CHALLA GUNARANJAN
ADVOCATE

TSERC HYDERABAD
INWARD
27 DEC 2021
No. Sign

TO

27-12-2021

THE SECRETARY,
THE HONOURABLE TELANGANA STATE ELECTRICITY
REGULATORY COMMISSION
IVTH FLOOR, SINGARENI BHAVAN,
RED HILLS, HYDERABAD

Sir,

We are herewith filing the copy of O.P.No. /2021 along with verification affidavit and Annexures 5+1 sets with requisite fee of Rs. 3,63,000/- vide D.D.No. 188617 dated 20.12.2021 for main petition, and I.A drawn on UNION BANK OF INDIA. Kindly receive and acknowledge the same.

Thanking You,

Yours faithfully,

(CHALLA GUNARANJAN)
COUNSEL FOR PETITIONER

CHALLA GUNARANJAN
ADVOCATE
Flat No: 101 Krishnaveni Pride,
H. No: 8-3-833/204, Kamalapuri Colony,
Hyderabad - 500 045.

यूनियन बैंक Union Bank of India

क्रम सं.
Sr. No.

18AA17 N00803111

KHAMMAM

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****** Not Over INR. 3,63,000.00 ******

मांगने पर अदा करें
ON DEMAND PAY THE SECRETARY TELANGANA STATE ELECTRICITY REGULATORY COMMISSION को या उनके आदेश पर OR ORDER

रुपये RUPEES Three Lakh Sixty Three Thousand only

प्राप्त मूल्य के लिए FOR VALUE RECEIVED ₹ *****3,63,000.00

BC. No. 48188617 प्रति To यूनियन बैंक Union Bank of India

कृते यूनियन बैंक ऑफ इंडिया For Union Bank of India

Purchaser: MADHUCON SUGAR AND POWER INDUSTRIES LIMITED
HYDERABAD MAIN
(532720)Valid for 3 months only from the date of issue
Key:XXB739672

प्राधिकृत हस्ताक्षरकर्ता Authorised Signatories

Please sign above

Manager

PF No. 601172

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BEFORE THE HON'BLE TELANGANA ELECTRICITY REGULATORY COMMISSION

AT ITS OFFICE AT V FLOOR, SINGARENI BHAVAN, RED HILLS, HYDERABAD

FILING NO. /2021

CASE NO. O.P.NO . / 2021

CHRONOLOGICAL/RUNNING INDEX

S. No.	Particulars	Date of Document	Date of Filing	Page No.
1.	Petition filed under S.62 and S.86(1)(b) R/w. S.86(1)(e) of the Electricity Act, 2003	21.12.2021	27.12.2021	1-13
2.	Verification	-do-	-do-	14-15
3.	Copy of the order of this Hon'ble Commission in O.P.No.9 of 2021	09.09.2021	-do-	16-40
4.	Copy of the draft PPA	10.12.2021	-do-	41-79
5.	Copy of the communication between the parties	17.12.2021	-do-	80-81
6.	Copy of the National Electricity Policy and the Tariff Policy	28.01.2016 12.02.2005	-do-	82-115
7.	Copy of the Sanction Letter of the loan granted to the petitioner's project	27.12.2006	-do-	116-117
8.	Copy of the statement detailing the parameters and calculation of tariff for the petitioner's project	---	-do-	118-119
9.	Copy of the Order of this Hon'ble Commission determining the levelized generic tariff for bagasse-based power plants	20.10.2018	-do-	120-144
10.	Copy of the Order of this Hon'ble Commission in O.P. No. 21 of 2020 determining the variable cost until FY 2023-24 for *inter-alia* bagasse-based plants	28.08.2020	-do-	145-155
11.	Vakalat	22.12.2021	-do-	156

Date: 27.12.2021
Place: Hyderabad

Counsel for Petitioner

BEFORE THE HONOURABLE TELANGANA ELECTRICITY REGULATORY COMMISSION
AT ITS OFFICE AT V FLOOR, SINGARENI BHAVAN, RED HILLS, HYDERABAD

FILING NO. /2021
IN
O. P. No. /2021

In the matter of: Petition under Sections 62 and 86 (1)(b) read with Section 86 (1)(e) of the Electricity Act, 2003 read with TSERC Regulation 2 of 2015 for determination of levelized tariff for the fixed cost for the Petitioner's 24.2 MW bagasse-based cogeneration Project

AND

Between:

M/s.Madhucon Sugar and Power Industries Limited,
Rajeswarapuram, Ammagudem Post,
Nelakondapalli Mandal,Khammam District,
Represented by its Director (Operations),
Mr.M.Srinivasa Rao.

...PETITIONER

AND

Northern Power Distribution Company of Telangana Limited
H.No: 2-5-31/2, Corporate Office, Vidyut Bhavan,
Nakkalgutta, Hanamkonda,Warangal-506001
Represented by its Chairman & Managing Director.

...RESPONDENT

PETITION FILED UNDER SECTION 62 AND SECTION 86(1)(B) READ WITH SECTION 86(1)(E) OF ELECTRICITY ACT, 2003 READ WITH TSERC REGULATION 2 OF 2015

Most Respectfully Showeth:

1. The Petitioner is a company incorporated under the provisions of Companies Act 1956, having its Registered Office at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District, Telangana, and *inter alia* engaged in the business of manufacture and sale of sugar and allied products. The

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M - Srinivasa Rao

petitioner had acquired a sick 1250 TCD sugar manufacturing unit at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District, Telangana in the year 2002, and had subsequently expanded the factory capacity to 3500 TCD. It has also established a 24.2 MW bagasse-based co-generation power plant in the same premises in the FY 2008-09. The petitioner uses bagasse as fuel for generation of power. Ever since the commissioning of the co-generation plant, the power generated is partly used for its captive purpose and surplus power is being sold to DISCOMs of composite AP State till its bifurcation, and later to the DISCOMs of Telangana State under short term PPAs year on year.

2. The respondent is the Distribution licensee operating within the area of the petitioner.

3. It may be pertinent to first set out briefly the background and the principles underlying the promotion of Non-Conventional Energy (renewable sources of energy), including the bagasse based co-generating projects inasmuch as the Electricity Act, 2003 mandates promotion and development of electricity from renewable sources of energy in consonance with national policy and international treaties and covenants.

4. The demand for electricity has been growing by leaps and bounds over the last several years and the country has been in the grip of chronic power shortages. The erstwhile policy was to vest the monopoly for generation of power in public sector enterprises. It was subsequently realized that State resources would be insufficient to

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meet the growing demand for electricity, and new policy initiatives were taken to enable and encourage the participation of the private sector in the generation, transmission and distribution of electricity. It was also considered necessary to establish small generating stations, geographically distributed and utilising local resources including renewable sources of energy, so as to reduce transmission and distribution losses.

5. It is necessary to recognize that the present renewable sources of energy such as Wind, Hydel, etc. are resources which cannot be preserved and maintained for the use of future generations and if they are not used beneficially now, they are lost forever. Simultaneously other Renewable Sources like Biomass, Bagasse and Municipal Solid Waste (MSW) based projects need to be encouraged to avoid fast depletion of fossil fuels like Coal, Lignite, Gas etc. It is therefore mandatory that, even at higher direct or indirect costs, the present generation is bound to support the development of renewable sources of energy and to consume and support all energy generated from such sources by suitable preferential treatments and incentives.

6. The Government of India set up the Ministry for Non-Conventional Energy Sources (MNES) to promote and develop non-conventional energy (NCE) and to evolve policy guidelines. Accordingly, institutional mechanisms (e.g. IREDA, etc.,) were established and the Government of India announced a policy package of incentives, which included duty concessions, tax exemptions, subsidies, concessional and promotional finance, etc.

M. Subba Rao

7. The State Governments were also required to promote and facilitate the establishment of non-conventional energy projects based on the guidelines issued by the MNES. For development of NCE projects in the composite State, the erstwhile State of Andhra Pradesh established NEDCAP and also encouraged the establishment of non-conventional power projects by private enterprise. The facilitation and incentives to these power projects included sale of electricity to third parties, wheeling by the State Utilities, banking of energy and purchase of electricity by the APSEB/APTRANSCO. The Government of composite state of Andhra Pradesh, keeping in view of the policy formulated and the guidelines issued by the Central Government for promotional and fiscal incentives, formulated incentives schemes for non-conventional sources of energy including bagasse-based co-generation plants, and improved upon the same from time to time.

8. Pursuant to AP State Reorganization Act, 2014 the State of Telangana was formed with effect from 02.06.2014. Most of the Renewable Energy Projects including Sugar co-generation plants are located in residual Andhra Pradesh State. Consequently, the consumption of energy from RE sources including from bagasse-based co-generation plants is far below the level of Renewable Power Purchase Obligation (RPPO) specified by the Commission especially in Non-Solar sources. Presently in the State of Telangana there are only Seven sugar mills having cogeneration facilities and out of which six are in operation. These six sugar mills have co-generation with a capacity of 105.25 MW. Four Sugar mills with a

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M. Subba Rao

capacity 57.25 MW are selling surplus power to State DISCOM's under long term PPAs. As only a few sugar co-generation power plants are in operation and having regard to the nature of industry, availability of resources, the bagasse based co-generation need to be encouraged in terms of statutory mandate under the provisions of Electricity Act, 2003 read with National Electricity Policy and National Tariff Policy issued under Section 3 of the Act. The relevant provisions read as under:

Section 86 (1) (e) of Electricity Act, 2003

86. Functions of State Commission

(1) The State Commission shall discharge the following functions, namely:-

.....

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

National Electricity Policy

The National Electricity Policy notified by the Central Government under Section 3 of the Electricity Act, 2003 on 12.02.2005 makes specific mention of purchase of surplus power from Sugar Cogeneration plants. The relevant extracts of the said Policy are extracted hereunder:

*"**Non-conventional Energy Sources***

5.2.20 Feasible potential of non-conventional energy resources, mainly small hydro, wind and bio-mass would also need to be exploited fully to create additional power generation capacity. With a view to increase the overall share of non-conventional energy sources in the electricity mix, efforts will

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be made to encourage private sector participation through suitable promotional measures.

5.12.3 Industries in which both process heat and electricity are needed are well suited for cogeneration of electricity. A ***significant potential for cogeneration exists in country, particular in the sugar industries. SERCs may promote arrangements between co generator and the concerned Distribution Licensee for purchase of surplus power from such plants****. Cogeneration system also needs to be encouraged in the overall interest of energy efficiency and also grid stability." (Emphasis supplied)*

National Tariff Policy

The Tariff Policy notified by Central Government under section 3 of Electricity Act, 2003 on 28.01.2016 reflects the mandate under section 86(1)(e) in Para 6.4(1), which is extracted hereunder:

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

9. The brief facts leading to filing of this petition are being narrated herein below for the kind consideration of this Hon'ble Commission.

It is submitted that as stated above, the petitioner company has a 3500 TCD Sugar Mill at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District, along with a 24.2 MW Bagasse based cogeneration Power Plant, using bagasse as primary fuel by making a substantial investment amounting to Rs.115,00,43,262/- as on date, as RE sources including Bagasse

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M - Subbarao

based co-generation are encouraged by Central Government as well as State Government as stated supra.

10. It is submitted that upon a request made by the petitioner, APTRANSCO accorded approval for synchronization of the plant and accordingly, the plant was synchronized with the grid on 20.10.2008 and CoD was declared on 20.10.2008.

11. It is submitted that this Hon'ble Commission vide Order dated 20.10.2018 had also determined the generic levelized fixed tariff for NCE based cogeneration plants at Rs.2.23/unit from FY 2010-11 to FY 2029-30 for all projects achieving COD during the control period of FY 2018-20 and adoptable for projects which had achieved COD after 2009.

12. It is submitted that the petitioner had approached this Hon'ble Tribunal vide O.P.No.9 of 2021 seeking the determination of the fixed cost component of the tariff for its project. The said O.P.No.9 of 2021 was dismissed vide order dated 09.09.2021, as it was observed that was a disagreement between the parties as to the capacity to be sold, while granting liberty to the petitioner to approach the respondent for execution of a PPA.

13. It is submitted that subsequently, the petitioner approached the respondent, and both parties executed a draft PPA on 10.12.2021 for the sale of 19 MW, and the same has been submitted to this Hon'ble Commission for its approval. As there now exists a PPA between the parties with the capacity agreed upon, the petitioner is herewith approaching this Hon'ble Commission seeking the determination of

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a levelized tariff for the fixed cost component of tariff of the petitioner's Project, for the duration of the PPA, in terms of Article 2.2 of the said PPA which reads as under:

"*2.2. The Company shall be paid the tariff for the energy delivered at the interconnection pointy for sale to DISCOM* ***at the tariff to be determined by TSERC upon filing of Petition by the Company****, specified in Schedule I A. No tariff will be paid for the energy delivered at the Interconnection Point beyond contacted capacity i.e., 19 MW."*

14. It is submitted that the respondent, vide its Letter dated 17.12.2021 had intimated to the petitioner that the draft PPA dated 10.12.2021 was submitted to this Hon'ble Commission for its approval vide its Lr.No.CGM(IPC&RAC)GM(PIR)/DE(IPC)/ADE(IPC)/F.No.11/D. No.416/21 dated 11.12.2021. It was further informed by the respondent that in view of the petitioner's request to offtake power as the cane crushing season had begun, the respondent would be availing power from the petitioner, subject to the tariff fixed by this Hon'ble Commission.

15. It is submitted that this Hon'ble Commission's Order dated 20.10.2018 has taken into account the prevailing parameters for existing bagasse-based projects. Alternatively, for the balance period, the fixed cost component of the tariff for the petitioner's project has to be determined on a project specific basis for which the petitioner has furnished the relevant data alongwith this petition.

A. Fixed Charges (F.C)

(i). Capital Cost (CC): The Hon'ble CERC in its RE tariff Regulations of 2009 and 2012, specified the Capital Cost for base years i.e., 2009-10 as Rs.445 lakhs/MW and this Hon'ble Commission has considered a

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

capital cost of Rs.435.5 lakhs/MW. The petitioner has incurred an actual capital expenditure of Rs.115 Crores for the 24.2 MW Co-generation plant as on date, as the petitioner's plant is fully automated, and the petitioner has its own reservoirs of water for operating its plant. Further, the petitioner had also installed its own transmission line for 13 KM to the interconnection point of the respondent. The petitioner has also installed a fully automated fuel handling system and standby redundancy equipment which contributes to the safety of the plant. The capital cost incurred for the project as on the date of commissioning was Rs.10,081.24 lakhs. As such, the capital cost of the petitioner's project works out to about Rs. 416.58 lakhs/MW.

Hence the petitioner humbly requests this Hon'ble Commission to adopt this Capital Cost of Rs.416.58 lakhs/MW for determining the capital cost for the project.

(ii). Debt and Equity Amount:

As per the normative debt to equity ratio of 70:30, the debt component of the fixed charges works out to Rs.291.61 lakhs/MW and the equity component works out to Rs.124.97 lakhs/MW, and it is humbly requested that this Hon'ble Commission may be pleased to adopt the same for determining the debt and equity components of the fixed charges for the project.

(iii). Operation and Maintenance Expenses

The O&M expenses towards repairs and maintenance, employee expenses and other overheads, including expenses incurred for safety measures, for smooth and safe running of the project, as on the 11th year of operation of the project comes to Rs.33.93 lakhs per month.

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Hence the petitioner humbly requests this Hon'ble Commission to adopt the O&M expenses of Rs.33.93 lakhs/month for determining the Fixed cost for the project.

(iv). Interest on debt and working capital

The interest on debt and working capital, as per the averaged actuals till date, comes to 12.65% per annum, and the petitioner humbly requests this Hon'ble Commission to adopt the same for determining the Fixed cost for the project.

Other parameters

The petitioner requests that the other parameters norms may be fixed as per this Hon'ble Commission in its Order dated 20.10.2018. The parameters fixed by this Hon'ble Commission as against the variation in the petitioner's project are as follows:

Sl.No.	Particulars	Units	As per Order dt.20.10.2018	Petitioner
1	Installed Power Generation Considered for workings	MW	1	1
2	Auxiliary Consumption	%	9.00%	9.00%
3	PLF	%	55.00%	55.00%
4	Useful Life	Years	20	20
5	Capital Cost	Rs Lakhs /MW	435.5	**416.58**
6	Debt	%	70%	70%
7	Equity	%	30%	30%
8	Total Debt Amount	Rs. In Lakhs	304.85	**291.61**
9	Total Equity Amount	Rs. In Lakhs	130.65	**124.97**
10	Interest on Debt	% PA	10.25%	12.25%
11	Return on Equity (Pre-Tax)	% PA	17.60%	17.60%
12	Discount Rate (Equity to WACC)	%	9.29%	9.29%
13	Depreciation			
a	Depreciation Rate for first 13 years	%	5.28%	5.28%
b	Depreciation Rate 14th Year onwards	%	3.05%	3.05%
14	Working Capital			
a	For Fixed Charges			

Madhucon Sugar and Power Industries Ltd., Rajeswarapuram 507160

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	O & M Charges	Months	1	1
	Maintenance Spares (15% of O & M Expenses)	Rs. In Lakhs	3.327	**5.09**
	Receivables for Debtors	Months	2	2
b	For Variable Charges			
	Bagasse Stock	Months	1	1
15	Interest on working Capital	%PA	11.25%	**12.65%**
16	Heat Rate	Kcal / KWhr	3600	3600
17	GCV	Kcal / Kg	2250	2250
18	O & M Expenses	Rs Lakhs /MW	22.18	**33.93**
19	O & M Escalation		5.00%	5.00%
20	Levelized Fixed Cost for the life of the plant	Rs. /Unit	2.23	**2.16**

16. It is submitted that the calculations based on the aforesaid parameters are annexed herein, and the petitioner humbly prays that the parameters of capital cost, debt and equity amounts, which are lower than those determined by this Hon'ble Commission, and O&M expenses and interest of working capital which are slightly higher than those determined by this Hon'ble Commission may be considered for the purposes of the present petition.

17. It is submitted that this Hon'ble Commission had determined the variable cost vide its Order dated 21.04.2020 in O.P.No.15 of 2020 had determined the variable cost for *inter alia* bagasse based power projects for the FY 2019-20, and vide Order dated 28.08.2020 in O.P.No.21 of 2020 determined the variable cost for *inter alia* bagasse based power projects for the FY 2020-21 to FY 2023-24. The said variable cost as determined by this Hon'ble Commission will apply equally to the petitioner's project, and as such, the present petition is confined to the determination of fixed cost.

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18. The petitioner craves leave of this Hon'ble Commission to supplement the instant petition with further pleadings or documents, should the need arise.

LIMITATION

19. It is humbly submitted that the present Petition is well within the period of limitation.

JURISDICTION

20. It is submitted that this Hon'ble Commission is having jurisdiction to decide and determine and grant the relief sought for by the Petitioner Company.

COURT FEES

21. The present petition is filed under S.62, S.86(1)(b) and S.86(1)(e) of the Electricity Act, 2003 read with Regulation No.2 of 2015 and the fee payable for such Petition is governed by Clause 3(a) of the TSERC Regulation 2 of 2016 which specifies fees at Rs.15,000 per MW, and the present petition is determining the fixed cost tariff for 19 MW, which comes to Rs.2,85,000/-. Further, an amount of Rs.25,000/- is also to be paid for the application filed alongwith the present petition as per Clause 4(c)(ii) of TSERC Regulation 2 of 2016. As such, an amount of Rs.3,63,000/- is being paid by way of D.D No.188617 dated 20.12.2021 drawn on Union Bank of India at Khammam, payable at Hyderabad, and the same is now enclosed to this Petition.

PRAYER:

In the aforesaid circumstances, the Petitioner Company therefore prays that the Hon'ble Commission may be pleased to:

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

a) Determine the levelized fixed cost component of tariff at Rs.2.16 per unit for the petitioner's 24.2 MW Bagasse based co-generation project for the entire duration of the PPA by approving the said draft PPA dated 10.12.2021 executed between the parties for the sale of 19 MW;

b) Declare that the variable cost determined by this Hon'ble Commission vide its Order dated 21.04.2020 in O.P.No.15 of 2020 would also be applicable to the petitioner;

c) Pass such order or orders as this Hon'ble Commission may deem fit and proper in view of the facts and circumstances of the case and in the interest of justice.

Place: Hyderabad
Date: 20.12.2021

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

DEPONENT

14

BEFORE THE HONOURABLE TELANGANA ELECTRICITY REGULATORY COMMISSION
AT ITS OFFICE AT V FLOOR, SINGARENI BHAVAN, RED HILLS, HYDERABAD

FILING NO. /2021

O. P. No. /2021

In the matter of: Petition under Sections 62 and 86 (1)(b) read with Section 86 (1)(e) of the Electricity Act, 2003 read with TSERC Regulation 2 of 2015 for determination of levelized tariff for the fixed cost for the Petitioner's 24.2 MW bagasse-based cogeneration Project

AND

Between:

M/s.Madhucon Sugar and Power Industries Limited,
Rajeswarapuram, Ammagudem Post,
Nelakondapalli Mandal,Khammam District,
Represented by its Director (Operations),
Mr. Mandalapu Srinivasa Rao. ...PETITIONER
AND

Northern Power Distribution Company of Telangana Limited
H.No: 2-5-31/2, Corporate Office, Vidyut Bhavan,
Nakkalgutta, Hanamkonda,Warangal-506001
Represented by its Chairman & Managing Director.

...RESPONDENT

AFFIDAVIT

I, Mandalapu Srinivasa Rao, S/o. M.Venkateswarlu, aged about 49 years, resident of Khammam, temporarily having come down to Hyderabad, do hereby solemnly and sincerely affirm and state on oath as follows:

1. I say that I am the authorized representative of Petitioner Company and I am fully conversant with the facts and circumstances of the present case and I am, therefore, competent to affirm this affidavit.

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

M. Srinivasa Rao

2. I say that I have read the accompanying Petition and have understood the contents thereof and I say that the same has been drafted under my instructions. I say that the contents therein are true and correct based on the records maintained by the Petitioner Company during course of its business.

S. CHAKRAPANI
ADVOCATE
6-3-609/190/2, Peasant Avenue,
Adj. to SBI Bank, Anandnagar,
Khairatabad, Hyderabad-500 004
Cell : 9441219659

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

DEPONENT

Sworn and signed before me on this
21st day of December, 2021

VERIFICATION

I, Mandalapu Srinivasa Rao, S/o. M. Venkateswarlu, aged about 49 years, resident of Khammam, temporarily having come down to Hyderabad, the above named deponent, do hereby verify that the contents of this Affidavit are true and correct to my knowledge, no part of it is false and nothing material has been concealed therefrom.

Verified at Hyderabad on this the 21st day of December, 2021.

COUNSEL FOR PETITIONER

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

DEPONENT

TELANGANA STATE ELECTRICITY REGULATORY COMMISSION

5th Floor, Singareni Bhavan, Red Hills, Lakdi-ka-pul, Hyderabad 500 004.

O.P.No.9 of 2021

Dated 09.09.2021

Present

Sri T. Sriranga Rao, Chairman
Sri M. D. Manohar Raju, Member (Technical)
Sri Bandaru Krishnaiah, Member (Finance)

Between:

M/s Madhucon Sugar and Power Industries Limited,
Rajeswarapuram, Ammagudem Post,
Nelakondapalli Mandal, Khammam District. ... Petitioner.

AND

Northern Power Distribution Company of Telangana Limited,
Corporate Office, # 2-5-31/2, Vidyut Bhavan,
Nakkalgutta, Hanamkonda, Warangal - 506 001. ... Respondent.

