITIES LTD.KHODIYAR
PIN:382421, Adalaj SO
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PIN:395003, Surat HD
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RL GUJARAT HIGH COURT SO <380060>
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PIN:384001, Mahesana HD
From:GANDHI LAW ASSOCIATES.AHD
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Amt:220.00(Cash)

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To:DAKSHIN GUJ V.NANA VARACHHA RO
PIN:395006, Varachha Road SO
From:GANDHI LAW ASSOCIATES.AHD
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Amt:220.00(Cash)

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To:POVCL.PASCHIM GUJ VIJ
PIN:360004, Raikot Postal Colony SO
From:GANDHI LAW ASSOCIATES.AHD
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RL GUJARAT HIGH COURT SO <380060>
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PIN:395007, Racecourse SO
From:GANDHI LAW ASSOCIATES.AHD
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RG177943803IN IVR:8271177943803

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:TORRENT POWER.DISTRIBUTION DAH

PIN:392130, Dahei SO

From:GANDHI LAW ASSOCIATES.AHD

Wt:798gms

Amt:220.00(Cash)

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RG177944021IN IVR:8271177944021

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:TORRENT POWER.DIST AND SAMANVY

PIN:380015, Nanekbag SO

From:GANDHI LAW ASSOCIATES.AHD

Wt:798gms

Amt:220.00(Cash)

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RG177944018IN IVR:8271177944018

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:TORRENT POWER.DHOLERA SAMANVYA

PIN:380015, Nanekbag SO

From:GANDHI LAW ASSOCIATES.AHD

Wt:786gms

Amt:220.00(Cash)

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RG177943635IN IVR:8271177943635

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:BUJ ENERGY DE.UDYOG BHAVAN

PIN:382010, Gandhinagar Gujarat HO

From:GANDHI LAW ASSOCIATES.AHD

Wt:35gms

Amt:30.00(Cash)

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RG177943627IN IVR:8271177943627

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:STATE LOAD DE.132 KV GOTRI SUB

PIN:390007, Racecourse SO

From:GANDHI LAW ASSOCIATES.AHD

Wt:799gms

Amt:220.00(Cash)

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RG177943508IN IVR:8271177943508

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:JUBILANT INFR.PLOT NO 4 5

PIN:390012, Atladara SO

From:GANDHI LAW ASSOCIATES.AHD

Wt:804gms

Amt:225.00(Cash)

<Track on www.indiapost.gov.in>

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RG177943511IN IVR:8271177943511

RL GUJARAT HIGH COURT SO <380060>

Counter No:1.11/11/2022.12:46

To:DEENDAYAL POR.BUSINESS DEVELOP

PIN:370201, Gandhidham SO

From:GANDHI LAW ASSOCIATES.AHD

Wt:798gms

Amt:220.00(Cash)

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