The petition came up for virtual hearing through video conference on 01.03.2021, 09.06.2021, 28.06.2021 and 29.07.2021. Sri Challa Gunaranjan, Advocate for petitioner appeared on 01.03.2021, 28.06.2021 and 29.07.2021, Sri Deepak Chowdary, Advocate representing Sri Challa Gunaranjan, Advocate for petitioner appeared on 09.06.2021. Sri Mohammad Bande Ali, Law Attaché for respondent have appeared on 01.03.2021, 09.06.2021, 28.06.2021 and 29.07.2021. The matter having been heard and having stood over for consideration to this day, the Commission passed the following:

ORDER

The petitioner has filed the present petition under sections 62 and 86(1)(b) and (e) of the Electricity Act, 2003 (Act, 2003) seeking determination of tariff for the petitioner's 24.2 MW bagasse based cogeneration project and consequent direction

to the respondent to purchase the power under long term PPA. The averments of the petitioner are as below.

a) that it is a company incorporated under the provisions of the Companies Act 1956, having its registered office at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District, Telangana and inter alia engaged in the business of manufacture and sale of sugar and allied products. It had acquired a sick 1250 Tons of Cane per Day (TCD) sugar manufacturing unit at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District, Telangana in the year 2002 and had subsequently expanded the factory capacity to 3500 TCD. It has also established a 24.2 MW bagasse based co-generation power plant in the same premises in the FY 2008-09. It uses bagasse as fuel for generation of power. Ever since the commissioning of the co-generation plant, the power generated is partly used for its captive purpose and surplus power is being sold to DISCOMs of composite State of Andhra Pradesh till its bifurcation and later to the DISCOMs in the Telangana State under short term PPA(s) year on year.

b) that it may be pertinent to first set out briefly the background and the principles underlying the promotion of Non-Conventional Energy (NCE) (renewable sources of energy), including the bagasse based cogenerating projects inasmuch as the Act, 2003 mandates promotion and development of electricity from renewable sources of energy in consonance with national policy and international treaties and covenants.

c) that the demand for electricity has been growing by leaps and bounds over the last several years and the country has been in the grip of chronic power shortages. The erstwhile policy was to vest the monopoly for generation of power in public sector enterprises. It was subsequently realized that state resources would be insufficient to meet the growing demand for electricity and new policy initiatives were taken to enable and encourage the participation of the private sector in the generation, transmission and distribution of electricity. It was also considered necessary to establish small generating stations, geographically

distributed and utilising local resources including renewable sources of energy, so as to reduce transmission and distribution losses.

d) that it is necessary to recognize that the present renewable sources of energy such as wind, hydel, etc. are resources which cannot be preserved and maintained for the use of future generations and if they are not used beneficially now, they are lost forever. Simultaneously other renewable sources like biomass, bagasse and Municipal Solid Waste (MSW) based projects need to be encouraged to avoid fast depletion of fossil fuels like coal, lignite, gas etc. It is therefore mandatory that, even at higher direct or indirect costs, the present generation is bound to support the development of renewable sources of energy and to consume and support all energy generated from such sources by suitable preferential treatments and incentives.

e) that the Government of India (GoI) set up the Ministry for Non-Conventional Energy Sources (MNES) to promote and develop NCE and to evolve policy guidelines. Accordingly, institutional mechanisms (viz., IREDA, etc.,) were established and the GoI announced a policy package of incentives, which included duty concessions, tax exemptions, subsidies, concessional and promotional finance, etc.

f) that the State Governments were also required to promote and facilitate the establishment of NCE projects based on the guidelines issued by the MNES. For development of NCE projects in the composite State, the erstwhile State of AP established NEDCAP and also encouraged the establishment of NCE power projects by private enterprise. The facilitation and incentives to these power projects included sale of electricity to third parties, wheeling by the State Utilities, banking of energy and purchase of electricity by the APSEB/APTransco. The Government of composite State of AP, keeping in view of the policy formulated and the guidelines issued by the Central Government for promotional and fiscal incentives, formulated incentives schemes for non-conventional sources of energy including bagasse based cogeneration plants and improved upon the same from time to time.

g) that pursuant to the A.P. State Reorganisation Act, 2014 the Telangana State was formed with effect from 02.06.2014. Most of the renewable

energy projects including sugar co-generation plants are located in residual State of AP. Consequently, the consumption of energy from RE sources including from bagasse based co-generation plants is far below the level of Renewable Power Purchase Obligation (RPPO) specified by the Commission especially in non-solar sources. Presently, in Telangana State there are only seven sugar mills having cogeneration facilities and out of which six are in operation. These six sugar mills have co-generation with a capacity of 105.25 MW. Four sugar mills with a capacity 58.8 MW are selling surplus power to State DISCOM's under long term PPA's. As only few sugar co-generation power plants are in operation and having regard to the nature of industry, availability of resources, the bagasse based cogeneration need to be encouraged in terms of statutory mandate under the provisions of Act, 2003 read with National Electricity Policy (NEP) and Tariff Policy issued under section 3 of the Act, 2003. The relevant provisions read as under:

Section 86 (1) (e) of Act, 2003

"86. **Functions of State Commission**

(1) The State Commission shall discharge the following functions, namely:-

... ...

(e) Promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources a percentage of the total consumption of electricity in the area of a distribution license;"

National Electricity Policy

National Electricity Policy notified by the Central Government under section 3 of the Electricity Act, 2003 makes specific mention of purchase of surplus power from sugar cogeneration plants, which are extracted here under:

"5.12.3 Industries in which both process heat and electricity are needed are well suited for cogeneration of electricity. A significant potential for cogeneration exists in country, particular in the sugar

industries. SERCs may promote arrangements between co generator and the concerned Distribution Licensee for purchase of surplus power from such plants. Cogeneration system also needs to be encouraged in the overall interest of energy efficiency and also grid stability."

Tariff Policy

Tariff Policy notified by Central Government under section 3 of the Electricity Act, 2003 reflects the mandate under section 86 (1) (e) in Para 6.4 (1), which is extracted here under:

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

RPO Trajectory specified by Central Government under Tariff Policy

Para 6.4(1) specifies that the long term growth trajectory of Renewable Purchase Obligation (RPO's) will be prescribed by the Ministry of Power (MoP) in consultation with Ministry of New and Renewable Energy (MNRE). The MoP in consultation with MNRE issued an order dated 14.06.2018 notifying long term growth trajectory of RPO for Non-solar as well as solar uniformly for all the states from 2019-20 to 2021-22 as under:

Long term RPO trajectory	2019-20	2020-21	2021-22
Non-Solar	10.25%	10.25%	10.50%
Solar	7.25%	8.75%	10.50%
Total	17.50%	19.00%	21.00%

This Commission vide Regulation No.2 of 2018 had notified the RPPO for the FY 2018-19 to 2021-22 as under:

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Year/RPPO	2018-19	2019-20	2020-21	2021-22
Solar	5.33	5.77	6.21	7.10
Non-Solar	0.67	0.73	0.79	0.90
Total	6.00	6.50	7.00	8.00

h) that it has a 3500 TCD Sugar Mill at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District, Telangana along with a 24.2 MW bagasse based cogeneration power plant, using bagasse as primary fuel by making substantial investment of Rs.115,00,43,262/- as RE sources including bagasse based cogeneration are encouraged by Central Government as well as State Government as stated supra.

i) that upon a request made by it, APTransco accorded approval for synchronization of the plant and accordingly the power plant was synchronized with the grid on 20.10.2008 and CoD was declared on 20.10.2008.

j) that it is supplying the surplus power of about 18.5 MW during season and about 22.20 MW during off-season to the DISCOMs in the composite State of Andhra Pradesh and after bifurcation of State of Andhra Pradesh to States of A.P. and Telangana in the year 2014, to the respondent DISCOM under short term PPA(s). It has been supplying power to the DISCOM since 2009 onwards, including the entirety of FY 2015-16, 2016-17 and for substantial periods of FY 2017-18, FY 2018-19 and FY 2019-20. The term of the latest short term PPA dated 26.04.2019 and was valid until 31.03.2020.

k) that the petitioner intends to sell the surplus power generated from the said project to the respondent distribution licensees in the Telangana State on a long term basis at the tariff to be determined by this Commission. It's project is a bagasse based power plant and thus is a 'Renewable and Green Energy' initiative.

l) that the petitioner company has made substantial investments for establishment of the project and the respondent has been purchasing power from the petitioner under the aforesaid short term agreements.

m) that in terms of section 86(1)(e), the Commission is required to promote generation of electricity from renewable sources of energy by providing

suitable measures for connectivity with the grid and sale of electricity to any person.

n) that this Commission vide order dated 20.10.2018 had determined the generic levelized fixed tariff for NCE based cogeneration plants at Rs. 2.23 / unit from FY 2010-11 to FY 2029-30 for all projects achieving COD during the control period of FYs 2018-20 and adoptable for projects which had achieved COD after 2009. It's project had achieved COD on 20.10.2008, that is around 5 months before the date from which the said order is made applicable.

o) that this Commission's order dated 20.10.2018 has taken into account the prevailing parameters for existing bagasse based projects. However, even otherwise, alternatively, for the balance period, the fixed cost component of the tariff for the petitioner's project has to be determined on a project specific basis for which the petitioner has furnished the relevant data along with this petition.

A. **Fixed Charges (F.C.)**

(i) Capital Cost (CC): The Hon'ble CERC in its RE tariff Regulations of 2009 and 2012, specified the capital cost for base years that is 2009-10 as Rs. 445 lakh/MW and this Commission has considered a capital cost of Rs. 435.5 lakh / MW. It has incurred an actual capital expenditure of Rs.115 crore for the 24.2 MW Co-generation plant, as it's plant is fully automated and it has its own reservoirs of water for operating its plant. Further, it had also installed its own transmission line for 13 km to the interconnection point of the DISCOM. It has also installed a fully automated fuel handling system and standby redundancy equipment which contributes to the safety of the plant. As such, its capital cost of the project works out to about Rs.4.75 crore / MW. Hence it is stated that this Commission adopt the capital cost of Rs.4.75 crore / MW for determining the fixed charges for the project.

(ii) Debt and Equity Amount: The petitioner has set up its project with a debt component of Rs.322.661 / MW and an equity component of Rs.142.569 / MW, due to the higher capital cost and it

requested the Commission may be pleased to adopt the same for determining the fixed charges for the project.

(iii) Operation and Maintenance Expenses: The petitioner has incurred an amount of Rs. 24.24 lakh per month, as per actual, as O & M expenses towards repairs and maintenance, employee expenses and other overheads, including expenses incurred for safety measures, for smooth and safe running of the project and requested the Commission to adopt the O & M expenses of Rs. 24.24 lakh / month / MW for determining the fixed cost for the project.

(iv) Interest on Debt: The petitioner's debt of Rs.80.5 crore incurred in setting up of the project is being serviced at an actual rate of 11%. Hence, the petitioner requests the Commission to adopt this interest rate of 11% for determining the fixed charges for the project.

(v) Other parameters: The petitioner requests that the other parameters and norms may be fixed as per this Commission in its Order dated 20.10.2018. The parameters fixed by this Commission as against the variation in the petitioner's project to the extent of the capital cost and debt and equity amounts are as follows:

Sl. No.	Particulars	Units	As per Order dt.20.10.2018	petitioner
1	Installed power generation considered for workings	MW	1	1
2	Auxiliary Consumption	%	9.00%	9.00%
3	PLF	%	55.00%	55.00%
4	Useful Life	Years	20	20
5	Capital Cost	Rs Lakhs / MW	435.5	475.23
6	Debt	%	70%	70%
7	Equity	%	30%	30%
8	Total Debt Amount	Rs. In Lakhs	304.85	332.661
9	Total Equity Amount	Rs. In Lakhs	130.65	142.569

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Sl. No.	Particulars	Units	As per Order dt.20.10.2018	petitioner
10	Interest on Debt	% PA	10.25%	11%
11	Return on Equity (Pre-Tax)	% PA	17.60%	17.60%
12	Discount Rate (Equity to WACC)	%	9.29%	9.29%
13	Depreciation			
a	Depreciation Rate for first 13 years	%	5.28%	5.28%
b	Depreciation Rate 14th year onwards	%	3.05%	3.05%
14	Working Capital			
a	For fixed charges			
	O&M Charges	Months	1	1
	Maintenance Spares (15% of O&M Expenses)	Rs. in Lakh	3.327	3.636
	Receivables for Debtors	Months	2	2
b	For variable charges			
	Bagasse stock	Months	1	1
15	Interest on working capital	% PA	11.25%	11.25%
16	Heat Rate	kcal/kWh	3600	3600
17	GCV	kcal/kg	2250	2250
18	O&M Expenses	Rs.lakh/MW	22.18	24.24
19	O&M Escalation		5.00%	5.00%
20	Levelized fixed cost for the life of the plant	Rs./Unit	2.23	2.42

p) that the parameters of capital cost, debt and equity amounts, and O&M expenses which are slightly higher than those determined by this Commission may be considered for the purposes of the present petition.

B. **Variable Cost (V.C.)**

q) that this Commission vide its order dated 21.04.2020 in O.P.No.15 of 2020 had determined the variable cost for inter alia bagasse based power projects for the FY 2019-20, and vide order dated 28.08.2020 in O.P.No.21 of 2020 determined the variable cost for inter alia bagasse based power projects for the FY 2020-21 to FY 2023-24. The said variable cost as determined by this Commission will apply equally to it's project, and as such, the present petition is confined to the determination of fixed cost.

r) that if the long term PPA is not entered the petitioners project will not be able to service the loans obtained by the petitioner. If it is further delayed, the petitioner company would be facing great difficulty and that apart, the installed capacity of the company would become unutilized. It is stated that substantial amounts have been invested by it with the noble objective of generating green power which is environment friendly and now the petitioner is ready and willing to sell power to the respondent as per the tariff fixed by this Commission.

s) that, if the long term PPA is in place, better socio-economic benefits can be achieved in backward areas of Khammam district. The welfare of sugar cane farmers and sugar industrial workers will be better assured on account of support from cogeneration activity which is incidentally in line with one of the objective of MNRE's scheme to support promotion of biomass based cogeneration in sugar mills and other industries in the country. It will be able to generate consistent revenues and which will enable it to pay the sugar cane payments to the farmers in time.

2. The petitioner has sought the following prayer in the petition

"a) To determine the fixed cost component of tariff at Rs.2.42 per unit and variable cost as per the Commission's order dated 28.08.2020 in O. P. No. 21 of 2020 for the petitioner's 24.2 MW bagasse based cogeneration project.

b) To direct the respondent to purchase the surplus power generated by the petitioner company from 24.2 MW bagasse based non-conventional energy cogeneration project by entering

into a long term power purchase agreement for the balance period of normative life of the project."

3. The respondent has filed counter affidavit and the averments of it are as below:

a) that the petitioner has have established 24.2 MW bagasse based cogeneration project in the premises of 3500 TCD sugar manufacturing unit at Rajeswarapuram, Ammagudem post, Nelakondapalli mandal, Khammam district and that the COD of the plant was declared on 20.10.2008.

b) that it has been stated by the petitioner that the plant has been supplying the surplus power of about 18.5 MW during season and about 22.2 MW during off-season to the respondent since 2009 onwards under short term basis and the latest short term agreement dated 26.04.2019 was valid until 31.03.2020.

c) that in the context of petitioner's prayer for determination of specific tariff for their project, the kind attention of this Commission is drawn to the following sections 61 (h), 62 (1) (a) and 86 (1) (a), (b) & (e) which are extracted below for better appreciation:

Section 61 (Tariff Regulations):

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

... ...

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

... ...

Section 62 (Determination of tariff):

(1) The Appropriate Commission shall determine the tariff in accordance with the provisions of this Act for –

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

Provided that the Appropriate Commission may, in case of shortage of supply of electricity, fix the minimum and maximum ceiling of tariff for sale or purchase of electricity in pursuance of

an agreement entered into between a generating company and a licensee or between licensees, for a period not exceeding one year to ensure reasonable prices of electricity;

... ..."

Section 86 (Functions of State Commission)

(1) The State Commission shall discharge the following functions, namely:-

(a) determine the tariff for generation, supply, transmission and wheeling of electricity, wholesale, bulk or retail, as the case maybe, within the State:

Provided that where open access has been permitted to a category of consumers under section 42, the State Commission shall determine only the wheeling charges and surcharge thereon, if any, for the said category of consumers;

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

... ...

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

... ...

d) that as submitted above, section 61 of the Act, 2003 confers powers to the Commission to specify terms and conditions for determination of tariff, guided by several factors. However, the condition precedent under section 62 (1) and also sections 86 (1) (a) and 86 (1) (b) mandating the Commission to determine the tariff for supply of electricity by a

generating company to a distribution licensee is that there shall be a PPA subsisting between the parties for determination of tariff. Since the respondent has no subsisting agreement with the petitioner as on date the prayer of the petitioner seeking determination of the project specific tariff is not justified.

e) that without prejudice to the above, this Commission may kindly appreciate that erstwhile APERC vide orders dated 20.03.2004 determined the tariff payable to the renewable energy projects (biomass, bagasse, mini hydel & industrial waste based projects) commissioned upto 31.03.2009.

f) that aggrieved by the APERC orders dated 20.03.2004, appeals were filed before Hon'ble APTEL by various developers. Hon'ble APTEL passed order dated 02.06.2006 setting aside APERC orders. DISCOMs filed appeals before Hon'ble Supreme Court against Hon'ble APTEL orders dated 02.06.2006. The Hon'ble Apex court by its order dated 08.07.2010 disposed the civil appeals quashing the orders of Hon'ble APTEL and remanded the matters to the then APERC directing to hear the NCE generators afresh and to fix the price. Upon the directions of the Hon'ble Supreme Court, APERC after conducting public hearings, issued order dated 12.09.2011, incorporating the three individual orders passed by the Chairman and two Members. The APERC order was challenged by the DISCOMs and the generators filed appeals before Hon'ble APTEL. Hon'ble APTEL disposed the appeals by its common order dated 20.12.2012, directing the APERC to determine the tariff for the NCE projects on the basis of norms/parameters fixed by the Tribunal.

g) that as such after series of litigations before various forums, pursuant to the directions of Hon'ble APTEL, the said APERC order culminated into APERC order dated 22.06.2013, wherein fixed cost was determined for first 10 years of operation for the RE projects (including bagasse based cogeneration projects). The order clearly stipulates that the tariff so determined is applicable for the RE projects which were existing as on 31.03.2004 and those commissioned between 01.04.2004 to 31.03.2009, except for those projects covered by negotiated PPAs. It is stated that the developer's project was commissioned in 2008 that is well

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within the period for which the erstwhile APERC determined tariff is available and as such, had the developer entered into PPA as per the requests of DISCOM at that time itself, then erstwhile APERC tariffs would have been continuing to their project.

h) that further, the joint APERC for the states of Telangana and Andhra Pradesh vide orders dated 05.08.2014, determined generic tariff for the bagasse based co-generation projects wherein the Fixed was determined for 11th to 20th year of operation.

i) that after bifurcation of the State, the Commission vide Regulation No.1 of 2014 adopted all regulations, decisions, directions, orders issued by the erstwhile APERC as in existence as on the date of constitution of the Commission.

j) that apparently, it drives the point that in spite of availability of tariff for the petitioner's project (which was commissioned during October 2008) and that the developer did not chose to enter into PPA with the respondent DISCOM and instead preferred to sell the power under short term basis as they found it more beneficial at that time than to enter PPA. In fact, this resulted in additional power purchase cost by the DISCOMs in open market.

k) that further under section 86 (1) (e) this Commission conferred with the powers to specify percentage of purchase of power from renewable sources, issued RPPO Regulation No. 2 of 2018 mandating TSDISCOMs for purchase from renewable energy sources a minimum quantity (in kWh) of electricity expressed as a percentage of its total consumption of energy.

l) that this Commission is empowered to pass appropriate directions to the DISCOMs in case of non-fulfilment of RPPO obligation and DISCOMs cannot be thrusted by any party to enter into long term PPA at a tariff as demanded by the developers.

m) that without any prejudice to the submissions made above it submitted as below:

   i) The tariff determined by TSERC in the order dated 20.10.2018 cannot be applied to the developer's project, since the same is applicable for the bagasse based cogeneration projects

commissioned during the control period 2018-2020 and the developer's project was commissioned in 2008;

ii) Determination of project specific tariff under section 62 (1) read with section 86 (1) (a) & (b) is also not justified since there is no subsisting PPA between DISCOM and the developer as such;

iii) Most importantly, the tariff determined by erstwhile APERC vide orders dated 22.06.2013 (applicable for the projects commissioned upto 31.03.2009) can also be not made applicable to the developer's project directly for the balance life period of the project that is upto 2028, since the developer did not come forward to enter into PPA at that time for sake of additional financial benefits and this action of the developer forced the DISCOM to purchase energy in the open market at higher prices to the extent of the quantum of plant capacity for which the developer did not come forward for PPA at that time.

n) In light of the above, the respondent prays this Commission to grant liberty to the DISCOM to take a decision on entering into PPA with the petitioner, duly taking into consideration the power requirement of the licensee and Non-Solar RPPO % to be met. Further, respondent prays this Commission to give liberty to the respondent to negotiate a tariff lower than the erstwhile APERC tariffs (22.06.2013 & 05.08.2014 order) available since because of the action of the developer not to enter the PPA after COD resulted in DISCOMs purchase power at higher prices from open market, as submitted above.

4. The petitioner has filed rejoinder to the counter affidavit and the averments of it are as below:

a) that it is pertinent to mention at the outset that it has set-up the 24.2 MW bagasse-based cogeneration project (project) in the premise of 3500 TCD Sugar manufacturing unit and it has setup the same on the principles underlying the promotion of nonconventional energy (renewable sources of energy), including the bagasse based cogeneration projects and in as much as the Act, 2003 which mandates promotion and development of electricity from renewable sources of

energy in consonance with the NEP and international treaties and conventions and the actions of the respondents in entering into short PPA's on year on year basis has put immense pressure on the petitioner.

b) that it sought for vendor registration 19 MW (earlier 18.5 MW) exportable RTC (round the clock) capacity during the season and accordingly TSTransco issued proceeding vide Lr. No. ED / Comml / SE-IPC / DE-1 / F.VR-Madhucon / D. No. 254 / 20 dated 29.01.2021 for 19 MW during the season, enabling petitioner to avail open access; which is valid till 2026.

c) that the contention of the respondents' that existence of a PPA or signing of a PPA is a condition precedent for the Commission to determine the Tariff of the project exercising its powers u/s 62, 86 (1) (a) and 86 (1) (b) is totally misconceived. It is the legislative intension that power to fix tariff has been conferred on the Commissions and once the tariff is fixed, the parties i.e., the generating companies and licensees who enter into agreement of purchase shall be bound by the said tariff. It is pertinent to mention that the Commission had on many occasions fixed either the generic tariff or project specific tariff for non-conventional energy projects, basing in which the licensees have concluded the PPAs.

d) that the respondents contention that it had not come forward to sell power to DISCOM / respondent is misplaced in as much as it has been all through requesting the purchase power on long term basis, however they preferred to purchase only under short term purchase during intermittent intervals when there was power shortage, no document has been placed before the Commission that the respondents have offered to purchase power in terms of above referred generic tariff by calling upon the petitioner to enter into long term PPA, unlike other similarly situated bagasse based plants.

e) that the Central Government in exercise of powers u/s 3 (1) of the Act, 2003 has fixed the trajectory specifying the percentage (%) renewable energy to be procured by the obligated entities / DISCOMS which is in terms of NEP. The said trajectory specifies the projection as below:

Year	Solar RPO	Non- Solar RPO			Total RPO
		HPO	Other Non-Solar RPO	Total Non-Solar RPO	
2019-20	7.25%		10.25%	10.25%	17.50%
2020-21	8.75%		10.25%	10.25%	19.00%
2021-22	10.50%	0.18%	10.50%	10.68%	21.18%
2022-23	To be specified later	0.35%	To be specified later	To be specified later	To be specified later
2023-24		0.66%			
2024-25		1.08%			
2025-26		1.48%			
2026-27		1.80%			
2027-28		2.15%			
2028-29		2.51%			
2029-30		2.82%			

f) that the Commission issued Renewable Power Purchase Obligation (RPPO) - Regulation No.2 of 2018 specifying the obligation as under:

Year/RPPO	2018-2019	2019-20	2020-21	2021-22
Solar	5.33	5.77	6.21	7.10
Non- Solar	0.67	0.73	0.79	0.90
Total	**6.00**	**6.50**	**7.00**	**8.00**

g) that the above specified obligation is yet to be achieved by the respondent's besides the object and intention was not meant to restrict the purchase of non-conventional energy power beyond the percentage (%) specified and there is no embargo under section 86(1)(e) placing any restrictions on such purchases.

h) that the fixation of tariff is essentially legislative function to be exercised by the Commission and that the parties on their own cannot agree to any specific tariffs, therefore, it is only the Commission which alone is empowered to fix the same and definitely not by way of any mutual negotiations between the parties. The Central Government as well as State Government have conceived to achieve a huge task of achieving 175 GW by March, 2022, and further enhance to 450 GW by 2030,

therefore the licensees have onerous job of aiding and discharging the above objective in-line with Central Government trajectory and directions of this Commission. At the cost of repetition, the petitioner submits that the percentage (%) specified in regulation No.2 of 2018 is only a minimum percentage (%) and not maximum and the DISCOMs being instrumentalities of State have to fall in line with the Central and State policies.

5. The commission has heard the counsel for the petitioner and the representative of the respondent. It has perused the material available on record. The submission on different dates are recorded below:

Record of proceeding dated 01.03.2021:

"... ...The counsel for the petitioner stated that the petition is filed for determination of the tariff for the petitioner's project. The representative of the respondent sought time of two months for filing counter affidavit in the matter. The respondent is permitted to do so and the counter shall be filed on or before 19.04.2021 by serving a copy of the same to the counsel for petitioner through email or in physical form. The counsel for petitioner may file rejoinder, if any, on or before 26.04.2021 by serving a copy of the same to the respondent through email or in physical form. ... ..."

Record of proceeding dated 09.06.2021:

"... ... The counsel for the petitioner stated that the counter affidavit is yet to be filed in the matter. The representative of the respondents stated that the counter affidavit has been filed. The Commission pointed out that the counter affidavit has been filed and it is available in the record. At that point it directed the office to ensure filing of acknowledgement of service of counter affidavit and rejoinder. The matter is adjourned. The representative of the respondent shall ensure serving a copy on the petitioner of its counter affidavit immediately and the counsel for petitioner shall file a rejoinder if any without out fail by next date of hearing."

Record of proceeding dated 28.06.2021:

"... ... The counsel for petitioner stated that the matter involves determination of tariff and as the counter affidavit has been filed, he requires further time to

make submissions in the matter, accordingly sought for scheduling the matter to another date. The representative of the respondent has no objection."

Record of proceeding dated 29.07.2021:

"... ... The counsel for petitioner stated that the matter involves determination of tariff for the cogeneration project. The project was originally established in the year 2008 and the petitioner has been undertaking sale of energy to the DISCOMs under short term sale.

The counsel for petitioner stated that the petitioner's project is a renewable source of energy and it will aid the DISCOMs in complying with the renewable power purchase obligation as mandated in the Act, 2003, National Electricity Policy and National Tariff Policy. He has referred to various provisions applicable in Act, 2003, the NEP and NTP. He referred to the RPPO trajectory fixed by the Commission as well as the Government of India. He pointed out that there is a vast difference in the non-solar trajectory of RPPO. The Commission had fixed only the minimum percentage of RPPO at 0.9% of total sales of DISCOMs, however, they can procure higher quantum of power under non-solar as there is no restriction in the Commission's trajectory. It will also aid the DISCOMs to comply with the trajectory fixed by the Government of India. The Government of India fixed 10.75% towards non-solar power. Therefore, the DISCOMs should procure power under renewable sources from the petitioner and others.

The counsel for petitioner stated that the tariff now sought in this petition has been elaborately explained. Further, the counsel for petitioner identified certain parameters with regard to determination of tariff based on CERC Regulation. He has referred to the capital cost, debt equity ratio, interest on working capital and O&M expenses. He stated that all the other parameters are taken from the order of the Commission only.

The counsel for petitioner stated that the tariff parameters to be considered were determined from time to time by the then combined Commission and this Commission also. This project being of the year 2008, the parameters mentioned in the order of the year 2004-09 have to be considered. The petitioner has submitted the parameters in terms of the CERC Regulation as well as the combined APERC orders. The petitioner's project is in the 14th year of operation. The combined APERC had determined tariff for 11th to 20th year

of operation by its order in O.P.No.8 of 2014 dated 23.08.2014, which has been adopted by this Commission. This Commission also passed orders in the year 2018 fixing tariff for the control period FY 2018-20. The counsel for petitioner pointed out the variations that need to be considered, which are at a difference to generic parameters in the case of the petitioner.

The counsel for petitioner adverted to the contentions of the respondent that the tariff cannot be determined unless there is an agreement between them and rebutted it by explaining the provisions of sections 62, 86(1)(a) and (b) of the Act, 2003. It is his case that variable cost is being determined by the Commission, this petition is limited to determination of fixed cost only. He also stated that the petitioner is a cogeneration project and the respondents have sent a letter stating that they are willing to enter into an agreement provided the entire capacity is sold to them, which is uncalled for as it is a captive cogeneration plant. He sought determination of tariff so as to enable the parties to enter into an agreement for sale of energy by the petitioner to the respondents.

The representative of the respondent stated that the petitioner had been supplying power to the DISCOMs all these years through the short term procurement process and never came forward to sign the PPA. Had the petitioner approached the DISCOM at the relevant time, the petitioner's case would have been considered. He opposed the contention that the DISCOMs are not required to enter into an agreement before the tariff is determined by the Commission by explaining the provisions of the Act, 2003. It is his case that the DISCOM is willing to enter into an agreement and procure the power provided the petitioner is agreeable to sell the entire capacity of the unit."

6. Based on the submissions of the petitioner and the respondent, the following issues arises for consideration, before delving into the merits of the tariff parameters proposed by the petitioner:

Issue No.1: Whether the petitioner's request to determine the project specific tariff can be accepted in the absence of PPA with the respondent?

Issue No.2: Whether the petitioner's request to direct the respondent to enter into a PPA with the petitioner can be considered?

Issue No.1:

7. The contentions of the petitioner are –

a) that it intends to sell the surplus power generated from its 24.2 MW Bagasse based cogeneration power plant to the respondent on a long term basis at the tariff to be determined by this Commission.

b) that the Commission vide order dated 20.10.2018 had determined the generic levelized fixed tariff for NCE based cogeneration plants at Rs. 2.23 / unit from FY 2010-11 to FY 2029-30 for all projects achieving COD during the control period and adoptable for projects which had achieved COD after 2009. It's project had achieved COD on 20.10.2008, that is around five (5) months before the date from which the said order is made applicable and requested the Commission for determination of tariff by considering the parameters proposed by it.

c) that the contention of the respondents' that existence of a PPA or signing of a PPA is a condition precedent for the Commission to determine the Tariff of the project exercising its powers u/s 62, 86(1)(a) and 86(1)(b) is totally misconceived. It is the legislative intension that power to fix tariff has been conferred on the Commission and once the tariff is fixed, the parties i.e., the generating companies and licensees who enter into agreement of purchase shall be bound by the said tariff and the Commission had on many occasions fixed either the generic tariff or project specific tariff for non-conventional energy projects, basing in which the licensees have concluded the PPAs.

d) that the respondents contention that it had not come forward to sell power to respondent is misplaced in as much as it has been all through requesting the purchase power on long term basis, however they preferred to purchase only under short term purchase during intermittent intervals when there was power shortage, no document has been placed before the Commission that the respondents have offered to purchase power in terms of above referred generic tariff by calling upon the petitioner to enter into long term PPA.

e) that the non-solar RPPO percentage (%) specified in Regulation No.2 of 2018 is yet to be achieved by the respondents and the percentage (%) specified in the Regulation is only a minimum percentage (%) and not

maximum.

f) that in terms of section 86 (1) (e), the Commission is required to promote generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person.

g) that the fixation of tariff is essentially legislative function to be exercised by the Commission and that the parties on their own cannot agree to any specific tariffs, therefore, it is only the Commission which alone is empowered to fix the same and definitely not by way of any mutual negotiations between the parties. Section 62 of the Electricity Act, 2003 empowers the Commission to determine tariff for supply of electricity by a generating company to a distribution licensee.

8. On the other hand, the contentions of the respondent are -

a) Section 61 of the Act, 2003 confers powers to the Commission to specify terms and conditions for determination of tariff, guided by several factors. However, the condition precedent under section 62 (1) and also sections 86 (1) (a) and 86 (1) (b) mandating the Commission to determine the tariff for supply of electricity by a generating company to a distribution licensee is that there shall be a PPA subsisting between the parties for determination of tariff. Since the respondent has no subsisting agreement with the petitioner as on date the prayer of the petitioner seeking determination of the project specific tariff is not justified.

b) that APERC in its order dated 22.06.2013, determined the fixed cost for first 10 years of operation for the RE projects (including bagasse based cogeneration projects). The order clearly stipulates that the tariff so determined is applicable for the RE projects which were existing as on 31.03.2004 and those commissioned between 01.04.2004 to 31.03.2009, except for those projects covered by negotiated PPAs. The respondents' project was commissioned in 2008 that is well within the period for which the erstwhile APERC determined tariff is available and as such, had the developer entered into PPA as per the requests of DISCOM at that time itself, then erstwhile APERC tariffs would have been continuing to their project. Further, the joint APERC for the States

of Telangana and Andhra Pradesh in its orders dated 05.08.2014, determined generic tariff i.e., fixed cost for 11th to 20th year of operation for the bagasse based co-generation projects.

c) after bifurcation of the State, this Commission vide Regulation No.1 of 2014 adopted all regulations, decisions, directions, orders issued by the erstwhile APERC as in existence as on the date of constitution of the Commission. Apparently, it drives the point that in spite of availability of tariff for the petitioner's project (which was commissioned during October 2008) and that the developer did not choose to enter into PPA with the respondent DISCOM and instead preferred to sell the power under short term basis as they found it more beneficial at that time rather than to enter PPA. In fact, this resulted in additional power purchase cost by the DISCOMs in open market.

d) that further under section 86 (1) (e) this Commission conferred with the powers to specify percentage of purchase of power from renewable sources, issued RPPO Regulation No. 2 of 2018 mandating TSDISCOMs for purchase from renewable energy sources a minimum quantity (in kWh) of electricity expressed as a percentage of its total consumption of energy.

e) determination of project specific tariff under section 62 (1) read with section 86 (1) (a) & (b) is also not justified since there is no subsisting PPA between DISCOM and the developer as such.

f) the tariff determined by erstwhile APERC vide orders dated 22.06.2013 (applicable for the projects commissioned upto 31.03.2009) can also be not made applicable to the respondent's project directly for the balance life period of the project i.e., upto 2028, since the developer did not come forward to enter into PPA at that time for sake of additional financial benefits and this action of the developer forced the DISCOM to purchase energy in the open market at higher prices.

g) the respondent prays to grant liberty to the DISCOM to take a decision on entering into PPA with the petitioner, duly taking into consideration the power requirement of the licensee and non-solar RPPO percentage (%) to be met and to negotiate a tariff lower than the erstwhile APERC tariffs (22.06.2013 & 05.08.2014 order) available since because of the

action of the developer not to enter the PPA after COD resulted in DISCOMs purchase power at higher prices from open market.

9. Section 86 (1) (b) of the Electricity Act, 2003 empowers the Commission to regulate electricity purchase and procurement process of distribution licensees including the price at which electricity shall be procured from the generating companies or licensees or from other sources through agreements for purchase of power for distribution and supply within the State. The petitioner's cogeneration power plant was commissioned on 20.10.2008 i.e. in FY 2008-09 and eventually there exists the Commission already determined generic tariffs to the cogeneration plants which were commissioned during the period FYs 2004-09 for first 10 years of operation and subsequently for 11th to 20th years of operation vide orders dated 22.06.2013 and 05.08.2014 respectively.

10. Section 62 of the Electricity Act, 2003 empowers the Commission to determine tariff for supply of electricity by a generating company to a distribution licensee. The petitioner has requested the Commission for determination project specific tariff, without having PPA with the respondent. In the present case, there is disagreement between the petitioner and the respondent on the basis to be considered for tariff, let alone the non-existence of the Power Purchase Agreement (PPA). Such disagreements can be ironed out only if a PPA is executed between the parties. Tariff determination in the present case would be a futile exercise as there is no mutual consent of the parties for sale and purchase of electricity, in the form of PPA. In view of the same, the Commission does not find it appropriate to accept the petitioner's request to determine the project specific tariff in the absence of PPA.

11. The Commission makes it amply clear that the above decision shall not be construed as an approval to the petitioner as eligible for project specific tariff determination at a later date or to the respondent to negotiate the tariffs with ceiling tariffs as that determined in the Order dated 22.06.2013 and 05.08.2014. The issue of tariff is left open at this stage.

12. Section 86 (1) (e) of the Electricity Act, 2003 mandates promotion of cogeneration and generation of electricity from renewable sources by providing suitable measures for connectivity with the grid and sale of electricity to any person,

and also to specify, for purchase of electricity from such sources a percentage of the total consumption of electricity in the area of a distribution license. The Commission, in fulfilment of this mandate, had issued the Regulation No.2 of 2018 wherein the RPPO had been specified for the Obligated Entities (including respondent), for the period from FY 2018-19 to FY 2021-22. The Commission finds merit in the petitioner's submission that RPPO specifies the minimum quantity (in kWh) of electricity to be purchased from NCE sources. However, the Commission does not find it prudent to delve into the petitioner's submission that the respondent has not fulfilled RPPO as neither material evidence has been placed by the petitioner nor the same is the subject matter of the present petition.

Issue No.2:

13. The respondent being a distribution licensee is empowered to purchase required energy for distribution and retail supply in accordance with the regulations, guidelines, directions issued by the Commission from time to time, which shall further be subject to approval of the Commission. A power purchase agreement (PPA) contains provisions related to commercial, technical, tariff and other related matters and therefore it is the exclusive domain of the respondent to take decisions on entering into PPA for availing the required power. In the petitioner's case, the Commission finds that there is a fundamental disagreement between the petitioner and respondent on the capacity itself. Essentially what emerges from the submission is that the parties are seeking adjudication, without even having PPA between themselves, which is unwarranted. In light of the above, the petitioner's request to direct the respondent to enter into PPA with the petitioner is beyond the regulatory purview of the Commission and hence the Commission does not accept the same. The petitioner is at liberty to approach the respondent for execution of PPA, if it intends to sell power from its bagasse based cogeneration power plant.

14. The petition is disposed of in the above terms.

This order is corrected and signed on this the 9th day of September, 2021.

Sd/-	**Sd/-**	**Sd/-**
(BANDARU KRISHNAIAH)	(M.D.MANOHAR RAJU)	(T.SRIRANGA RAO)
MEMBER	MEMBER	CHAIRMAN

//CERTIFIED COPY//

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DRAFT POWER PURCHASE AGREEMENT
BETWEEN
NORTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED
AND
M/s. Madhucon Sugar and Power Industries Limited

This Power Purchase Agreement ("Agreement") entered into on this the ____ day of December 2021, between the Northern Power Distribution Company of Telangana Limited, incorporated in accordance with the Andhra Pradesh Electricity Reform Act 1998 (Act No.30 of 1998), under the provisions of Companies Act, 1956, having its office at # 2-5-31/2, Vidyut Bhavan, Nakkalagutta, Hanamkonda, Warangal – 506 001, State of Telangana, India, (hereinafter referred to as the "DISCOM" or "TSDISCOM" or "TSNPDCL") which expression shall, unless repugnant to the context or meaning thereof, include its successors and assignees as the first party, and M/s. Madhucon Sugar and Power Industries Limited, having registered under the provisions of Companies Act, 1956, office at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District (hereinafter referred to as the 'Company') which expression shall, unless repugnant to the context or meaning thereof, include its successors and assignees as the second party.

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2. WHEREAS, the Company has set up the Renewable Energy Power Project i.e., the **24.2 MW Capacity Bagasse based Co-generation Power Project at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District** as detailed in Schedule-1 attached herewith, herein after called as the **Project**, with a proposal to generate and sell 19 MW to DISCOM during both Season, Off-Season, 1.7 MW for Auxiliary Consumption & 3.5 MW for Captive Consumption and the then State Nodal Agency NEDCAP i.e., Non-Conventional Energy Development Corporation of Andhra Pradesh Limited, has accorded approval to the said project in their proceedings No. NEDCAP/PD/2819/06 Dt.9th November2006 and the Company entered into an Agreement with NEDCAP on 9th November2006 to execute the Project, and copy whereof is attached herewith as Schedule-2 and Schedule- 3 respectively.

3. The Company shall fulfill the conditions stipulated in sanction letter and Agreement entered with NEDCAP and obtain extensions wherever required till the Project life is completed and also follow the above conditions for operation of the plant. In the event of cancellation of the Project allotted to the Company by NEDCAP for any reason, this Power Purchase Agreement with TSNPDCL will automatically gets cancelled.

4. The Company shall follow strictly the Ministry of New and Renewable Energy (MNRE), Government of India and any other State/Central Govt guidelines issued from time to time regarding usage of conventional fuel ie., coal along with the non-conventional fuel.

5. WHEREAS, it has been agreed that the Project is designed, engineered and constructed and operated by or on behalf of the Company with reasonable diligence, subject to all applicable Indian laws, Rules, Regulations and orders having the force of law including grid code issued by Central and State ERCs;

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6. This Agreement is enforceable subject to obtaining consent of Telangana State Electricity Regulatory Commission as per section 61, 62 &86 (1)(b)of the Electricity Act 2003 and as per section 21 of Andhra Pradesh Electricity Reform Act 1998 (Act No.30 of 1998) adopted by TSERC vide Regulation No. 1 of 2014.

7. The terms and conditions of the Agreement are subject to the provisions of the Electricity Act, 2003 as amended from time to time and also subject to relevant Regulations by the Telangana State Electricity Regulatory Commission (TSERC).

8. The Company shall not be eligible for obtaining renewable energy certificates (RECs), as per prevailing Regulations issued by CERC and TSERC from time to time, for energy generated from this Project and supplied to DISCOM under this Agreement. The DISCOM is entitled to meet the RPPO to the extent of energy received.

9. NOW, THEREFORE, in consideration of the foregoing premises and their mutual covenants herein, and for other valuable consideration, the receipt and sufficiency of which are acknowledged, the parties hereto, intending to be legally bound hereby agree as follows:

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ARTICLE 1
DEFINITIONS

Unless the context otherwise expressed in this Agreement, the following terms shall have the meanings set forth herein below. Defined terms of singular number shall include the plural and vice-versa.

1.1 **"Act"** means the Electricity Act, 2003 and includes any modifications, amendments and substitution from time to time;

1.2 **"Agreement"** means this Power Purchase Agreement (PPA), including the articles, schedules, amendments, modifications and supplements made in writing by the parties from time to time.

1.3 **"Appropriate Commission"** means TSERC or CERC under the Electricity Act, 2003 as the case may be.

1.4 **"Billing Date"** means the fifth (5th) day after the Meter Reading Date.

1.5 **"Billing Month"** means the period commencing from 25th of the calendar month and ending on the 24th of the next calendar month.

1.6 **"CERC"** means the Central Electricity Regulatory Commission formed under Section 76 of the Electricity Act, 2003.

1.7 **"Change in Law"** means any change or amendment to the provisions of electricity law in force, regulations, directions, notifications issued by the competent authorities and Government of India (GoI), Government of Telangana State (GoTS) from time to time.

1.8 **"Commercial Operation Date (COD)"** means, with respect to each Generating unit, the date on which such Generating unit is declared by the Company to be operational in the presence of TSTRANSCO/TSDISCOM authorized representatives, provided that the Company shall not declare a Generating unit to be operational until such Generating unit has completed its Performance Acceptance Test as per standards prescribed in coordination with TSDISCOM/TSTRANSCO/TNREDCL authorities.

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The Commercial Date of Operation of this 24.2 MW Bagasse based Co-generation power project has been declared on 20.10.2008.

Explanation: In respect of Renewable Energy based power projects, the date of Commercial Operation Date of the first unit of the project will be treated as the commercial Operation Date of the Project, since Ministry of New and Renewable Energy , GoI has not specified any Guidelines for declaration of the Commercial Operation Date (COD).

1.9 **"Contracted Capacity"** means **19 MW** contracted with DISCOM for supply by the Company to the DISCOM at the Interconnection Point from the Project and same shall not be more than the Installed Capacity. Contracted Capacity shall be in MW measured in Alternate Current (AC) terms and shall not change during the tenure of this Agreement.

1.10 **"Delivered Energy"** means with respect to any Billing Month, the kilo watt hours (kWh) of electrical energy generated by the Project and delivered to TSNPDCL at the Interconnection Point, as measured by the energy meters at the Interconnection Point during that Billing Month at the designated substation of TSTRANSCO or the DISCOM, viz., 132/33 KV Kusumanchi SS.

Explanation 1: For removal of doubts, the Delivered Energy, excludes all energy consumed in the Project, by the main plant and equipment, lighting and other loads of the Project from the energy generated and as recorded by the energy meter at Interconnection Point.

Explanation 2: The Delivered Energy in a Billing Month shall be limited to the energy calculated based on the Contracted Capacity in KW multiplied with number of hours and fraction thereof, the Project is in operation during that Billing Month.

Explanation 3: The Delivered Energy shall be purchased by the DISCOM at a tariff to be determined by TSERC for that year stipulated in Article 12 of this Agreement.

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1.11 **"Delivery Point"** means the Interconnection Point at which the power plant delivers power to the TSTRANSCO or DISCOM substation, viz., 132/33 KV Kusumanchi SS.

1.12 **"Due Date of Payment"** means the date on which the amount payable by the DISCOM to the Company hereunder for Delivered Energy, if any, supplied during a Billing Month becomes due for payment, which date shall be thirty (30) days from the date of invoice. If the bill is received after 5 days of metering date in a particular month, the due date shall be reckoned from the date of receipt of invoice. In the case of any supplemental or other bill or claim, if any, the due date of payment shall be thirty (30) days from the date of the presentation of such bill or claim to the designated officer of the TSDISCOM/TSTRANSCO.

1.13 **"Effective Date"** means the date of execution of this Power Purchase Agreement (PPA) by both the parties;

1.14 **"Financial Year"** means with respect to the initial Financial Year, the period beginning on the Commercial Operation Date and ending at 12.00 midnight on the following March 31; Each successive Financial Year shall begin on April 1st and end on the following March 31st, except that the final Financial Year shall end on the date of expiry of the term or on termination of this Agreement as per the provisions contained therein.

1.15 **"Grid Code"** means the Indian Electricity Grid Code issued by CERC and amended or modified from time to time and the TS Grid Code issued by TSERC as modified and amended from time to time. In case of any conflict between the Indian Electricity Grid Code and TS Grid Code, the provisions of TS Grid Code shall prevail.

1.16 **"Installed Capacity"** means the total rated capacity in mega-watts of all the units installed.

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1.17 **"Interconnection Facilities"** means all the equipment and facilities, including, but not limited to, all metering facilities, 0.2s class CTs, 0.2 class PTs, switch gear, substation facilities, transmission lines and related infrastructure, to be installed by the Company by laying independent line to the designated Substation of TSTRANSCO/TSDISCOM at the voltage specified in Article 1.20 at the Company's expense from time to time throughout the term of this Agreement, necessary to enable the TSDISCOM/TSTRANSCO to economically, reliably and safely receive Delivered Energy from the Project in accordance with the terms of this Agreement.

Explanation 1: The Company based on Renewable Energy Projects viz; Biomass, Bagasse, Mini Hydel and Municipal Solid Waste, RDF, Industrial Waste based projects, etc., have to bear the entire expenditure of interconnection facilities for power evacuation as per the sanctioned estimate by the respective field officers.

1.18 **"Interconnection Point"** means the point or points where the Project and the TSTRANSCO/TSDISCOM's grid system are interconnected at designated TSTRANSCO/ TSDISCOM sub-station. The metering for the Project will be provided at the interconnection point as per Article 4.1.

Explanation: In case of Biomass, Bagasse based Power Projects, Power Projects based on Waste to Energy and independent Mini Hydel/Wind power projects the Interconnection Point will be at designated TSTRANSCO/ TSDISCOM sub-station, based on voltage level of evacuation.

1.19 **"Interconnection Substation"** means the Interconnection substation agreed in the PPA and the DISCOM for connecting the project to the state transmission or distribution system.

1.20 **"Injection voltage or voltage of delivery"** means the voltage at which the Company injects the power at the Interconnection point.

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1.21 **"Metering Date"** means mid-day (i.e., noon) of the 24th (twenty-fourth) day of each calendar month, at the Interconnection Point.

1.22 **"Plant Load Factor (PLF)"** means the ratio of total kWh (units) of power generated by plant in a tariff year and contracted capacity in kW multiplied with number of hours in the same tariff year.

1.23 **"Project"** means the **24.2 MW Capacity Bagasse based Co-generation Power Project at Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District,** Telangana, as detailed in Schedule-1 attached herewith, entrusted to the Company for construction and operation as detailed in Agreement entered into with NEDCAP in composite state as shown in Schedule-3 attached herewith.

1.24 **"Prudent Utility Practices"** means those practices, methods, techniques and standards, that are generally accepted for use in electric utility industries taking into account conditions in India, and commonly used in prudent electric utility engineering and operations to design, engineer, construct, test, operate and maintain equipment lawfully, safely, efficiently and economically as applicable to power stations of the size, service and type of the Project, and that generally conform to the manufacturers' operation and maintenance guidelines.

1.25 **"Scheduled Commercial Operation Date (SCOD) or Scheduled date of Commercial Operations"** means the date whereupon the project is synchronised to start injecting power from the power project to the Delivery Point. The COD of the project was declared on 20.10.2008.

1.26 **"SERC"** means the Telangana State Electricity Regulatory Commission of the state constituted under Section-82 of the Electricity Act, 2003 or its successors, and includes a Joint Commission constituted under sub-section (1) of Section 83 of the Electricity Act 2003;

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1.27 **"SLDC"** means the State Load Dispatch Center as notified by the Telangana State Government under the provisions of the Electricity Act, 2003.

1.28 **"System Emergency"** means a condition affecting the TSTRANSCO/ TSDISCOM's electrical system, which threatens the safe and reliable operation of such system or which is likely to result in the disruption of safe, adequate and continuous electric supply by the TSTRANSCO/TSDISCOM, or which endangers life or property, which condition is affected or aggravated by the continued delivery of Delivered Energy from the Project.

1.29 **"Tariff"** shall have the same meaning as ascribed in Clause 2.2 of this Agreement.

1.30 **"Unit"** When used in relation to the generating equipment, means one set of turbine generator and auxiliary equipment, and facilities forming part of the Project and when used in relation to electrical energy, means kilo watt hour (kWh).

1.31 **"Voltage of Delivery"** means the voltage at which the electrical energy generated by the project is required to be delivered to the TSTRANSCO/DISCOM at the Interconnection Point and the Voltage of Delivery is as detailed below.

For Bagasse based Co-generation power projects :

Capacity of the plant	**Specified voltage level for interfacing With TSTRANSCO/DISCOM grid**
Upto 1500 KVA	11 KV
From 1501 KVA to 7500 KVA	33 KV
Above 7500KVA	132KV

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1.32 **"Tariff Year"** means each period of 12 months commencing from the Commercial Operation Date of the Project. The last Tariff Year of this Agreement shall end on the date of expiry of this Agreement.

1.33 **"Term of the Agreement"** shall have the same meaning as provided for in Article 8 of this Agreement.

1.34 **"TSTRANSCO"** means Transmission Corporation of Telangana Limited, incorporated under the Companies Act, 2013.

All other words and expressions used herein and not defined herein but defined in the Electricity Act, 2003, Electricity Duty Act 1939 and its subsequent amendments and AP Electricity Reform Act 1998, shall have the meanings respectively assigned to them in the said Acts and applicable State and Central regulations on grid code and others from time to time.

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ARTICLE 2

PURCHASE OF DELIVERED ENERGY AND TARIFF

2.1 All the Delivered Energy at the interconnection point for sale to DISCOM (net capacity) will be purchased at the tariff provided for in Article 2.2 from the effective date of PPA, subject to the consent to be accorded by TSERC. Title to Delivered Energy purchased shall pass from the Company to TSNPDCL at the Interconnection Point ie., 132/33 KV Kusumanchi SS.

2.2 The Company shall be paid the tariff for the energy delivered at the interconnection point for sale to DISCOM **at the tariff to be determined by TSERC upon filing of Petition by the Company,** specified in Schedule I A. No tariff will be paid for the energy delivered at the interconnection point beyond contracted capacity ie., 19 MW.

2.3 The tariff shall be inclusive of all taxes, duties and levies as imposed by State or Central Governments.

2.4 All future increase in Taxes, Duties and Levies on energy generated is to be borne by the Company.

2.5 Whereas in any Billing month, the Gross energy and demand supplied by TSNPDCL to the Company as a bilateral arrangement to maintain the auxiliaries in the power plant in situation of non-generation of power plant shall be billed by the TSNPDCL as per the explanations given and the Company shall pay TSNPDCL for such energy and demand supplies. Further, since the Company's power house is running in parallel with TSNPDCL network, the Company has to pay Grid Support Charges as decided by Commission from time to time for grid support given to the process unit in the premises.

Explanation 1 : The generating plant viz., Bagasse based cogeneration plant use the power generated for their captive purpose in the same premises and export surplus power to grid.

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Explanation 2 : If the Company is not willing to avail power from TSNPDCL for their processing unit in the same premises during outages of their power plant by providing suitable interlocking arrangements between power plant and processing unit.

Explanation 3 : If the Company desires to draw power from Grid for starting and maintenance purpose of the generating station through the dedicated line intended for export of power, the following conditions will apply :

(i) The Company has to declare the load requirement for starting and maintenance purpose of the power plant and agreed by TSNPDCL.

(ii) The Company will not have separate HT Service Connection number, HT agreement.

(iii) The energy supplied by the TSDISCOM to the Company, shall be billed by the TSDISCOM and the Company shall pay the TSDISCOM for such electricity supplies, at the then-effective TSERC applicable tariff to High tension Category-I Consumers as determined by TSERC from time to time . For this purpose, the maximum demand recorded during such periods in a billing cycle shall be considered. if in shut down period, the billing demand would be 80% of auxiliary consumption or recorded maximum demand whichever is more.

a) Billing Energy: 50 units per KVA on billing demand or actual units recorded whichever is more.

b) For the purpose of billing TOD tariff, TOD compatible meters may be installed.

c) However, the minimum HT-I category billing shall be made applicable to the company in a billing cycle that may be decided by Hon'ble TSERC from time to time, based on the voltage of the generator.

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ARTICLE 3

INTERCONNECTION FACILITIES, SYNCHRONIZATION, COMMISSIONING AND COMMERCIAL OPERATION

3.1 Upon receipt of a requisition from the company, TSTRANSCO or DISCOM shall prepare an estimate of cost for arranging the Interconnection Facilities for power evacuation at the Voltage of Delivery, based on requirements. The company has to bear the entire cost of the Interconnection Facilities as per the approved estimate made by TSTRANSCO or DISCOM and also take care of right of way issues.

Provided that the TSTRANSCO or DISCOM may allow the company to execute the Interconnection Facilities for power evacuation as per the approved estimate at its discretion duly collecting the supervision charges as per the procedures in vogue.

In case the project connects to a 33 / 11 kV or EHT interconnection substation where available capacity is subject to bay extension and bay extension is not feasible, then the company shall procure land and undertake bay extension at its own cost.

3.2 The Company/Developer shall own, operate and maintain Interconnection Facilities from Project to grid sub-station from time to time and shall bear the necessary expenditure. The maintenance work of the connected bay together with equipment at the grid substation has to be done in coordination with the TSTRANSCO and DISCOM personnel. Where TSTRANSCO or DISCOM carries out the maintenance work, the developer shall pay the expenses to TSTRANSCO or DISCOM as applicable.

3.3 TSDISCOM has been vested with the right to add any additional loads on the feeder without detrimental to the interests of the existing generating company.

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3.4 Any modifications or procedures or changes in arranging interconnection facilities for power evacuations rests with GoTS/ TSDISCOM/TSTRANSCO.

3.5 The company shall allow entry to the site of the Project free of all encumbrances at all times during the term of the agreement to the personnel of TSTRANSCO or DISCOM for inspection and verification of the works being carried out by the company at the site of the Project.

3.6 The TSTRANSCO or DISCOM or its representative may verify the construction works or operation of the Project being carried out by the company and if it is found that the construction works or operation of the Project is not as per the Prudent Utility Practices, it may seek clarifications from the Company or require the works to be stopped or to comply with their instructions.

3.7 The company shall give a notice in writing to the SLDC and DISCOM, at least (15) days before the date on which it intends to synchronize the Project to the grid system.

Synchronization:

3.8 The Project may be synchronized by the company to the grid system when it complies with all the connectivity conditions specified in the Grid Code in force.

3.9 The synchronization equipment shall be installed by the company at its generation facility of the project at its own cost. The company shall synchronize its system with the grid system only after the approval of synchronization scheme under the supervision of the concerned authorities of the grid system.

3.10 The company shall immediately after synchronization/ tripping of generator, inform the sub-station of the grid system to which the Project is electrically connected in accordance with the Grid Code in force.

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3.11 The company shall commission the Project within timelines specified in this agreement from the effective date for projects connected and any delay in commissioning of the project shall be subject to the penalties as stipulated. After commissioning of the project, the Company shall invariably register the project with SLDC.

3.12 The company may undertake the commissioning of the Project in phases and provisions of Clauses 3.8 to 3.10 and said clauses shall apply mutatis - mutandis for generating units commissioned in phases. However, prior to the completion of the synchronization of the entire project, the Company shall obtain certification for full contracted capacity from the competent authority duly demonstrating the full commissioning of the contracted capacity.

3.13 The company shall ensure the connectivity standards as per technical norms of TSTRANSCO/TSDISCOMs

3.14 **The Commercial Date of Operation of this 24.2 MW Bagasse based Co-generation power project was declared on 20.10.2008, all the technical requirements with regard to provisions related to interconnection facilities are to be ensured by DISCOM /Company.**

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ARTICLE 4

METERING AND PROTECTION

4.1 The Company shall install main meters and check meter of static type 0.2s class accuracy having both ABT & Trivector features and online data transfer facility (V-SAT) at the inter-connection point and the Company shall also install stand-by meter of static type at the same point and of the same accuracy. The connected metering CTs and PTs shall be of 0.2s and 0.2 class of accuracy as per the norms specified in the T.OO (CE-Construction-2) Ms.No.488, Dt:17.03.2012, metering code by CEA or norms of TSERC and any changes made applicable from time to time. The main meters, check meters and stand-by meter shall each consist of a pair of export and import meters with facility for recording meter readings using Meter Recording Instrument and configured with ToD software compatible to TSTRANSCO EBC data base. For the purpose of uniformity the Company shall follow metering specification as developed by TSDISCOM.

4.2 All the meters required to be installed pursuant to Article 4.1 and above shall be jointly inspected and sealed on behalf of both parties, i.e TSDISCOM & Company and shall not be interfered with, tested or checked except in the presence of representatives of both parties.

4.3 Though all the reading of Main, Check and Standby meters have to be taken, the meter readings from the main meters will form the basis of billing. If any of the meters required to be installed pursuant to Article 4.1 above are found to be registering inaccurately, the affected meter will be replaced immediately.

4.4 Wherein the yearly meter check indicates an error in one of the main meter/meter(s) beyond the limits of errors, for such meter(s), but no such error is indicated in the corresponding check meter/meters, billing for the month will be done on the basis of the reading on the check meter/meters and the main meter will be replaced immediately. -

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4.5 If during the yearly test checks, both the main meters and the corresponding check meters are found to be beyond permissible limits of error, Standby meters readings shall be taken to in consideration and both Main and check meters shall be immediately replaced. If all the meters during yearly checkings found to be faulty, and the correction applied to the consumption registered by the main meter to arrive at the correct delivered energy for billing purposes for the period of the one month upto the time of such test check, computation of delivered energy for the period thereafter till the next monthly meter reading shall be as per the replaced main meter. Alternatively, the energy will be computed on a mutually agreeable basis for that period of defect.

4.6 Corrections in delivered energy billing, whenever necessary, shall be applicable to the period between the previous monthly meter reading and the date and time of the test calibration in the current month when the error is observed and this correction shall be for the full value of the absolute error. For the purpose of determining the correction to be applied to any meter registering inaccurately, the meter shall be tested under conditions simulating 100, 50, 20 and 10 percent load at unity power factor and 0.5 power factor. Of these eight values, the error at the load and power factor nearest to the average monthly load served at the Interconnection Point during the applicable period shall be taken as the error to be applied for correction.

4.7 The billing meters (main, check and standby) shall be tested and calibrated utilizing a Standard Meter. The Standard Meter shall be calibrated once in every year at the approved Laboratory by Government of India/Government of Telangana, as per Terms and Conditions of supply.

4.8 All the billing meters (main, check and standby) tests shall be jointly conducted by the authorized representatives of both parties and the results and correction so arrived at mutually will be applicable and binding on both the parties.

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4.9 On the Metering Date, each month meter readings shall be taken (and an acknowledgement thereof signed) by the authorized representatives of both parties.

4.10 Within six (6) months, following the execution of this Agreement, the Company and the TSDISCOM shall mutually agree to technical and performance specifications (including, but not limited to, the metering configuration for the Project) concerning the design and operation of the facilities required to be installed by the Company in order for the Company to operate in parallel with the TSTRANSCO/DISCOM's grid. Thereafter, any change in such specifications shall be subject to mutual agreement of the parties.

4.11 The Project shall be operated and maintained in accordance with good and generally prudent accepted utility standards with respect to synchronizing, voltage, frequency and reactive power control.

4.12 Voltage regulation shall be such as to enable continued paralleling and synchronisation with the grid voltage at the point of interconnection.

4.13 The equipment of the Company shall be designed for fluctuations in the frequency within limits of 49.70 cycles per second to 50.10 cycles per second of the standard frequency of 50 cycles per second.

4.14 The Company shall ensure that the power factor of the power delivered to the TSTRANSCO/TSDISCOM is maintained at or above the Minimum Power Factor as per Tariff Notification, or otherwise pay Surcharge as per Tariff Notification in force.

4.15 Any change in rupturing capacity of switch-gear, settings of the relays, etc., shall be subject to approval of the TSTRANSCO/TSDISCOM as the case may be.

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4.16 As the Project's generator may carry fault currents that may occur on the TSTRANSCO/DISCOM's grid, the Company shall provide adequate generator and switchgear protection against such faults. The TSDISCOM is not responsible for damage, if any, caused to the Project's generator and allied equipment during parallel operation of the generator with the TSTRANSCO/DISCOM's grid.

4.17 The Company shall make a good faith effort to operate the Project in such a manner as to avoid fluctuations and disturbances to the TSTRANSCO / DISCOM's grid due to parallel operation with the grid.

4.18 The Company shall control and operate the Project. The TSTRANSCO/ TSDISCOM shall only be entitled to request the Company to reduce electric power and energy deliveries from the Project during a System Emergency, and then only to the extent that in the TSTRANSCO/ TSDISCOM's reasonable judgment such a reduction will alleviate the emergency. The TSTRANSCO/TSDISCOM shall give the Company as much advance notice of such a reduction as is practicable under the circumstances and shall use all reasonable efforts to remedy the circumstance causing the reduction as soon as possible. Any reduction required of the Company hereunder shall be implemented in a manner consistent with safe operating procedures.

4.19 The Company has to establish Protection System, Online data Scheme, its allied equipment to conform with grid code from time to time. Also, the Protection System shall conform with the TRANSCO/DISCOM norms.

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ARTICLE-5

CHANGE IN LAW

In this Article, the following terms shall have the following meanings:

5.1 "Change in Law" means the occurrence of any of the following events after the date on which PPA to be signed, resulting into any additional recurring/non-recurring expenditure by the Company or any income to the Company, the enactment, coming into effect, adoption, promulgation, amendment, modification or repeal (without re-enactment or consolidation) in India, of any Law, including rules and regulations framed pursuant to such Law and any notifications issued thereunder.

(a) change in the interpretation or application of any Law by any Indian Governmental Instrumentality having the legal power to interpret or apply such Law, or any Competent Court of Law; □the imposition of a requirement for obtaining any Consents, Clearances and Permits which was not required earlier;

(b) a change in the terms and conditions prescribed for obtaining any Consents, Clearances and Permits or the inclusion of any new terms or conditions for obtaining such Consents, Clearances and Permits; except due to any default of the Company;

(c) any change in tax or introduction of any tax made applicable for supply of power by the Company as per the terms of this Agreement but shall not include:

(i) any change in any withholding tax on income or dividends distributed to the shareholders of the Company, or

(ii) change in respect of UI Charges or frequency intervals by an Appropriate Commission or

(iii) any change on account of regulatory measures by the Appropriate Commission including calculation of Availability.

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ARTICLE 6

BILLING AND PAYMENT

6.1 For Delivered Energy purchased, the Company shall furnish a bill to the TSDISCOM calculated at the rate provided for in Article 2.2 (to be decided by TSERC), in such form as may be mutually agreed between the TSDISCOM and the Company, for the billing month on or before the 5th working day following the metering date.

6.2 Any payment made beyond the due date of payment, TSDISCOM shall pay interest at a rate of 10% per annum as per existing nationalized bank rate and in case this rate is reduced, such reduced rate is applicable from the date of reduction.

6.3 The TSDISCOM shall make payment for the bills on monthly basis as per Article 6.1, by opening a revolving Letter of Credit for a minimum period of one year in favour of the Company.

6.4 **Letter of Credit:** Not later than 30 days prior to the Scheduled COD of the first Generating unit, TSDISCOM shall cause to be in effect an irrevocable revolving Letter of Credit issued in favour of the Company by a Scheduled Bank (the Letter of Credit). Each Letter of Credit shall

a) on the date it is issued, have a term of one year;

b) be payable upon the execution and presentation by an Officer of the Company of a sight draft to issuer of such Letter of Credit supported by a Meter Reading Statement accepted and Signed both the Parties or a certification from the Company that the TSDISCOM failed to sign the Meter Reading Statements within 5 days of the Metering date or that a supplemental bill has been issued and remains unpaid until the due date of payment;

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c) provided that the Company shall have the right to draw upon such Letter of Credit not withstanding any failure by the TSNPDCL to reimburse the issue therefore for any draw down made under, and

d) not less than 30 days prior to the expiration of any Letter of Credit, the TSDISCOM shall provide a new or replacement Letter of Credit. Each monthly bill or supplemental bill shall be presented at the said Scheduled Bank for payment under the Letter of Credit and shall become payable there under. The Opening Charges for Letter of Credit (L/C) and Letter of Credit (L/C) negotiation charges will be borne by the beneficiary i.e. Company.

e) The TSDISCOM is entitled for a discount of 1% on exported energy, if the payment is made within the due date.

6.5 **Direct Payment:** Notwithstanding the fact that a Letter of Credit has been opened, in the event that through the actions of TSDISCOM, the Company is not able to make a draw upon the Letter of Credit for the full amount of any bill, the Company shall have the right to require in writing the TSDISCOM to make direct payment of any bill by cheque or otherwise on or before the due date of payment by delivering such requisition to the TSDISCOM on or prior to the due date of payment of such bill requiring payment in the foregoing manner. Without prejudice to the right of the Company to draw upon the Letter of Credit if payment is not received in full, the TSDISCOM shall have the right to make direct payment by cheque or otherwise of any bill as such, within 30 days after the date of its presentation to the designated Officer of the TSDISCOM, the Company shall receive payment in full for such bill. When either such direct payment is made, the Company shall not present the same bill to the Scheduled Bank for payment against the Letter of Credit

6.6 **Billing disputes:** The TSDISCOM shall pay the bills of the Company promptly subject to the provisions in Article 2, and in accordance with tariff determined by TSERC.

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The TSDISCOM shall notify the Company in respect of any disallowed amount on account of any dispute as to all or any portion of the bill. The Company shall immediately take up issue with all relevant information with TSDISCOM which shall be rectified by the TSDISCOM, if found satisfactory. Otherwise notify its (TSDISCOM's) rejection of the disputed claim within reasonable time with reasons recorded in writing therefor. The dispute may also be decided by mutual agreement. If the resolution of any dispute requires the TSDISCOM to reimburse the Company, the amount to be reimbursed shall bear interest rate of 10% per annum as per existing nationalized bank rate and in case this rate is reduced, such reduced rate is applicable from the date of reduction.

6.7 All payments by the TSDISCOM to the Company hereunder shall be made to such address as may be designated by the Company to the TSDISCOM in writing from time to time.

Address : M/s. Madhucon Sugar and Power Industries Limited,
Reg. Office & Factory: Rajeswarapuram,
Ammagudem post, Nelakondapally Mandal,
Khammam District – 507160.

Telephone No. : +91-8742 -275796/275521.

Fax No. : +91-8742-275644

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ARTICLE 7
UNDERTAKING

7.1 The Company shall be responsible:

(i) For the proper maintenance of the project in accordance with established prudent utility practices.

(ii) For the operation, maintenance, overhaul of the plant, equipment, works, switch yard and transmission lines and equipment up to the Interconnection Point of the project in close coordination with the TSDISCOM.

(iii) For making all payments on account of any taxes, cesses, duties, or levies imposed by any Government or competent statutory authority on the land, equipment, material or works of the project or on the energy generated or consumed by the project or the Company or on the income or assets of the Company.

(iv) For obtaining necessary approvals, permits or licenses for operation of the project and sale of energy to TSTRANSCO/TSDISCOM there from under the provision of the relevant laws.

7.2 The TSDISCOM agrees:

(i) to make all reasonable efforts for making arrangements for evacuation of power from the project to be completed prior to the Commercial Operation Date of the Project subject to Article 3.

(ii) for purchase of Delivered Energy from the project as per Article 2.2.

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ARTICLE 8
DURATION OF AGREEMENT

This Agreement shall be effective upon its execution of PPA and delivery thereof between parties hereto and shall continue in force until the twentieth (20th) anniversary that is for a life period of twenty years from the Commercial Operation Date (COD). The agreement is valid till 19.10.2028. This Agreement may be renewed for such further period of time and on such terms and conditions as may be mutually agreed upon by the parties, 90 days prior to the expiry of the said period of twenty years, subject to the consent of the TSERC. Any and all incentives/conditions envisaged in the Articles of this Agreement are subject to modification from time to time as per the directions of TSERC, Government of Telangana and TSDISCOM.

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ARTICLE 9

NOTICES

9.1 Except as otherwise expressly provided in this Agreement, all notices or other communications which are required or permitted hereunder shall be in writing and sufficient, if delivered personally or sent by registered post or certified mail, telecopy, telex addressed as follows:

If to the Company:

Attention : M/s. Madhucon Sugar and Power Industries Limited,
Reg. Office & Factory: Rajeswarapuram,
Ammagudem post, Nelakondapally Mandal,
Khammam District – 507160.

Telephone No. : +91-8742 -275796/275521

Fax No. : +91-8742-275644

E-mail : info@madhuconsugars.com

If to the TSDISCOM :

Attention : Northern Power Distribution Company of Telangana Limited

Telephone/Moblie No. : 9491044275

E-mail : cgmir@tsnpdcl.in

9.2 All notices or communications given by telecopy, telex etc shall be confirmed by depositing a copy of the same in the post office in an envelope properly addressed to the appropriate party for delivery by registered or certified mail. All notices shall be deemed delivered upon receipt, including notices given by telecopy, telex regardless of the date the confirmation of such notice is received.

9.3 Any party may by written notice change the address and/or addresses to which such notices and communications to it are to be delivered or mailed.

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ARTICLE 10

SPECIAL PROVISIONS

10.1 The waiver of any breach or failure to enforce any of the terms, covenants or conditions of this Agreement shall not in any way affect, limit, modify or waive the future enforcement of such terms, covenants or conditions.

10.2 No oral or written modification of this Agreement either before or after its execution shall be of any force or effect unless such modification is in writing and signed by the duly authorized representatives of the Company and the TSDISCOM, subject to the condition that any further modification of the Agreement shall be done only with the prior approval of Telangana State Electricity Regulatory Commission. However, the amendments to the Agreement as per the respective orders of TSERC from time to time shall be carried out. All the conditions mentioned in the Agreement are with the consent of TSERC.

10.3 However, in respect of power evacuation, the voltage levels for interfacing with TSTRANSCO/DISCOM's Grid will be as per Article 1.33. The costs of interconnection facilities have to be borne by the Company as per Article 3.

10.4 The invalidity or unenforceability for any reason of any provision of this Agreement shall not prejudice or affect the validity or enforceability of any other provision of this Agreement.

10.5 The failure of any party to insist in one or more instances upon the strict performance of any of the provisions of this Agreement or to take advantage of any of its rights hereunder shall not be construed as a waiver of any such provisions or relinquishment of any such rights but the same shall continue in full force and effect.

10.6 Unless the context otherwise requires, every arrangement, procedure or any other matter which is, under any of the provisions of this Agreement, required to be mutually agreed upon between the parties, shall be

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concluded by a written Agreement between the parties not later than the date specified in the concerned clause of this Agreement, subject to the consent of the TSERC.

10.7 This Agreement, including Schedule 1, 2 & 3 attached hereto, constitute the entire Agreement between the parties with respect to the subject matter hereof, and there are no oral or written understandings, representations or commitments of any kind, express or implied, not set forth herein.

10.8 The headings contained herein are included solely for the convenience of the parties and are not to be used as a basis for interpreting the various sections of this Agreement.

10.9 The parties each agree to act in good faith in implementing the terms and conditions of this Agreement and in carrying out their respective obligations hereunder.

10.10 **Assignment and Financing:** Neither party shall assign this Agreement or any portion thereof to any third party without the prior written consent of the other party which consent shall not be unreasonably withheld.

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ARTICLE 11

FORCE MAJEURE

11.1 **Definition of Force Majeure:**

(a) "Force Majeure" shall mean any event or circumstance or combination of events or circumstances that materially and adversely affects the performance by either party (the "Affected Party") of its obligations pursuant to the terms of this Agreement (including by preventing, hindering or delaying such performance), but only if and to the extent that such events and circumstances are not within the Affected Party's reasonable control and were not reasonably foreseeable and the effects of which the Affected Party could not have prevented by Prudent Utility Practices or, in the case of construction activities, by the exercise of reasonable skill and care. Any events or circumstances meeting the description of Force Majeure which have the same effect upon the performance of any of the Company Power Project setup and which therefore materially and adversely affect the ability of the Project or, as the case may be, the DISCOM to perform its obligations hereunder shall constitute Force Majeure with respect to the Company or the DISCOM, respectively.

(b) Force Majeure circumstances and events shall include the following events to the extent, that they or their consequences satisfy the above requirements.

(i) Non Political Events such as acts of GOD including but not limited to any storm, flood, Drought, Lightning, Earthquake or other natural calamities, fire, accident, explosion, strikes, labour difficulties, epidemic, plague or quarantine, air crash, shipwreck, train wrecks or failure ("Non Political Events").

(ii) Indirect Political Events such as acts of war sabotage, terrorism or act of public enemy, blockades, embargoes, civil disturbance, revolution or radioactive contamination ("Indirect Political Events").

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(iii) Direct Political Events such as any Government Agencies' or the DISCOM's unlawful or discriminatory delay, modification, denial or refusal to grant or renew, or any revocation of any required permit or Change in Law (Direct Political Events).

(iv) In the event of a delay in COD due to:

(a) Force Majeure Events affecting the Company;

or

(b) DISCOM Event of Default as defined in 11.2, the scheduled COD shall be deferred, for a reasonable period but not less than 'day-for-day' basis subject to a maximum period of 12 months, to permit the Company or to overcome the effects of the Force Majeure events affecting the Company or DISCOM, or till such time such event of default is rectified by the Company or the DISCOM, whichever is earlier. Provided further that, the validity of Performance Bank Guarantee shall be extended suitably covering the extended period.

11.2 DISCOM Event of Default

11.2.1 The occurrence and the continuation of any of the following events, unless any such event occurs as a result of a Force Majeure event or a breach by the Company of its obligations under this Agreement, shall constitute the Event of Default on the part of defaulting DISCOM ("DISCOM Event of Default"):

(i) DISCOM fails to pay (with respect to payments due to the Company according to Article 2), for a period of ninety (90) days after the Due Date of Payment and the Company is unable to recover the amount outstanding through the Letter of Credit, or

(ii) DISCOM repudiates this Agreement and does not rectify such a breach within a period of thirty (30) days from a notice in writing from the Company in this regard; or

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(iii) except where due to any Company's failure to comply with its obligations, DISCOM is in material breach of any of its obligations pursuant to this Agreement, and such material breach is not rectified by DISCOM within thirty (30) days of receipt of notice in writing in this regard from the Company to DISCOM; or

(iv) if:-

DISCOM becomes voluntarily or involuntarily the subject of any bankruptcy or insolvency or winding up proceedings and such proceedings remain uncontested for a period of thirty (30) days, or any winding up or bankruptcy or insolvency order is passed against DISCOM, or

DISCOM goes into liquidation or dissolution or a receiver or any similar officer is appointed over all or substantially all of its assets or official liquidator is appointed to manage its affairs, pursuant to law,

Provided that it shall not constitute a DISCOM Event of Default, where such dissolution or liquidation of DISCOM or DISCOM is for the purpose of a merger, consolidation or reorganization and where the resulting entity has the financial standing to perform its obligations under this Agreement and has creditworthiness similar to DISCOM and expressly assumes all obligations of DISCOM and is in a position to perform them; or

(v) If DISCOM is subject to any of the above defaults and DISCOM does not designate another DISCOM for purchase of power; or

(vi) Occurrence of any other event which is specified in this Agreement to be a material breach or default of DISCOM.

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ARTICLE 12

DATA ACQUISITION SYSTEM & DAY-AHEAD SCHEDULES

12.1 The company shall establish Data Acquisition System (DAS) with necessary communication facilities in line with TSTRANSCO procedures and ensure that the online data shall be completely integrated with State Load Dispatch Centre (SLDC) from the effective date of PPA. The company shall furnish Block-wise availability on day ahead basis to SLDC and abide by the scheduling procedures as per the orders, regulations, policies, Suo-motu orders, directions issued by the Indian Grid Code and State Grid Code, CEA, MNRE any other statutory Government agency etc., from time to time.

12.2 The company shall abide by the revision of declared capacity by the generator having two part tariff and requisition by beneficiary for the remaining period of the day shall be permitted with advance notice. Revised schedules/declared capacity in such cases shall become effective from the 4th time block, counting the time block in which the request for revision has been received to be the first one.

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ARTICLE 13
OTHER PROVISIONS

13.1 Incentives:

Any incentives, including but not limited to interest rates, Government grants, generation based incentives shall be passed on the Distribution Company (TSNPDCL).

13.2 Scheduling and Despatch :

The Bagasse based cogeneration Power Projects in the state of Telangana shall be treated as must-run i.e., not subjected to the Merit Order Despatch. The generating company has to furnish the Day-Ahead Schedule and maintain it in line with the TSERC Regulations from time to time. However, for the purpose of Grid stability and discipline in the event of contingencies arise and when no other means of Grid discipline is available, the schedule can be changed by the State Load Despatch Centre (SLDC) keeping in view the CERC (Indian Electricity Grid Code) Regulation, 2010 (as amended up-todate) and CERC (Un-scheduled Interchange and related matters), Regulations, 2009 including amendments thereto.

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ARTICLE 14

DEFAULT

14.1 In the event, TSDISCOM commits a breach of any of the terms of this Agreement, the Company shall be entitled to specific performance of this Agreement or claim such damages as would be available under Law or both, at its option, by giving 30 days notice to TSDISCOM.

14.2 In the event, Company commits a breach of any of the terms of this Agreement, the TSDISCOM shall be entitled to specific performance of this Agreement or claim such damages as would be available under Law or both, at its option, by giving 30 days notice to the Company.

14.3 If the default continues for a period of 30 days or more, either party will have a right to issue a preliminary notice for termination of the this Agreement. If the default is not cured within 30 days thereafter, either party can terminate this Agreement and can claim damages at is option.

14.4 In the event of cancellation of the Project allotted to the Company by NEDCAP/TNREDCL for any reason, the PPA with TSDISCOM will automatically get cancelled.

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ARTICLE 15

SUBSEQUENT COMMISSION / GOVERNMENTAL ACTIONS

If as a result of any act, restraint or regulation by the TSERC, State or Central Government authority, department, Ministry, whether part of legislative, executive or judicial branch, the Company 's ability to use the energy for captive consumption can be materially abridged or abrogated, at the request of the Company, TSNPDCL agrees to negotiate in good faith with the company for an arrangement mutually agreed to by both the parties, whereby, the Company would sell and TSNPDCL would purchase the energy produced by the Project.

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ARTICLE 16

DISPUTE RESOLUTION

16.1 Each party shall designate in writing to the other party a representative who shall be authorized to resolve any dispute arising under this agreement in an equitable manner.

16.2 Following notice by one party to the other setting out the particulars of the dispute, if the designated representatives are unable to resolve a dispute under this Agreement within 15 days, such dispute shall be referred by such representative to a senior officer designated by the Company and a senior officer designated by TSDISCOM, respectively, who shall attempt to resolve the dispute within a further period of 15 days.

16.3 The parties hereto agree to use their best efforts to attempt to resolve all disputes arising hereunder promptly, equitably and in good faith and further agree to provide each other with reasonable access during normal business hours to any and all non-privileged records, information and date pertaining to any such dispute.

16.4 Failing resolution of the dispute interms of the above provisions or even otherwise any party may approach the TSERC to adjudicate upon the dispute in terms of Section 86 (1) (f) of the Electricity Act, 2003.

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IN WITNESS WHEREOF, the Company and the TSNPDCL have caused this Agreement to be executed as of the date and the year first set forth above.

For and behalf of

Northern Power Distribution Company of Telangana Limited

WITNESS

1. General Manager
IPC & RAC, TSNPDCL
Warangal.

2. Divisional Engineer/IPC
TSNPDCL/WARANGAL.

By: 10/12/2021

Its: T. Madhusudhan.,
Chief General Manager,
IPC & RAC, TSNPDCL,
Warangal

For and behalf of

M/s. Madhucon Sugar and Power Industries Limited

WITNESS

1. M-Srinivasa Rao
M-SRINIVASA RAO
2. DIRECTOR (OPERATIONS)

For Madhucon Sugar and Power Industries Limited
10/12/2021

By:

Its: Managing Director

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SCHEDULE 1

Particulars of the Project

(Referred to in the Preamble to the Agreement)

Name of the Project	Location	No. of Units	Capacity of the Generator (in MW)	Capacity of the Station (in MW)	Sale to Discom (in MW)
M/s. Madhucon Sugar and Power Industries Limited	Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal, Khammam District	1	24.2	24.2 (*)	19

(*) Out of which 1.7 MW is for auxiliary consumption, 3.5 MW is for captive consumption and balance 19 MW is for export to grid for sale to TSNPDCL at interconnection point viz., 132/33 KV Kusumanchi SS

TSNPDCL WARANGAL

Madhucon Sugar and Power Industries Ltd., Rajeswarapuram 507 180

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SCHEDULE 1 A

Tariff to be decided by the TSERC upon filing of Petition by the Company

SCHEDULE 2

NEDCAP/TNREDCL Proceedings

SCHEDULE 3

NEDCAP/TNREDCL Agreement

SCHEDULE 4

TOO. 488, dated 17.03.2012

TSNPDCL WARANGAL

Sugar and Power Industries Ltd., Madhucon Rajeswarapuram 507 130

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MADHUCON
SUGAR & POWER INDUSTRIES LIMITED
CIN: U15427TG2002PLC039859

O/o. Chief Engineer SLDC
INWARD
18 DEC 2021
TSTRANSCO

Date : 17-12-2021,

To
The Chief Engineer,
State Load dispatch entre (SLDC)
TS TRANSCO, Vidyut Soudha, Khairatabad,
HYDERABAD,
TELANGANA – 500082.

Sub: Off-take of Renewal energy power 19 MW RTC from MSPIL - 24.20 Bagasse based cogeneration plant at Rajeswarapuram, Nelakondapally Mandal, Khammam.

Your Ref:

(i) Lr.No. CGM (IPC &RAC)/GM(PIR)/DE(IPC)/ADE/(IPC) F.No.11/D.No. 426/21, Dt. 17.12.2021
(ii) Lr.No. CGM (IPC &RAC)/GM(PIR)/DE(IPC)/ADE/(IPC) F.No.11/D.No. 416/2. Dt. 10.12.2021
(iii) Lr. No. ED(Comml)/SE/(IPC)/DE-2/RE/F.10 Bagasse /D.No.332/ Dt.16.12.2021.

Our Ref : (1) MSPIL representation letter dated 13.12.2021.
(2) Vendor registration: Lr. ED/Comml/SE-IPC/DE-1/ F.VR-Madhucon / D.No.254 /Dt.29.01.2021.

Sir,

You are kindly aware that we, M/s. Madhucon Sugar and Power Industries Limited, Rajeswarapuram, Khammam District, having bagasse based cogeneration plant and having sugar cane crushing operations and generating renewable energy and power availability to export 19 MW as per the vendor registration.

With reference No. (1) as per the TS NPDCL has given consent to supply the renewal energy power @ 19 MW from our Bagasse based power plant, as our sugar season is already commenced and we request you please allow us to supply / off-take power from 19-12-2021 – 00:00 Hours RTC, from our plant as per the tariff to be determined by TSERC.

As presently we are having NOC with IEX for Dec 2021, Vide No. TS_202111292539/ 2021 Dt. 29.11.2021, we request for cancelation of the NOC before off-take of renewable energy to TS-SLDC.

Thanking You.,
Yours faithfully,
for Madhucon sugar and power industries limited.,

Authorized Signatory.

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Northern Power Distribution Company of Telangana Limited
Corporate Office, # 2-5-31/2, Vidyuth Bhavan, Nakkalagutta, Hanamkonda, Warangal – 506 001

From
Chief General Manager,
IPC & RAC,
TSNPDCL, Warangal.

To
M/s. Madhucon Sugar and Power Industries Ltd., Rajeswarapuram, Nelakondapalli, Khammam District.- 507160

Lr.No.CGM(IPC&RAC)/GM/DE(IPC)/ADE(IPC)/F.No.11/D.No.426/21, Dt.17.12.2021

Sir,

Sub:- TSNPDCL/IPC Wing – Request of M/s Madhucon Sugar and power Industries limited for off-take of Power with pending consent from TSERC — Reg.

Ref:- 1). Draft PPA entered With M/s Madhucon Sugar and power Industries Limited Dt: 10.12.2021.
2). Lr.No.CGM(IPC&RAC)/GM(PIR)/DE(IPC)/ADE(IPC)/F.No.11/D.No.416/21, Dt.21.12.2021
3). Representation of M/s. Madhucon Sugar and Power Industries Limited letter, dated:13.12.2021.
4). LrNo.ED (COmml)/SE(IPC)/DE-2/RE/F.10 Bagasse/D.No.332/21,Dt:16.12.21.

With reference to your letter reference 2nd cited above, it is to inform that draft Power Purchase agreement entered for 19 MW from their 24.2 MW Bagasse based cogeneration plant under reference 1st cited above is already submitted to TSERC for consent vide reference 2nd cited and awaiting for consent from TSERC.

Further, it is to inform that, meanwhile, as per your request and in view of the interest of public and cane formers of the State and also season started in November, the Management has decided to "avail power from your plant subject to tariff fixed by TSERC".

Yours faithfully,

CHIEF GENERAL MANAGER
IPC & RAC/TSNPDCL/WGL

Copy to :
The Superintending Engineer/Operation/ Khammam
The Superintending Engineer OMC, TSTRANSCO, Khammam.
The Divisional Engineer/Op/Khammam.
The Divisional Engineer/MRT/Khammam.

Copy Communicated to:
The Chief Engineer/Zone /Waranagal/TSTRANSCO/Warangal.
The Chief Engineer/(SLDC), TSTRANSCO, Vidyuth Soudha, Hyderabad
The Financial Advisor & Chief Controller of Accounts, TSTRANSCO, Vidyuth Soudha. Hyderabad
Copy Submitted to :
The Executive Director(Comml.),TSPCC,Vidyuth Soudha, Hyderabad

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रजिस्ट्री सं० डी० एल०-33004/99 REGD. NO. D. L.-33004/99

भारत का राजपत्र
The Gazette of India

असाधारण
EXTRAORDINARY
भाग I—खण्ड 1
PART I—Section 1
प्राधिकार से प्रकाशित
PUBLISHED BY AUTHORITY

सं. 39] नई दिल्ली, बृहस्पतिवार, जनवरी 28, 2016/माघ 8, 1937
No. 39] NEW DELHI, THURSDAY, JANUARY 28, 2016/MAGHA 8, 1937

विद्युत मंत्रालय

संकल्प

नई दिल्ली, 28 जनवरी, 2016

टैरिफ नीति

सं. 23/2/2005-आर एंड आर (खंड-IX).–1.0 प्रस्तावना

1.1 विद्युत अधिनियम, 2003 की धारा 3 का अनुपालन करते हुए, केंद्र सरकार ने दिनांक 6 जनवरी, 2006 को टैरिफ नीति अधिसूचित की। टैरिफ नीति में और संशोधन 31 मार्च, 2008, 20 जनवरी, 2011 और 08 जुलाई, 2011 को अधिसूचित किए गए थे। विद्युत अधिनियम, 2003 की धारा 3(3) के अंतर्गत प्रदत्त शक्तियों का प्रयोग करते हुए केंद्र सरकार एतदद्वारा भारत के राजपत्र में इस संकल्प के प्रकाशन की तारीख से प्रभावी किए जाने हेतु संशोधित टैरिफ नीति अधिसूचित करती है।

06 जनवरी, 2006 को अधिसूचित टैरिफ नीति के प्रावधानों के अंतर्गत तथा इसमें किए गए संशोधनों के अंतर्गत किसी भी किए गए कार्य अथवा की गई कार्रवाई अथवा तथाकथित किए गए अथवा किए जाने वाले कार्य के होते हुए भी, जहां तक कि इस नीति से असंगत नहीं हैं, उन्हें इस संशोधित नीति के प्रावधानों के अंतर्गत किया गया अथवा किया जाने वाला माना जाएगा।

1.2 राष्ट्रीय विद्युत नीति ने नयी उत्पादन क्षमता की अभिवृद्धि एवं प्रतिवर्ष विद्युत की प्रतिव्यक्ति उपलब्धता बढ़ाने का लक्ष्य निर्धारित किया है एवं न केवल ऊर्जा और व्यस्ततमकालीन कमी को दूर करने के लिए, बल्कि केंद्रीय विद्युत प्राधिकरण द्वारा निर्दिष्ट स्पिनिंग रिजर्व रखा जाना भी है। विद्युत क्षेत्र को आगामी पांच वर्षों में सभी घरों को सस्ती बिजली की उपलब्धता को सुगम बनाने हेतु चुनौती को भी पूरा करना है।

1.3 केन्द्र और राज्य सरकार, बजटीय संसाधनों से अपेक्षित धनराशि मुहैया कराने में असमर्थ हैं अतः विद्युत क्षेत्र में निवेश को आकर्षित करने के लिए निवेश पर उपयुक्त रिटर्न मुहैया कराना अनिवार्य है। देश के आर्थिक विकास में तेजी लाने और लोगों के जीवन स्तर में सुधार लाने का लक्ष्य प्राप्त करने हेतु

- विवाह अनुदान
- जीवन-निर्वाह अनुदान
- सहकारियों एवं स्वयंसेवी समूहों के लिए आय सृजन योजनाओं को बढ़ावा देना
- बीज, कीटनाशक एवं उर्वरक सब्सिडी तथा सिंचाई सहायता

उपर्युक्त अतिरिक्त प्रावधानों के अलावा वर्तमान में लागू पुनर्वास एवं पुनःस्थापन राष्ट्रीय नीति के प्रावधान सामान्यतः प्रभावी बने रहेंगे।

MINISTRY OF POWER

RESOLUTION

New Delhi, the 28th January, 2016

TARIFF POLICY

No. 23/2/2005-R&R (Vol-IX).—1.0 INTRODUCTION

1.1 In compliance with section 3 of the Electricity Act 2003, the Central Government notified the Tariff Policy on 6th January, 2006. Further amendments to the Tariff Policy were notified on 31st March, 2008, 20th January, 2011 and 8th July, 2011. In exercise of powers conferred under section 3(3) of Electricity Act, 2003, the Central Government hereby notifies the revised Tariff Policy to be effective from the date of publication of this resolution in the Gazette of India.

Notwithstanding anything done or any action taken or purported to have been done or taken under the provisions of the Tariff Policy notified on 6th January, 2006 and amendments made thereunder, shall, in so far as it is not inconsistent with this Policy, be deemed to have been done or taken under provisions of this revised policy.

1.2 The National Electricity Policy has set the goal of adding new generation capacity and enhancing per capita availability of electricity per year and to not only eliminate energy and peaking shortages but to also have a spinning reserve as specified by the Central Electricity Authority. Development of the power sector has also to meet the challenge of providing access for affordable electricity to all households in next five years.

1.3 It is therefore essential to attract adequate investments in the power sector by providing appropriate return on investment as budgetary resources of the Central and State Governments are incapable of providing the requisite funds. It is equally necessary to ensure availability of electricity to different categories of consumers at reasonable rates for achieving the objectives of rapid economic development of the country and improvement in the living standards of the people.

1.4 Balancing the requirement of attracting adequate investments to the sector and that of ensuring reasonability of user charges for the consumers is the critical challenge for the regulatory process. Accelerated development of the power sector and its ability to attract necessary investments calls for, inter alia, consistent regulatory approach across the country. Consistency in approach becomes all the more necessary considering the large number of States and the diversities involved.

2.0 LEGAL POSITION

2.1 Section 3 (1) of the Electricity Act, 2003 empowers the Central Government to formulate the tariff policy. Section 3(3) of the Act enables the Central Government to review or revise the tariff policy from time to time.

2.2 Central Electricity Regulatory Commission (CERC) and State Electricity Regulatory Commissions (SERCs) shall be guided by the tariff policy in discharging their functions including framing the regulations.

2.3 Regulatory Commissions shall be guided by the principles and methodologies specified by the Central Commission for determination of tariff applicable to generating companies and transmission licensees.

2.4 The Forum of Regulators has been constituted by the Central Government under the provisions of the Act which would, inter alia, facilitate consistency in approach specially in the area of distribution.

3.0 EVOLUTION OF THE POLICY

The tariff policy has been evolved in consultation with the State Governments, the Central Electricity Authority (CEA), the Central Electricity Regulatory Commission and various stakeholders.

4.0 OBJECTIVES OF THE POLICY

The objectives of this tariff policy are to:

(a) Ensure availability of electricity to consumers at reasonable and competitive rates;

(b) Ensure financial viability of the sector and attract investments;

(c) Promote transparency, consistency and predictability in regulatory approaches across jurisdictions and minimise perceptions of regulatory risks;

(d) Promote competition, efficiency in operations and improvement in quality of supply;

(e) Promote generation of electricity from Renewable sources;

(f) Promote Hydroelectric Power generation including Pumped Storage Projects (PSP) to provide adequate peaking reserves, reliable grid operation and integration of variable renewable energy sources;

(g) Evolve a dynamic and robust electricity infrastructure for better consumer services;

(h) Facilitate supply of adequate and uninterrupted power to all categories of consumers;

(i) Ensure creation of adequate capacity including reserves in generation, transmission and distribution in advance, for reliability of supply of electricity to consumers.

5.0 GENERAL APPROACH TO TARIFF

5.1 Introducing competition in different segments of the electricity industry is one of the key features of the Electricity Act, 2003. Competition will lead to significant benefits to consumers through reduction in capital costs and also efficiency of operations. It will also facilitate the price to be determined competitively. The Central Government has already issued detailed guidelines for tariff based bidding process for procurement of electricity by distribution licensees.

5.2 All future requirement of power should continue to be procured competitively by distribution licensees except in cases of expansion of existing projects or where there is a company owned or controlled by the State Government as an identified developer and where regulators will need to resort to tariff determination based on norms provided that expansion of generating capacity by private developers for this purpose would be restricted to one time addition of not more than 100% of the existing capacity.

Provided further that the Appropriate Commission, as defined in the Electricity Act, 2003, shall ensure that in case of expansion of such projects, the benefit of sharing of infrastructure of existing project and efficiency of new technology is passed on to consumers through tariff.

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

Provided that notwithstanding the provision contained in para 5.11(j) of the policy, the tariff for such 35% of the installed capacity shall be determined by SERC.

However, the 15% of power outside long term PPAs allowed under para 5.7.1 of National Electricity Policy shall not be included in 35% allowed to be procured by Distribution Licensees of the State.

5.3 The tariff of all new generation and transmission projects of company owned or controlled by the Central Government shall continue to be determined on the basis of competitive bidding as per the Tariff Policy notified on 6th January, 2006 unless otherwise specified by the Central Government on case to case basis.

Further, intra-state transmission projects shall be developed by State Government through competitive bidding process for projects costing above a threshold limit which shall be decided by the SERCs.

5.4 The Central Electricity Regulatory Commission in consultation with Central Electricity Authority and other stakeholders shall frame within six months, regulations for determination of tariff for generation of electricity from projects using coal washery rejects. These regulations shall also be followed by State Electricity Regulatory Commissions.

Provided that procurement of power from coal washery rejects based projects developed by Central/State PSUs, Joint Venture between Government Company and Company other than Government Company in which shareholding of company other than Government Company either directly or through any of its subsidiary company or associate company shall not be more than 26% of the paid up share capital, can be done under Section 62 of the Act.

5.5 The developer of a hydroelectric project, including Pumped Storage Plant (PSP), would have the option of getting the tariff determined by the Appropriate Commission for the power to be sold through long term Power Purchase

Agreements (PPAs) on the basis of performance based cost of service regulations if the following conditions are fulfilled:

(a) The Appropriate Commission is satisfied that the project site has been allotted to the developer by the concerned State Government after following a transparent two stage process. The first stage should be for prequalification on the basis of criteria of financial strength, past experience of developing infrastructure projects of similar size, past track record of developing projects on time and within estimated costs, turnover and ability to meet performance guarantee etc. In the second stage, bids are to be called on the basis of only one single quantifiable parameter, such as, additional free power in excess of percentage of free power, as notified by the Central Government, equity participation offered to the State Government, or any other parameter to be notified by the Central Government from time to time.

(b) Concurrence of CEA (if required under Section 8 of the Act), financial closure, award of work and long term Power Purchase Agreement (PPA) (of the duration of 35 years or more) of the capacity specified in (c) below with distribution licensees are completed by 15.08.2022.

(c) Long term PPA is firmed up for 60% or more of the total saleable design energy, balance being allowed for merchant sale.

Provided that distribution licensees can extend the duration of long term PPA beyond 35 years for a further period of 15 years at the existing terms and conditions subject to the approval of Appropriate Commission.

Provided further that nothing contained in this clause shall apply to Pumped Storage Plants (PSP).

(d) The time period for commissioning of all the units of the project shall be fixed at four years from the date of approval of the commissioning schedule by the Appropriate Commission. However, the Appropriate Commission may, after recording reasons in writing, fix longer time period for hydro electric projects (reservoir as well as run-of- river projects) of more than 100 MW capacity. Agreed timelines to achieve the fixed commissioning schedule alongwith penalty for delay shall be decided by the Appropriate Commission in consultation with the Central Electricity Authority. The Appropriate Commission shall allow pass through the Interest During Construction (IDC) and Financing Cost (FC) only upto the period of delay not attributable to the developer, as approved by the CEA.

(e) Award of contracts for supply of equipment and construction of the project, either through a turnkey or through well defined packages, are done on the basis of international competitive bidding.

5.6 Notwithstanding anything contained in Para 5.5 above, the developers of hydro electric projects of more than 100 MW design capacity for which sites have been awarded earlier by following a transparent process and on the basis of pre-determined set of criteria would have the option of getting the tariff determined by the Appropriate Commission for the power to be sold through long term PPA on the basis of cost plus under Section 62 of the Act.

5.7 In case of projects covered under Para 5.5 and 5.6, the Appropriate Commission shall determine tariff ensuring the following:

(i) Any expenditure incurred or committed to be incurred by the project developer for getting project site allotted (except free power as notified) would neither be included in the project cost, nor any such expenditure shall be passed through in tariff.

(ii) The project cost shall include the cost of the approved R&R plan of the Project which shall be in conformity with the following:

(a) the National Rehabilitation & Resettlement Policy currently in force;

(b) the R&R package as enclosed at appendix.

(iii) Annual fixed charges shall be taken pro-rata to the saleable design energy tied up on the basis of long term PPAs with respect to total saleable design energy. The total saleable design energy shall be arrived at by deducting the following from the design energy at the bus bar:

a) Free power as notified by the Central Government from time to time for the host State and the riparian State and percentage for contribution towards Local Area Development Fund as constituted by the State Government. This free power may be suitably staggered as decided by the State Government.

b) Energy corresponding to 100 units of electricity to be provided free of cost every month to every Project Affected Family notified by the State Government to be offered through the concerned distribution licensee in the designated resettlement area/projects area for a period of ten years from the date of commissioning.

5.8 The Appropriate Commission shall provide for suitable regulatory framework for incentivizing the developers of Hydro Electric Projects (HEPs) for using long-term financial instruments in order to reduce the tariff burden in the initial years.

5.9 The real benefits of competition would be available only with the emergence of appropriate market conditions. Shortages of power supply will need to be overcome. Multiple players will enhance the quality of service through competition. All efforts will need to be made to bring power industry to this situation as early as possible in the overall interests of consumers. Transmission and distribution, i.e. the wires business is internationally recognized as having the characteristics of a natural monopoly where there are inherent difficulties in going beyond regulated returns on the basis of scrutiny of costs.

5.10 Consumer interest is best served in ensuring viability and sustainability of the entire value chain viz., generation, transmission and distribution of electricity, while at the same time facilitating power supply at reasonable rate to consumers. The financial turnaround/restructuring plans are approved by the Appropriate Government from time to time to achieve this objective. The Appropriate Government as well as the Appropriate Commission while implementing such plans shall ensure viability of the generation, transmission and distribution in terms of recovery of all prudent costs.

5.11Tariff policy lays down the following framework for performance based cost of service regulation in respect of aspects common to generation, transmission as well as distribution. These shall not apply to competitively bid projects as referred to in para 6.1 and para 7.1 (6). Sector specific aspects are dealt with in subsequent sections.

a) Return on Investment

Balance needs to be maintained between the interests of consumers and the need for investments while laying down rate of return. Return should attract investments at par with, if not in preference to, other sectors so that the electricity sector is able to create adequate capacity. The rate of return should be such that it allows generation of reasonable surplus for growth of the sector.

The Central Commission would notify, from time to time, the rate of return on equity for generation and transmission projects keeping in view the assessment of overall risk and the prevalent cost of capital which shall be followed by the SERCs also. The rate of return notified by CERC for transmission may be adopted by the SERCs for distribution with appropriate modification taking into view the risks involved. For uniform approach in this matter, it would be desirable to arrive at a consensus through the Forum of Regulators.

While allowing the total capital cost of the project, the Appropriate Commission would ensure that these are reasonable and to achieve this objective, requisite benchmarks on capital costs should be evolved by the Regulatory Commissions. The Central Commission may adopt either Return on Equity or Return on Capital approach whichever is considered better in the interest of the consumers.

The State Commission may consider 'distribution and supply margin' as basis for allowing returns in distribution business at an appropriate time. The State Commission may also consider price cap regulation based on comprehensive study. The Forum of Regulators should evolve a comprehensive approach in this regard. The considerations while preparing such an approach would, inter-alia, include issues such as reduction in Aggregate Technical and Commercial losses, improving the standards of performance and reduction in cost of supply.

b) Equity Norms

For financing of future capital cost of projects, a Debt: Equity ratio of 70:30 should be adopted. Promoters would be free to have higher quantum of equity investments. The equity in excess of this norm should be treated as loans advanced at the weighted average rate of interest and for a weighted average tenor of the long term debt component of the project after ascertaining the reasonableness of the interest rates and taking into account the effect of debt restructuring done, if any. In case of equity below the normative level, the actual equity would be used for determination of Return on Equity in tariff computations.

c) Depreciation

The Central Commission may notify the rates of depreciation in respect of generation and transmission assets. The depreciation rates so notified would also be applicable for distribution assets with appropriate modification as may be evolved by the Forum of Regulators.

Provided that the Appropriate Commission shall specify, for the purpose of tariff determination, a upper ceiling of the rate of depreciation to be applicable during the useful life of the project and the developer shall have the option of indicating, while seeking approval for tariff, lower rate of depreciation subject to the aforesaid ceiling.

The rates of depreciation so notified would be applicable for the purpose of tariffs as well as accounting.

There should be no need for any advance against depreciation.

Benefit of reduced tariff after the assets have been fully depreciated should remain available to the consumers.

Notwithstanding the above, power from those plants of a generating company, where either whose PPAs have expired or plants have completed their useful life, may be bundled with power from renewable generating plants to be set up through the process of bidding or for which the equipment for setting up such plant is procured through competitive bidding. In such cases, power from such plants can be reallocated to beneficiaries purchasing power from renewable energy generating plants on the principles to be decided by Appropriate Government. The Obligated Entities which finally buy such power shall account towards their renewable purchase obligation to the extent of power bought from renewable energy generating plants.

The scheduling and despatch of such conventional and renewable generating plants shall be done separately.

d) Cost of Debt

Structuring of debt, including its tenure, with a view to reducing the tariff should be encouraged. Savings in costs on account of subsequent restructuring of debt should be suitably incentivised by the Regulatory Commissions keeping in view the interests of the consumers.

e) Cost of Management of Foreign Exchange Risk

Foreign exchange variation risk shall not be a pass through. However, appropriate costs of hedging and swapping to take care of foreign exchange variations should be allowed for debt obtained in foreign currencies. This provision would be relevant only for the projects where tariff has not been determined on the basis of competitive bids.

f) Operating Norms

Suitable performance norms of operations together with incentives and disincentives would need to be evolved along with appropriate arrangement for sharing the gains of efficient operations with the consumers. Except for the cases referred to in para 5.11(h)(2), the operating parameters in tariffs should be at "normative levels" only and not at "lower of normative and actuals". This is essential to encourage better operating performance. The norms should be efficient, relatable to past performance, capable of achievement and progressively reflecting increased efficiencies and may also take into consideration the latest technological advancements, fuel, vintage of equipments, nature of operations, level of service to be provided to consumers etc. Continued and proven inefficiency must be controlled and penalized.

The Central Commission would, in consultation with the Central Electricity Authority, notify operating norms from time to time for generation and transmission. The SERC would adopt these norms. In cases where operations have been much below the norms for many previous years, the SERCs may fix relaxed norms suitably and draw a transition path over the time for achieving the norms notified by the Central Commission, or phase them out in accordance with the norms specified by the Authority in this regard.

Operating norms for distribution networks would be notified by the concerned SERCs. For uniformity, the Forum of Regulators should evolve model guidelines taking into consideration the state specific distinctive features.

g) Renovation and Modernization

Renovation and modernization of generation plants (including repowering of wind generating plants) need to be encouraged for higher efficiency levels even though they may have not completed their useful life. This shall not include periodic overhauls. A Multi-Year Tariff (MYT) framework may be prescribed which should also cover capital investments necessary for renovation and modernization and an incentive framework to share the benefits of efficiency improvement between the utilities and the beneficiaries with reference to revised and specific performance norms to be fixed by the Appropriate Commission. Appropriate capital costs required for predetermined efficiency gains and/or for sustenance of high level performance would need to be assessed by the Appropriate Commission.

h) Multi Year Tariff

1) Section 61 of the Act states that the Appropriate Commission for determining the terms and conditions for the determination of tariff shall be guided, inter-alia, by Multi-Year Tariff (MYT) principles. The framework should feature a five-year control period. The initial control period may, however, be of 3 year duration for transmission and distribution if deemed necessary by the Regulatory Commission on account of data uncertainties and other practical considerations. In cases of lack of reliable data, the Appropriate Commission may state assumptions in MYT for first control period and a fresh control period may be started as and when more reliable data becomes available.

2) In cases where operations have been much below the norms for many previous years, the initial starting point in determining the revenue requirement and the improvement trajectories should be recognized at

"relaxed" levels and not the "desired" levels. Suitable benchmarking studies may be conducted to establish the "desired" performance standards, Separate studies may be required for each utility to assess the capital expenditure necessary to meet the minimum service standards.

3) Once the revenue requirements are established at the beginning of the control period, the Regulatory Commission should focus on regulation of outputs and not the input cost elements. At the end of the control period, a comprehensive review of performance may be undertaken.

4) Uncontrollable costs should be recovered speedily to ensure that future consumers are not burdened with past costs. Uncontrollable costs would include (but not limited to) fuel costs, costs on account of inflation, taxes and cess, variations in power purchase unit costs including on account of adverse natural events.

5) Clear guidelines and regulations on information disclosure may be developed by the Regulatory Commissions. Section 62 (2) of the Act empowers the Appropriate Commission to require licensees to furnish separate details, as may be specified in respect of generation, transmission and distribution for determination of tariff.

(i) Benefits under Clean Development Mechanism (CDM)

Tariff fixation for all electricity projects (generation, transmission and distribution) that result in lower Green House Gas (GHG) emissions than the relevant base line should take into account the benefits obtained from the Clean Development Mechanism (CDM) into consideration, in a manner so as to provide adequate incentive to the project developers.

(j) Composite Scheme

Sub-section (b) of Section 79(1) of the Act provides that Central Commission shall regulate the tariff of generating company, if such generating company enters into or otherwise have a composite scheme for generation and sale of electricity in more than one State.

Explanation: The composite scheme as specified under section 79(1) of the Act shall mean a scheme by a generating company for generation and sale of electricity in more than one State, having signed long-term or medium-term PPA prior to the date of commercial operation of the project (the COD of the last unit of the project will be deemed to be the date of commercial operation of the project) for sale of atleast 10% of the capacity of the project to a distribution licensee outside the State in which such project is located.

5.12 While it is recognized that the State Governments have the right to impose duties, taxes, cess on sale or consumption of electricity, these could potentially distort competition and optimal use of resources especially if such levies are used selectively and on a non-uniform basis.

In some cases, the duties etc. on consumption of electricity is linked to sources of generation (like captive generation) and the level of duties levied is much higher as compared to that being levied on the same category of consumers who draw power from grid. Such a distinction is invidious and inappropriate. The sole purpose of freely allowing captive generation is to enable industries to access reliable, quality and cost effective power. Particularly, the provisions relating to captive power plants which can be set up by group of consumers has been brought in recognition of the fact that efficient expansion of small and medium industries across the country will lead to faster economic growth and creation of larger employment opportunities.

For realizing the goal of making available electricity to consumers at reasonable and competitive prices, it is necessary that such duties are kept at reasonable level.

5.13 The Act provides for introduction of open access for consumers of one megawatt and above in a time bound manner. The Regulatory Commissions shall introduce open access for different categories of consumers as per the provisions of the Act.

6.0 GENERATION

Accelerated growth of the generation capacity sector is essential to meet the estimated growth in demand. Adequacy of generation is also essential for efficient functioning of power markets. At the same time, it is to be ensured that new capacity addition should deliver electricity at most efficient rates to protect the interests of consumers. This policy stipulates the following for meeting these objectives.

6.1 Procurement of power

As stipulated in para 5.1, power procurement for future requirements should be through a transparent competitive bidding mechanism using the guidelines issued by the Central Government from time to time. These guidelines provide for procurement of electricity separately for base load requirements and for peak load requirements. This would facilitate setting up of generation capacities specifically for meeting such requirements.

However, some of the competitively bid projects as per the guidelines dated 19th January, 2005 have experienced difficulties in getting the required quantity of coal from Coal India Limited (CIL). In case of reduced quantity of

domestic coal supplied by CIL, vis-à-vis the assured quantity or quantity indicated in Letter of Assurance/FSA the cost of imported/market based e-auction coal procured for making up the shortfall, shall be considered for being made a pass through by Appropriate Commission on a case to case basis, as per advisory issued by Ministry of Power vide OM No. FU-12/2011-IPC (Vol-III) dated 31.7.2013.

6.2 Tariff structuring and associated issues

(1) A two-part tariff structure should be adopted for all long-term and medium-term contracts to facilitate Merit Order dispatch. According to National Electricity Policy, the Availability Based Tariff (ABT) is also to be introduced at State level. This framework would be extended to generating stations (including grid connected captive plants of capacities as determined by the SERC). The Appropriate Commission shall introduce differential rates of fixed charges for peak and off peak hours for better management of load within a period of two years.

Power stations are required to be available and ready to dispatch at all times. Notwithstanding any provision contained in the Power Purchase Agreement (PPA), in order to ensure better utilization of un-requisitioned generating capacity of generating stations, based on regulated tariff under Section 62 of the Electricity Act 2003, the procurer shall communicate, at least twenty four hours before 00.00 hours of the day when the power and quantum thereof is not requisitioned by it enabling the generating stations to sell the same in the market in consonance with laid down policy of Central Government in this regard. The developer and the procurers signing the PPA would share the gains realized from sale, if any, of such un-requisitioned power in market in the ratio of 50:50, if not already provided in the PPA. Such gain will be calculated as the difference between selling price of such power and fuel charge. It should, however, be ensured that such merchant sale does not result in adverse impact on the original beneficiary(ies) including in the form of higher average energy charge vis-à-vis the energy charge payable without the merchant sale. For the projects under section 63 of the Act, the methodology for such sale may be decided by the Appropriate Commission on mutually agreed terms between procurer and generator or unless already specified in the PPA.

(2) Power Purchase Agreement should ensure adequate and bankable payment security arrangements to the Generating companies. In case of persisting default on payment of agreed tariff as per PPA in spite of the available payment security mechanisms like letter of credit, escrow of cash flows etc. the generating companies may sell such power to other buyers.

(3) In case of coal based generating stations, the cost of project will also include reasonable cost of setting up coal washeries, coal beneficiation system and dry ash handling & disposal system.

(4) After the award of bids, if there is any change in domestic duties, levies, cess and taxes imposed by Central Government, State Governments/Union Territories or by any Government instrumentality leading to corresponding changes in the cost, the same may be treated as "Change in Law" and may unless provided otherwise in the PPA, be allowed as pass through subject to approval of Appropriate Commission.

(5) The thermal power plant(s) including the existing plants located within 50 km radius of sewage treatment plant of Municipality/local bodies/similar organization shall in the order of their closeness to the sewage treatment plant, mandatorily use treated sewage water produced by these bodies and the associated cost on this account be allowed as a pass through in the tariff. Such thermal plants may also ensure back-up source of water to meet their requirement in the event of shortage of supply by the sewage treatment plant. The associated cost on this account shall be factored into the fixed cost so as not to disturb the merit order of such thermal plant. The shutdown of the sewage treatment plant will be taken in consultation with the developer of the power plant.

6.3 Harnessing captive generation

Captive generation is an important means to making competitive power available. Appropriate Commission should create an enabling environment that encourages captive power plants to be connected to the grid.

Such captive plants could supply surplus power through grid subject to the same regulation as applicable to generating companies. Firm supplies may be bought from captive plants by distribution licensees using the guidelines issued by the Central Government under section 63 of the Act taking into account second proviso of para 5.2 of this Policy.

The prices should be differentiated for peak and off-peak supply and the tariff should include variable cost of generation at actual levels and reasonable compensation for capacity charges.

Wheeling charges and other terms and conditions for implementation should be determined in advance by the respective State Commission, duly ensuring that the charges are reasonable and fair.

Grid connected captive plants could also supply power to non-captive users connected to the grid through available transmission facilities based on negotiated tariffs. Such sale of electricity would be subject to relevant regulations for open access including compliance of relevant provisions of rule 3 of the Electricity Rules, 2005.

6.4 Renewable sources of energy generation including Co-generation from renewable energy sources:

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

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

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

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

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

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

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

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

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

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

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

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

Entities who finally buy such power shall account towards their renewable purchase obligations.

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

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

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

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

7.0 TRANSMISSION

The transmission system in the country consists of the regional networks, the inter-regional connections that carry electricity across the five regions and the State networks. Development of the State networks has not been uniform and capacity in such networks needs to be augmented. These networks will play an important role in intra-State power flows and also in the regional and national flows. The tariff policy, in so far as transmission is concerned, seeks to achieve the following objectives:

1. Ensuring optimal development of the transmission network ahead of generation with adequate margin for reliability and to promote efficient utilization of generation and transmission assets in the country;
2. Attracting the required investments in the transmission sector and providing adequate returns.

7.1 Transmission pricing

(1) A suitable transmission tariff framework for all inter-State transmission, including transmission of electricity across the territory of an intervening State as well as conveyance within the State which is incidental to such inter-state transmission, has been implemented with the objective of promoting effective utilization of all assets across the country and accelerated development of new transmission capacities that are required.

(2) The National Electricity Policy mandates that the national tariff framework implemented should be sensitive to distance, direction and related to quantum of power flow. This has been developed by CERC taking into consideration the advice of the CEA. Sharing of transmission charges shall be done in accordance with such tariff mechanism as amended from time to time.

(3) Transmission charges, under this framework, can be determined on MW per circuit kilometer basis, zonal postage stamp basis, or some other pragmatic variant, the ultimate objective being to get the transmission system users to share the total transmission cost in proportion to their respective utilization of the transmission system. The 'utilization' factor should duly capture the advantage of reliability reaped by all. The spread between minimum and maximum transmission rates should be such as not to inhibit planned development/augmentation of the transmission system but should discourage non-optimal transmission investment.

(4) In view of the approach laid down by the NEP, prior agreement with the beneficiaries would not be a pre-condition for network expansion. CTU/STU should undertake network expansion after identifying the requirements in consonance with the National Electricity Plan and in consultation with stakeholders and taking up the execution after due regulatory approvals. For smooth operation of the grid, efforts should be made to develop transmission system ahead of generation.

(5) The Central Commission has specified norms for capital and operating costs and laid down Standards of Performance for inter-State transmission licensees. Tariff determination and adherence to Standards of Performance shall be carried out in accordance with these norms, as amended from time to time.

(6) Investment by transmission developer including CTU/STUs would be invited through competitive bids in accordance with the guidelines issued by the Central Government from time to time.

(7) While all future inter-state transmission projects shall, ordinarily, be developed through competitive bidding process, the Central Government may give exemption from competitive bidding for (a) specific category of projects of strategic importance, technical upgradation etc. or (b) works required to be done to cater to an urgent situation on a case to case basis.

(8) CERC has specified Regulation on framework for the inter-State transmission. A similar approach should be implemented by SERCs for the intra-State transmission, duly considering factors like voltage, distance, direction and quantum of flow.

(9) Metering compatible with the requirements of the proposed transmission tariff framework should be established on priority basis. The metering should be compatible with ABT requirements, which would also facilitate implementation of Time of Day (ToD) tariffs.

7.2 Transmission loss allocation

(1) Transactions are being charged on the basis of average losses arrived at after appropriately considering the distance and directional sensitivity, as applicable to relevant voltage level, on the transmission system. Based on the methodology laid down by the CERC in this regard for inter-state transmission, the SERCs may evolve a similar framework for intra-state transmission.

The loss framework should ensure that the loss compensation is reasonable and linked to applicable technical loss benchmarks. The benchmarks may be determined by the Appropriate Commission after considering advice of CEA.

(2) It would be desirable to move to a system of loss compensation based on incremental losses as present deficiencies in transmission capacities are overcome through network expansion. The Appropriate Commission may require necessary studies to be conducted to establish the allowable level of system loss for the network configuration and the capital expenditure required to augment the transmission system and reduce system losses. Since additional flows above a level of line loading lead to significantly higher losses, CTU/STU should ensure upgrading of transmission systems to avoid the situations of overloading. The Appropriate Commission should permit adequate capital investments in new assets for upgrading the transmission system.

7.3 Other issues in transmission

(1) Financial incentives and disincentives should be implemented for the CTU and the STU around the Key Performance Indicators (KPI) for these organisations. Such KPIs would include efficient network construction, system availability and loss reduction.

(2) All available information should be shared with intending users by the CTU/STU and the load dispatch centers, particularly information on available transmission capacity and load flow studies.

(3) In extraordinary circumstances including threat to security to the State, public order or natural calamity, if the Central Government allocates power out of the unallocated share of the Central Generating Stations or otherwise, such allocation of power will have priority over short-term, medium-term and long-term access in this order.

7.4 Ancillary Services

(1) The Central Commission may introduce the norms and framework for ancillary services, including the method of sharing the charges, necessary to support the power system or grid operation for maintaining power quality, reliability and security of the grid.

(2) The Central Commission shall also consult the Central Electricity Authority, SERCs/JERCs, CTUs/STUs and NLDC/RLDC/SLDCs while specifying the norms for ancillary services.

(3) The State Commission shall also adopt the norms and framework for ancillary services as specified by the Central Commission.

8.0 DISTRIBUTION

Supply of reliable and quality power of specified standards in an efficient manner and at reasonable rates is one of the main objectives of the National Electricity Policy. The State Commission should determine and notify the standards of performance of licensees with respect to quality, continuity and reliability of service for all consumers. It is desirable that the Forum of Regulators determines the basic framework on service standards. A suitable transition framework could be provided for the licensees to reach the desired levels of service as quickly as possible. Penalties may be imposed on licensees in accordance with section 57 of the Act for failure to meet the standards.

Making the distribution segment of the industry efficient and solvent is the key to success of power sector reforms and provision of services of specified standards. Therefore, the Regulatory Commissions need to strike the right balance between the requirements of the commercial viability of distribution licensees and consumer interests. Loss making utilities need to be transformed into profitable ventures which can raise necessary resources from the capital markets to provide services of international standards to enable India to achieve its full growth potential. Efficiency in operations should be encouraged. Gains of efficient operations with reference to normative parameters should be appropriately shared between consumers and licensees.

Appropriate Commission should mandate Distribution Licensee to undertake load forecasting every year and to publish and submit to the Commission their short, medium and long-term power procurement plans to meet the load.

The State Regulatory Commission will devise a specific trajectory so that 24 hours supply of adequate and uninterrupted power can be ensured to all categories of consumers by 2021-22 or earlier depending upon the prevailing situation in the State.

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Micro-grids supplying renewable energy are being set up in such areas where the grid has not reached or where adequate power is not available in the grid. Investment involved in setting up of such microgrids is substantial. One of the risks of investment is grid reaching the area before the completion of the project life and thereby making power from micro grids costly and unviable. In order to mitigate such risk and incentivize investment in microgrids, there is a need to put in place an appropriate regulatory framework to mandate compulsory purchase of power into the grid from such micro grids at a tariff to be determined under section 62 of the Act considering depreciated cost of investments and keeping in view industry benchmark and with a cap if necessary, as approved by the Appropriate Commission. The Appropriate Commission shall notify necessary regulations in this regard within six months.

8.1 Implementation of Multi-Year Tariff (MYT) framework

1) MYT framework would minimise risks for utilities and consumers, promote efficiency and appropriate reduction of system losses and attract investments. It would also bring greater predictability to consumer tariffs on the whole by restricting tariff adjustments to known indicators of power purchase prices and inflation indices. The framework should be applied for both public and private utilities.

2) The State Commissions should introduce mechanisms for sharing of excess profits and losses with the consumers as part of the overall MYT framework. In the first control period the incentives for the utilities may be asymmetric with the percentage of the excess profits being retained by the utility set at higher levels than the percentage of losses to be borne by the utility. This is necessary to accelerate performance improvement and reduction in losses and will be in the long term interest of consumers by way of lower tariffs.

3) As indicated in para 5.11(h), the MYT framework implemented in the initial control period should have adequate flexibility to accommodate changes in the baselines consequent to metering being completed.

4) Licensees may have the flexibility of charging lower tariffs than approved by the State Commission if competitive conditions require so without having a claim on additional revenue requirement on this account in accordance with Section 62 of the Act.

5) At the beginning of the control period when the "actual" costs form the basis for future projections, there may be a large uncovered gap between required tariffs and the tariffs that are presently applicable. This gap should be fully met through tariff charges and through alternative means that could inter-alia include financial restructuring and transition financing.

6) Incumbent licensees should have the option of filing for separate revenue requirements and tariffs for an area where the State Commission has issued multiple distribution licenses, pursuant to the provisions of Section 14 of the Act read with para 5.4.7 of the National Electricity Policy.

7) Appropriate Commissions should initiate tariff determination and regulatory scrutiny on a suo moto basis in case the licensee does not initiate filings in time. It is desirable that requisite tariff changes come into effect from the date of commencement of each financial year and any gap on account of delay in filing should be on account of licensee.

8.2 Framework for revenue requirements and costs

8.2.1 The following aspects would need to be considered in determining tariffs:

(1) All power purchase costs need to be considered legitimate unless it is established that the merit order principle has been violated or power has been purchased at unreasonable rates. The reduction of Aggregate Technical & Commercial (AT&C) losses needs to be brought about but not by denying revenues required for power purchase for 24 hours supply and necessary and reasonable O&M and investment for system upgradation. Consumers, particularly those who are ready to pay a tariff which reflects efficient costs have the right to get uninterrupted 24 hours supply of quality power. Actual level of retail sales should be grossed up by normative level of T&D losses as indicated in MYT trajectory for allowing power purchase cost subject to justifiable power purchase mix variation (for example, more energy may be purchased from thermal generation in the event of poor rainfall) and fuel surcharge adjustment as per regulations of the SERC.

(2) AT&C loss reduction should be incentivised by linking returns in a MYT framework to an achievable trajectory. Greater transparency and nurturing of consumer groups would be efficacious. For government owned utilities improving governance to achieve AT&C loss reduction is a more difficult and complex challenge for the SERCs. Prescription of a MYT dispensation with different levels of consumer tariffs in succeeding years linked to different AT&C loss levels aimed at covering full costs could generate the requisite political will for effective action to reduce theft as the alternative would be stiffer tariff increases. Third party verification of energy audit results for different areas/localities could be used to impose area/locality specific surcharge for greater AT&C loss levels and this in turn could generate local consensus for effective action for better governance. The SERCs may also encourage suitable local area based incentive and disincentive scheme for the staff of the utilities linked to reduction in losses.

The SERC shall undertake independent assessment of baseline data for various parameters for every distribution circle of the licensee.

The SERC shall also institute a system of independent scrutiny of financial and technical data submitted by the licensees.

As the metering is completed up to appropriate level in the distribution network, it should be possible to segregate technical losses. Accordingly technical loss reduction under MYT framework should then be treated as distinct from commercial loss reduction which requires a different approach.

(3) Section 65 of the Act provides that no direction of the State Government regarding grant of subsidy to consumers in the tariff determined by the State Commission shall be operative if the payment on account of subsidy as decided by the State Commission is not made to the utilities and the tariff fixed by the State Commission shall be applicable from the date of issue of orders by the Commission in this regard. The State Commissions should ensure compliance of this provision of law to ensure financial viability of the utilities. To ensure implementation of the provision of the law, the State Commission should determine the tariff initially, without considering the subsidy commitment by the State Government and subsidised tariff shall be arrived at thereafter considering the subsidy by the State Government for the respective categories of consumers.

(4) Working capital should be allowed duly recognising the transition issues faced by the utilities such as progressive improvement in recovery of bills. Bad debts should be recognised as per policies developed and subject to the approval of the State Commission.

(5) Pass through of past losses or profits should be allowed to the extent caused by uncontrollable factors. During the transition period controllable factors should be to the account of utilities and consumers in proportions determined under the MYT framework.

(6) The contingency reserves should be drawn upon with prior approval of the State Commission only in the event of contingency conditions specified through regulations by the State Commission. The existing practice of providing for development reserves and tariff and dividend control reserves should be discontinued.

(7) Section 61 of the Act mandates that the Appropriate Commission, while determining tariff, shall not only ensure safeguarding of consumer's interests but also the recovery of the cost of electricity in a reasonable manner. Section 62 of the Act further provides for periodic tariff adjustment during a year to take care of the variation in fuel price, as may be specified.

Therefore, the Appropriate Commission shall specify an appropriate price adjustment formula for recovery of the costs, arising on account of the variation in the price of fuel, power purchase etc. on monthly/quarterly basis for recovery of all prudent costs of the generating company and the licensee.

8.2.2 The facility of a regulatory asset has been adopted by some Regulatory Commissions in the past to limit tariff impact in a particular year. This should be done only as a very rare exception in case of natural calamity or force majeure conditions and subject to the following:

a. Under business as usual conditions, no creation of Regulatory Assets shall be allowed;

b. Recovery of outstanding Regulatory Assets along with carrying cost of Regulatory Assets should be time bound and within a period not exceeding seven years. The State Commission may specify the trajectory for the same.

8.3 Tariff design: Linkage of tariffs to cost of service

It has been widely recognised that rational and economic pricing of electricity can be one of the major tools for energy conservation and sustainable use of ground water resources.

In terms of the Section 61(g) of the Act, the Appropriate Commission shall be guided by the objective that the tariff progressively reflects the efficient and prudent cost of supply of electricity.

The State Governments can give subsidy to the extent they consider appropriate as per the provisions of section 65 of the Act. Direct subsidy is a better way to support the poorer categories of consumers than the mechanism of cross-subsidizing the tariff across the board. Subsidies should be targeted effectively and in transparent manner. As a substitute of cross subsidies, the State Government has the option of raising resources through mechanism of electricity duty and giving direct subsidies to only needy consumers. This is a better way of targeting subsidies effectively.

Accordingly, the following principles would be adopted:

1. Consumers below poverty line who consume below a specified level, as prescribed in the National Electricity Policy may receive a special support through cross subsidy. Tariffs for such designated group of consumers will be at least 50% of the average cost of supply.

2. For achieving the objective that the tariff progressively reflects the cost of supply of electricity, the Appropriate Commission would notify a roadmap such that tariffs are brought within ±20% of the average cost of supply. The road map would also have intermediate milestones, based on the approach of a gradual

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reduction in cross subsidy.

3. While fixing tariff for agricultural use, the imperatives of the need of using ground water resources in a sustainable manner would also need to be kept in mind in addition to the average cost of supply. Tariff for agricultural use may be set at different levels for different parts of a state depending on the condition of the ground water table to prevent excessive depletion of ground water. Section 62 (3) of the Act provides that geographical position of any area could be one of the criteria for tariff differentiation. A higher level of subsidy could be considered to support poorer farmers of the region where adverse ground water table condition requires larger quantity of electricity for irrigation purposes subject to suitable restrictions to ensure maintenance of ground water levels and sustainable ground water usage.

4. Extent of subsidy for different categories of consumers can be decided by the State Government keeping in view various relevant aspects. But provision of free electricity is not desirable as it encourages wasteful consumption of electricity. Besides in most cases, lowering of water table in turn creating avoidable problem of water shortage for irrigation and drinking water for later generations. It is also likely to lead to rapid rise in demand of electricity putting severe strain on the distribution network thus adversely affecting the quality of supply of power. Therefore, it is necessary that reasonable level of user charges is levied. The subsidized rates of electricity should be permitted only up to a pre-identified level of consumption beyond which tariffs reflecting efficient cost of service should be charged from consumers. If the State Government wants to reimburse even part of this cost of electricity to poor category of consumers the amount can be paid in cash or any other suitable way. Use of prepaid meters can also facilitate this transfer of subsidy to such consumers.

5. Metering of supply to agricultural/rural consumers can be achieved in a consumer friendly way and in effective manner by management of local distribution in rural areas through commercial arrangement with franchisees with involvement of panchayat institutions, user associations, cooperative societies etc. Use of smart meters may be encouraged as a cost effective option for metering in cases of "limited use consumers" who are eligible for subsidized electricity.

8.4 Definition of tariff components and their applicability

1. Two-part tariffs featuring separate fixed and variable charges and time differentiated tariff shall be introduced on priority for large consumers (say, consumers with demand exceeding 1 MW) within one year and subsequently for all consumers within a period of five years or such period as may be specified. This would also help in flattening the peak and implementing various energy conservation measures.

2. The National Electricity Policy states that existing PPAs with the generating companies would need to be suitably assigned to the successor distribution companies. The State Governments may make such assignments taking care of different load profiles of the distribution companies so that retail tariffs are uniform in the State for different categories of consumers. Thereafter, the retail tariffs would reflect the relative efficiency of distribution companies in procuring power at competitive costs, controlling theft and reducing other distribution losses.

3. The Appropriate Commission may provide incentives to encourage metering and billing based on metered tariffs, particularly for consumer categories that are presently unmetered to a large extent. The metered tariffs and the incentives should be given wide publicity. Smart meters have the advantages of remote metering and billing, implementation of peak and off-peak tariff and demand side management through demand response. These would become essential in future for load-generation balancing due to increasing penetration of intermittent type of generation like wind and solar power.

Appropriate Commission shall, therefore, mandate smart meters for:

(a) Consumers with monthly consumption of 500 units and more at the earliest but not later than 31.12.2017;

(b) Consumers with monthly consumption above 200 units by 31.12.2019.

Further, two way smart meters shall be provided to all prosumers, who also sell back electricity to the grid as and when they require.

In order to enable energy audit in the distribution system, all distribution companies shall ensure smart meters in their electricity system throughout the chain from transformers at 132kV level right down to distribution transformer level at 11kV and further down to each consumer. Further, in order to reduce theft of power, the distribution companies should have enabling feature like distribution SCADA with distribution management system and energy audit functions. SERCs shall mandate these to be in place within two years.

4. The SERCs may also suitably regulate connection charges to be recovered by the distribution licensee to ensure that second distribution licensee does not resort to cherry picking by demanding unreasonable connection charges. The connection charges of the second licensee should not be more than those payable to the incumbent licensee.

8.5 Cross-subsidy surcharge and additional surcharge for open access

8.5.1 National Electricity Policy lays down that the amount of cross-subsidy surcharge and the additional surcharge to be levied from consumers who are permitted open access should not be so onerous that it eliminates competition which is intended to be fostered in generation and supply of power directly to the consumers through open access.

A consumer who is permitted open access will have to make payment to the generator, the transmission licensee whose transmission systems are used, distribution utility for the wheeling charges and, in addition, the cross subsidy surcharge. The computation of cross subsidy surcharge, therefore, needs to be done in a manner that while it compensates the distribution licensee, it does not constrain introduction of competition through open access. A consumer would avail of open access only if the payment of all the charges leads to a benefit to him. While the interest of distribution licensee needs to be protected it would be essential that this provision of the Act, which requires the open access to be introduced in a time-bound manner, is used to bring about competition in the larger interest of consumers.

SERCs may calculate the cost of supply of electricity by the distribution licensee to consumers of the applicable class as aggregate of (a) per unit weighted average cost of power purchase including meeting the Renewable Purchase Obligation; (b) transmission and distribution losses applicable to the relevant voltage level and commercial losses allowed by the SERC; (c) transmission, distribution and wheeling charges up to the relevant voltage level; and (d) per unit cost of carrying regulatory assets, if applicable.

Surcharge formula:

$S = T - [C/(1-L/100) + D + R]$

Where

S is the surcharge

T is the tariff payable by the relevant category of consumers, including reflecting the Renewable Purchase Obligation

C is the per unit weighted average cost of power purchase by the Licensee, including meeting the Renewable Purchase Obligation

D is the aggregate of transmission, distribution and wheeling charge applicable to the relevant voltage level

L is the aggregate of transmission, distribution and commercial losses, expressed as a percentage applicable to the relevant voltage level

R is the per unit cost of carrying regulatory assets.

Above formula may not work for all distribution licensees, particularly for those having power deficit, the State Regulatory Commissions, while keeping the overall objectives of the Electricity Act in view, may review and vary the same taking into consideration the different circumstances prevailing in the area of distribution licensee.

Provided that the surcharge shall not exceed 20% of the tariff applicable to the category of the consumers seeking open access.

Provided further that the Appropriate Commission, in consultation with the Appropriate Government, shall exempt levy of cross subsidy charge on the Railways, as defined in Indian Railways Act, 1989 being a deemed licensee, on electricity purchased for its own consumption.

8.5.2 No surcharge would be required to be paid in terms of sub-section (2) of Section 42 of the Act on the electricity being sold by the generating companies with consent of the competent government under Section 43(A)(1)(c) of the Electricity Act, 1948 (now repealed) and on the electricity being supplied by the distribution licensee on the authorisation by the State Government under Section 27 of the Indian Electricity Act, 1910 (now repealed), till the current validity of such consent or authorisation.

8.5.3 The surcharge may be collected either by the distribution licensee, the transmission licensee, the STU or the CTU, depending on whose facilities are used by the consumer for availing electricity supplies. In all cases the amounts collected from a particular consumer should be given to the distribution licensee in whose area the

consumer is located. In case of two licensees supplying in the same area, the licensee from whom the consumer was availing supply shall be paid the amounts collected.

8.5.4 The additional surcharge for obligation to supply as per section 42(4) of the Act should become applicable only if it is conclusively demonstrated that the obligation of a licensee, in terms of existing power purchase commitments, has been and continues to be stranded, or there is an unavoidable obligation and incidence to bear fixed costs consequent to such a contract. The fixed costs related to network assets would be recovered through wheeling charges.

8.5.5 Wheeling charges should be determined on the basis of same principles as laid down for intra-state transmission charges and in addition would include average loss compensation of the relevant voltage level.

8.5.6 In case of outages of generator supplying to a consumer on open access, standby arrangements should be provided by the licensee on the payment of tariff for temporary connection to that consumer category as specified by the Appropriate Commission. Provided that such charges shall not be more than 125 percent of the normal tariff of that category.

9.0 Trading Margin

The Act provides that the Appropriate Commission may fix the trading margin, if considered necessary. Though there is a need to promote trading in electricity for making the markets competitive, the Appropriate Commission should monitor the trading transactions continuously and ensure that the electricity traders do not indulge in profiteering in situation of power shortages. Fixing of trading margin should be resorted to for achieving this objective.

JYOTI ARORA, Jt. Secy

APPENDIX

SALIENT FEATURES OF THE APPROVED R&R PROVISIONS FOR HYDRO POWER PROJECTS

1. SCOPE OF COVERAGE

The following provisions shall be applicable even if one family is affected by the development of a Hydro Power Project.

2. DEFINITION OF PROJECT AFFECTED FAMILIES (PAFs)

A Project Affected Family (PAF) shall mean a family whose place of residence or other property or source of livelihood has been affected by the development of a hydro project and who have been residing in the affected zone for two years preceding the date of declaration of notification under Section-11 of the LARR Act. The affected family would also include squatters.

3. DEFINITION OF AGRICULTURAL LABOURER

A person normally residing in the affected zone for two years preceding the date of declaration of the affected zone and earns his/her livelihood principally by manual labour on agricultural land.

4. DEFINITION OF NON-AGRICULTURAL LABOURER

A person normally residing in the affected zone for two years preceding the date of declaration of the affected zone and who does not hold any land in the affected zone but earns his/her livelihood principally by manual labour or as rural artisan or a service provider to the community.

5. DEFINITION OF SQUATTERS

A family occupying Government land in the affected zone without a legal title, at least for 5 years prior to the date of declaration of notification under Section-11 of LARR Act.

6. REHABILITATION/RESETTLEMENT COLONIES

This policy aims to provide built up houses to Project Affected Families (PAFs) who get displaced due to the development of hydro projects to the extent possible. However, wherever opted for, liberal House Construction Allowance would be given in lieu.

7. TRAINING AND CAPACITY BUILDING

This policy also emphasizes the need to provide training to the Project Affected Families as well as to the local population for a sustained livelihood. Special training programmes from ITIs aimed at providing the required skills

to the local population would be undertaken by the Project developers at least six months prior to commencement of construction. This is expected to boost the employability of the PAFs and other people residing in the vicinity of the project.

8. ADDITIONAL PROVISIONS

This policy envisages additional provisions for Project Affected Families such as:

- scholarships for meritorious students,
- extension of medical facilities,
- marriage grants,
- subsistence grants,
- support for income generation schemes for cooperative and self-help groups,
- seed, pesticides and fertilizer subsidies, and irrigation support.

Besides the additional provisions mentioned above, the normally applicable provisions of the National Policy on Rehabilitation and resettlement, currently in force, would be applicable.

Printed by the Manager, Government of India Press, Ring Road, Mayapuri, New Delhi-110064
and Published by the Controller of Publications, Delhi-110054.

National Electricity Policy

The Gazette of India

EXTRAORDINARY

PART I - Section 1

PUBLISHED BY AUTHORITY

No...., New Delhi, Dated ....

Ministry of Power

New Delhi,

Dated the 12th, February, 2005

RESOLUTION

No. 23/40/2004-R&R (Vol.II)

1.0 INTRODUCTION

1.1 In compliance with section 3 of the Electricity Act 2003 the Central Government hereby notifies the National Electricity Policy.

1.2 Electricity is an essential requirement for all facets of our life. It has been recognized as a basic human need. It is a critical infrastructure on which the socio-economic development of the country depends. Supply of electricity at reasonable rate to rural India is essential for its overall development. Equally important is availability of reliable and quality power at competitive rates to Indian industry to make it globally competitive and to enable it to exploit the tremendous potential of employment generation. Services sector has made significant contribution to the growth of our economy. Availability of quality supply of electricity is very crucial to sustained growth of this segment.

1.3 Recognizing that electricity is one of the key drivers for rapid economic growth and poverty alleviation, the nation has set itself the target of providing access to all households in next five years. As per Census 2001, about 44% of the households do not have access to electricity. Hence meeting the target of providing universal access is a daunting task requiring significant addition to generation capacity and expansion of the transmission and distribution network.

1.4 Indian Power sector is witnessing major changes. Growth of Power Sector in India since its Independence has been noteworthy. However, the demand for power has been outstripping the growth of availability. Substantial peak and energy shortages prevail in the country. This is due to inadequacies in generation, transmission & distribution as well as inefficient use of electricity. Very high level of technical and commercial losses and lack of commercial approach in management of utilities has led to unsustainable financial operations. Cross-subsidies have risen to unsustainable levels. Inadequacies in distribution networks has been one of the major reasons for poor quality of supply.

1.5 Electricity industry is capital-intensive having long gestation period. Resources of power generation are unevenly dispersed across the country. Electricity is a commodity that can not be stored in the grid where demand and supply have to be continuously balanced. The widely distributed and rapidly increasing demand requirements of the country need to be met in an

optimum manner.

1.6 Electricity Act, 2003 provides an enabling framework for accelerated and more efficient development of the power sector. The Act seeks to encourage competition with appropriate regulatory intervention. Competition is expected to yield efficiency gains and in turn result in availability of quality supply of electricity to consumers at competitive rates.

1.7 Section 3 (1) of the Electricity Act 2003 requires the Central Government to formulate, inter alia, the National Electricity Policy in consultation with Central Electricity Authority (CEA) and State Governments. The provision is quoted below:

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

Section 3 (3) of the Act enables the Central Government to review or revise the National Electricity Policy from time to time.

1.8 The National Electricity Policy aims at laying guidelines for accelerated development of the power sector, providing supply of electricity to all areas and protecting interests of consumers and other stakeholders keeping in view availability of energy resources, technology available to exploit these resources, economics of generation using different resources, and energy security issues.

1.9 The National Electricity Policy has been evolved in consultation with and taking into account views of the State Governments, Central Electricity Authority (CEA), Central Electricity Regulatory Commission (CERC) and other stakeholders.

2.0 AIMS & OBJECTIVES

The National Electricity Policy aims at achieving the following objectives:

- Access to Electricity - Available for all households in next five years
- Availability of Power - Demand to be fully met by 2012. Energy and peaking shortages to be overcome and adequate spinning reserve to be available.
- Supply of Reliable and Quality Power of specified standards in an efficient manner and at reasonable rates.
- Per capita availability of electricity to be increased to over 1000 units by 2012.
- Minimum lifeline consumption of 1 unit/household/day as a merit good by year 2012.
- Financial Turnaround and Commercial Viability of Electricity Sector.
- Protection of consumers' interests.

3. NATIONAL ELECTRICITY PLAN

3.1 Assessment of demand is an important pre-requisite for planning capacity addition. Section 3 (4) of the Act requires the Central Electricity Authority (CEA) to frame a National Electricity Plan once in five years and revise the same from time to time in accordance with the National Electricity Policy. Also, section 73 (a) provides that formulation of short-term and perspective plans for development of the electricity system and coordinating the activities of various planning agencies for the optimal utilization of resources to subserve the interests of the

national economy shall be one of the functions of the CEA. The Plan prepared by CEA and approved by the Central Government can be used by prospective generating companies, transmission utilities and transmission/distribution licensees as reference document.

3.2 Accordingly, the CEA shall prepare short-term and perspective plan. The National Electricity Plan would be for a short-term framework of five years while giving a 15 year perspective and would include:

- Short-term and long term demand forecast for different regions;
- Suggested areas/locations for capacity additions in generation and transmission keeping in view the economics of generation and transmission, losses in the system, load centre requirements, grid stability, security of supply, quality of power including voltage profile etc. and environmental considerations including rehabilitation and resettlement;
- Integration of such possible locations with transmission system and development of national grid including type of transmission systems and requirement of redundancies; and
- Different technologies available for efficient generation, transmission and distribution.
- Fuel choices based on economy, energy security and environmental considerations.

3.3 While evolving the National Electricity Plan, CEA will consult all the stakeholders including state governments and the state governments would, at state level, undertake this exercise in coordination with stakeholders including distribution licensees and STUs. While conducting studies periodically to assess short-term and long-term demand, projections made by distribution utilities would be given due weightage. CEA will also interact with institutions and agencies having economic expertise, particularly in the field of demand forecasting. Projected growth rates for different sectors of the economy will also be taken into account in the exercise of demand forecasting.

3.4 The National Electricity Plan for the ongoing 10th Plan period and 11th Plan and perspective Plan for the 10th, 11th & 12th Plan periods would be prepared and notified after reviewing and revising the existing Power Plan prepared by CEA. This will be done within six months.

4.0 ISSUES ADDRESSED

The policy seeks to address the following issues:

- Rural Electrification
- Generation
- Transmission
- Distribution
- Recovery of Cost of services & Targetted Subsidies.
- Technology Development and Research and Development (R&D)
- Competition aimed at Consumer Benefits
- Financing Power Sector Programmes Including Private Sector Participation.
- Energy Conservation
- Environmental Issues

- Training and Human Resource Development
- Cogeneration and Non-Conventional Energy Sources
- Protection of Consumer interests and Quality Standards

5.1 RURAL ELECTRIFICATION

5.1.1 The key development objective of the power sector is supply of electricity to all areas including rural areas as mandated in section 6 of the Electricity Act. Both the central government and state governments would jointly endeavour to achieve this objective at the earliest. Consumers, particularly those who are ready to pay a tariff which reflects efficient costs have the right to get uninterrupted twenty four hours supply of quality power. About 56% of rural households have not yet been electrified even though many of these households are willing to pay for electricity. Determined efforts should be made to ensure that the task of rural electrification for securing electricity access to all households and also ensuring that electricity reaches poor and marginal sections of the society at reasonable rates is completed within the next five years.

5.1.2 Reliable rural electrification system will aim at creating the following:

(a) Rural Electrification Distribution Backbone (REDB) with at least one 33/11 kv (or 66/11 kv) substation in every Block and more if required as per load, networked and connected appropriately to the state transmission system

(b) Emanating from REDB would be supply feeders and one distribution transformer at least in every village settlement.

(c) Household Electrification from distribution transformer to connect every household on demand.

(d) Wherever above is not feasible (it is neither cost effective nor the optimal solution to provide grid connectivity) decentralized distributed generation facilities together with local distribution network would be provided so that every household gets access to electricity. This would be done either through conventional or non-conventional methods of electricity generation whichever is more suitable and economical. Non-conventional sources of energy could be utilized even where grid connectivity exists provided it is found to be cost effective.

(e) Development of infrastructure would also cater for requirement of agriculture & other economic activities including irrigation pump sets, small and medium industries, khadi and village industries, cold chain and social services like health and education.

5.1.3 Particular attention would be given in household electrification to dalit bastis, tribal areas and other weaker sections.

5.1.4 Rural Electrification Corporation of India, a Government of India enterprise will be the nodal agency at Central Government level to implement the programme for achieving the goal set by National Common Minimum Programme of giving access to electricity to all the households in next five years. Its role is being suitably enlarged to ensure timely implementation of rural electrification projects.

5.1.5 Targetted expansion in access to electricity for rural households in the desired timeframe can be achieved if the distribution licensees recover at least the cost of electricity and related O&M expenses from consumers, except for lifeline support to households below the poverty line who would need to be adequately subsidized. Subsidies should be properly targeted at the intended beneficiaries in the most efficient manner. Government recognizes the need for

providing necessary capital subsidy and soft long-term debt finances for investment in rural electrification as this would reduce the cost of supply in rural areas. Adequate funds would need to be made available for the same through the Plan process. Also commensurate organizational support would need to be created for timely implementation. The Central Government would assist the State Governments in achieving this.

5.1.6 Necessary institutional framework would need to be put in place not only to ensure creation of rural electrification infrastructure but also to operate and maintain supply system for securing reliable power supply to consumers. Responsibility of operation & maintenance and cost recovery could be discharged by utilities through appropriate arrangements with Panchayats, local authorities, NGOs and other franchisees etc.

5.1.7 The gigantic task of rural electrification requires appropriate cooperation among various agencies of the State Governments, Central Government and participation of the community. Education and awareness programmes would be essential for creating demand for electricity and for achieving the objective of effective community participation.

5.2 GENERATION

5.2.1 Inadequacy of generation has characterized power sector operation in India. To provide availability of over 1000 units of per capita electricity by year 2012 it had been estimated that need based capacity addition of more than 1,00,000 MW would be required during the period 2002-12.

5.2.2 The Government of India has initiated several reform measures to create a favourable environment for addition of new generating capacity in the country. The Electricity Act 2003 has put in place a highly liberal framework for generation. There is no requirement of licensing for generation. The requirement of techno-economic clearance of CEA for thermal generation project is no longer there. For hydroelectric generation also, the limit of capital expenditure, above which concurrence of CEA is required, would be raised suitably from the present level. Captive generation has been freed from all controls.

5.2.3 In order to fully meet both energy and peak demand by 2012, there is a need to create adequate reserve capacity margin. In addition to enhancing the overall availability of installed capacity to 85%, a spinning reserve of at least 5%, at national level, would need to be created to ensure grid security and quality and reliability of power supply.

5.2.4 The progress of implementation of capacity addition plans and growth of demand would need to be constantly monitored and necessary adjustments made from time to time. In creating new generation capacities, appropriate technology may be considered keeping in view the likely widening of the difference between peak demand and the base load.

Hydro Generation

5.2.5 Hydroelectricity is a clean and renewable source of energy. Maximum emphasis would be laid on the full development of the feasible hydro potential in the country. The 50,000 MW hydro initiative has been already launched and is being vigorously pursued with DPRs for projects of 33,000 MW capacity already under preparation.

5.2.6 Harnessing hydro potential speedily will also facilitate economic development of States, particularly North-Eastern States, Sikkim, Uttaranchal, Himachal Pradesh and J&K, since a large proportion of our hydro power potential is located in these States. The States with hydro potential need to focus on the full development of these potentials at the earliest.

5.2.7 Hydel projects call for comparatively larger capital investment. Therefore, debt financing of longer tenure would need to be made available for hydro projects. Central Government is

committed to policies that ensure financing of viable hydro projects.

5.2.8 State Governments need to review procedures for land acquisition, and other approvals/clearances for speedy implementation of hydroelectric projects.

5.2.9 The Central Government will support the State Governments for expeditious development of their hydroelectric projects by offering services of Central Public Sector Undertakings like National Hydroelectric Power Corporation (NHPC).

5.2.10 Proper implementation of National Policy on Rehabilitation and Resettlement (R&R) would be essential in this regard so as to ensure that the concerns of project-affected families are addressed adequately.

5.2.11 Adequate safeguards for environmental protection with suitable mechanism for monitoring of implementation of Environmental Action Plan and R&R Schemes will be put in place.

Thermal Generation

5.2.12 Even with full development of the feasible hydro potential in the country, coal would necessarily continue to remain the primary fuel for meeting future electricity demand.

5.2.13 Imported coal based thermal power stations, particularly at coastal locations, would be encouraged based on their economic viability. Use of low ash content coal would also help in reducing the problem of fly ash emissions.

5.2.14 Significant Lignite resources in the country are located in Tamil Nadu, Gujarat and Rajasthan and these should be increasingly utilized for power generation. Lignite mining technology needs to be improved to reduce costs.

5.2.15 Use of gas as a fuel for power generation would depend upon its availability at reasonable prices. Natural gas is being used in Gas Turbine /Combined Cycle Gas Turbine (GT/CCGT) stations, which currently accounts for about 10 % of total capacity. Power sector consumes about 40% of the total gas in the country. New power generation capacity could come up based on indigenous gas findings, which can emerge as a major source of power generation if prices are reasonable. A national gas grid covering various parts of the country could facilitate development of such capacities.

5.2.16 Imported LNG based power plants are also a potential source of electricity and the pace of their development would depend on their commercial viability. The existing power plants using liquid fuels should shift to use of Natural Gas/LNG at the earliest to reduce the cost of generation.

5.2.17 For thermal power, economics of generation and supply of electricity should be the basis for choice of fuel from among the options available. It would be economical for new generating stations to be located either near the fuel sources e.g. pithead locations or load centres.

5.2.18 Generating companies may enter into medium to long-term fuel supply agreements specially with respect to imported fuels for commercial viability and security of supply.

Nuclear Power

5.2.19 Nuclear power is an established source of energy to meet base load demand. Nuclear power plants are being set up at locations away from coalmines. Share of nuclear power in the overall capacity profile will need to be increased significantly. Economics of generation and resultant tariff will be, among others, important considerations. Public sector investments to create nuclear generation capacity will need to be stepped up. Private sector partnership would

also be facilitated to see that not only targets are achieved but exceeded.

Non-conventional Energy Sources

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

Renovation and Modernization (R&M)

5.2.21 One of the major achievements of the power sector has been a significant increase in availability and plant load factor of thermal power stations specially over the last few years. Renovation and modernization for achieving higher efficiency levels needs to be pursued vigorously and all existing generation capacity should be brought to minimum acceptable standards. The Govt. of India is providing financial support for this purpose.

5.2.22 For projects performing below acceptable standards, R&M should be undertaken as per well-defined plans featuring necessary cost-benefit analysis. If economic operation does not appear feasible through R&M, then there may be no alternative to closure of such plants as the last resort.

5.2.23 In cases of plants with poor O&M record and persisting operational problems, alternative strategies including change of management may need to be considered so as to improve the efficiency to acceptable levels of these power stations.

Captive Generation

5.2.24 The liberal provision in the Electricity Act, 2003 with respect to setting up of captive power plant has been made with a view to not only securing reliable, quality and cost effective power but also to facilitate creation of employment opportunities through speedy and efficient growth of industry.

5.2.25 The provision relating to captive power plants to be set up by group of consumers is primarily aimed at enabling small and medium industries or other consumers that may not individually be in a position to set up plant of optimal size in a cost effective manner. It needs to be noted that efficient expansion of small and medium industries across the country would lead to creation of enormous employment opportunities.

5.2.26 A large number of captive and standby generating stations in India have surplus capacity that could be supplied to the grid continuously or during certain time periods. These plants offer a sizeable and potentially competitive capacity that could be harnessed for meeting demand for power. Under the Act, captive generators have access to licensees and would get access to consumers who are allowed open access. Grid inter-connections for captive generators shall be facilitated as per section 30 of the Act. This should be done on priority basis to enable captive generation to become available as distributed generation along the grid. Towards this end, non-conventional energy sources including co-generation could also play a role. Appropriate commercial arrangements would need to be instituted between licensees and the captive generators for harnessing of spare capacity energy from captive power plants. The appropriate Regulatory Commission shall exercise regulatory oversight on such commercial arrangements between captive generators and licensees and determine tariffs when a licensee is the off-taker of power from captive plant.

5.3 TRANSMISSION

5.3.1 The Transmission System requires adequate and timely investments and also efficient and

coordinated action to develop a robust and integrated power system for the country.

5.3.2 Keeping in view the massive increase planned in generation and also for development of power market, there is need for adequately augmenting transmission capacity. While planning new generation capacities, requirement of associated transmission capacity would need to be worked out simultaneously in order to avoid mismatch between generation capacity and transmission facilities. The policy emphasizes the following to meet the above objective:

- The Central Government would facilitate the continued development of the National Grid for providing adequate infrastructure for inter-state transmission of power and to ensure that underutilized generation capacity is facilitated to generate electricity for its transmission from surplus regions to deficit regions.

- The Central Transmission Utility (CTU) and State Transmission Utility (STU) have the key responsibility of network planning and development based on the National Electricity Plan in coordination with all concerned agencies as provided in the Act. The CTU is responsible for the national and regional transmission system planning and development. The STU is responsible for planning and development of the intra-state transmission system. The CTU would need to coordinate with the STUs for achievement of the shared objective of eliminating transmission constraints in cost effective manner.

- Network expansion should be planned and implemented keeping in view the anticipated transmission needs that would be incident on the system in the open access regime. Prior agreement with the beneficiaries would not be a pre-condition for network expansion. CTU/STU should undertake network expansion after identifying the requirements in consultation with stakeholders and taking up the execution after due regulatory approvals.

- Structured information dissemination and disclosure procedures should be developed by the CTU and STUs to ensure that all stakeholders are aware of the status of generation and transmission projects and plans. These should form a part of the overall planning procedures.

- The State Regulatory Commissions who have not yet notified the grid code under the Electricity Act 2003 should notify the same not later than September 2005.

5.3.3 Open access in transmission has been introduced to promote competition amongst the generating companies who can now sell to different distribution licensees across the country. This should lead to availability of cheaper power. The Act mandates non-discriminatory open access in transmission from the very beginning. When open access to distribution networks is introduced by the respective State Commissions for enabling bulk consumers to buy directly from competing generators, competition in the market would increase the availability of cheaper and reliable power supply. The Regulatory Commissions need to provide facilitative framework for non-discriminatory open access. This requires load dispatch facilities with state-of-the art communication and data acquisition capability on a real time basis. While this is the case currently at the regional load dispatch centers, appropriate State Commissions must ensure that matching facilities with technology upgrades are provided at the State level, where necessary and realized not later than June 2006.

5.3.4 The Act prohibits the State transmission utilities/transmission licensees from engaging in trading in electricity. Power purchase agreements (PPAs) with the generating companies would need to be suitably assigned to the Distribution Companies, subject to mutual agreement. To the extent necessary, such assignments can be done in a manner to take care of different load profiles of the Distribution Companies. Non-discriminatory open access shall be provided to competing generators supplying power to licensees upon payment of transmission charge to be determined by the appropriate Commission. The appropriate Commissions shall establish such transmission charges no later than June 2005.

5.3.5 To facilitate orderly growth and development of the power sector and also for secure and

reliable operation of the grid, adequate margins in transmission system should be created. The transmission capacity would be planned and built to cater to both the redundancy levels and margins keeping in view international standards and practices. A well planned and strong transmission system will ensure not only optimal utilization of transmission capacities but also of generation facilities and would facilitate achieving ultimate objective of cost effective delivery of power. To facilitate cost effective transmission of power across the region, a national transmission tariff framework needs to be implemented by CERC. The tariff mechanism would be sensitive to distance, direction and related to quantum of flow. As far as possible, consistency needs to be maintained in transmission pricing framework in inter-State and intra-State systems. Further it should be ensured that the present network deficiencies do not result in unreasonable transmission loss compensation requirements.

5.3.6 The necessary regulatory framework for providing non-discriminatory open access in transmission as mandated in the Electricity Act 2003 is essential for signalling efficient choice in locating generation capacity and for encouraging trading in electricity for optimum utilization of generation resources and consequently for reducing the cost of supply.

5.3.7 The spirit of the provisions of the Act is to ensure independent system operation through NLDC, RLDCs and SLDCs. These dispatch centers, as per the provisions of the Act, are to be operated by a Government company or authority as notified by the appropriate Government. However, till such time these agencies/authorities are established the Act mandates that the CTU or STU, as the case may be, shall operate the RLDCs or SLDC. The arrangement of CTU operating the RLDCs would be reviewed by the Central Government based on experience of working with the existing arrangement. A view on this aspect would be taken by the Central Government by December 2005.

5.3.8 The Regional Power Committees as envisaged in section section 2(55) would be constituted by the Government of India within two months with representation from various stakeholders.

5.3.9 The National Load Despatch Centre (NLDC) along with its constitution and functions as envisaged in Section 26 of the Electricity Act 2003 would be notified within three months. RLDCs and NLDC will have complete responsibility and commensurate authority for smooth operation of the grid irrespective of the ownership of the transmission system, be it under CPSUs, State Utility or private sector.

5.3.10 Special mechanisms would be created to encourage private investment in transmission sector so that sufficient investments are made for achieving the objective of demand to be fully met by 2012.

5.4 DISTRIBUTION

5.4.1 Distribution is the most critical segment of the electricity business chain. The real challenge of reforms in the power sector lies in efficient management of the distribution sector.

5.4.2 The Act provides for a robust regulatory framework for distribution licensees to safeguard consumer interests. It also creates a competitive framework for the distribution business, offering options to consumers, through the concepts of open access and multiple licensees in the same area of supply.

5.4.3 For achieving efficiency gains proper restructuring of distribution utilities is essential. Adequate transition financing support would also be necessary for these utilities. Such support should be arranged linked to attainment of predetermined efficiency improvements and reduction in cash losses and putting in place appropriate governance structure for insulating the service providers from extraneous interference while at the same time ensuring transparency and accountability. For ensuring financial viability and sustainability, State Governments would

need to restructure the liabilities of the State Electricity Boards to ensure that the successor companies are not burdened with past liabilities. The Central Government would also assist the States, which develop a clear roadmap for turnaround, in arranging transition financing from various sources which shall be linked to predetermined improvements and efficiency gains aimed at attaining financial viability and also putting in place appropriate governance structures.

5.4.4 Conducive business environment in terms of adequate returns and suitable transitional model with predetermined improvements in efficiency parameters in distribution business would be necessary for facilitating funding and attracting investments in distribution. Multi-Year Tariff (MYT) framework is an important structural incentive to minimize risks for utilities and consumers, promote efficiency and rapid reduction of system losses. It would serve public interest through economic efficiency and improved service quality. It would also bring greater predictability to consumer tariffs by restricting tariff adjustments to known indicators such as power purchase prices and inflation indices. Private sector participation in distribution needs to be encouraged for achieving the requisite reduction in transmission and distribution losses and improving the quality of service to the consumers.

5.4.5 The Electricity Act 2003 enables competing generating companies and trading licensees, besides the area distribution licensees, to sell electricity to consumers when open access in distribution is introduced by the State Electricity Regulatory Commissions. As required by the Act, the SERCs shall notify regulations by June 2005 that would enable open access to distribution networks in terms of sub-section 2 of section 42 which stipulates that such open access would be allowed, not later than five years from 27th January 2004 to consumers who require a supply of electricity where the maximum power to be made available at any time exceeds one mega watt. Section 49 of the Act provides that such consumers who have been allowed open access under section 42 may enter into agreement with any person for supply of electricity on such terms and conditions, including tariff, as may be agreed upon by them. While making regulations for open access in distribution, the SERCs will also determine wheeling charges and cross-subsidy surcharge as required under section 42 of the Act.

5.4.6 A time-bound programme should be drawn up by the State Electricity Regulatory Commissions (SERC) for segregation of technical and commercial losses through energy audits. Energy accounting and declaration of its results in each defined unit, as determined by SERCs, should be mandatory not later than March 2007. An action plan for reduction of the losses with adequate investments and suitable improvements in governance should be drawn up. Standards for reliability and quality of supply as well as for loss levels shall also be specified ,from time to time, so as to bring these in line with international practices by year 2012.

5.4.7 One of the key provisions of the Act on competition in distribution is the concept of multiple licensees in the same area of supply through their independent distribution systems. State Governments have full flexibility in carving out distribution zones while restructuring the Government utilities. For grant of second and subsequent distribution licence within the area of an incumbent distribution licensee, a revenue district, a Municipal Council for a smaller urban area or a Municipal Corporation for a larger urban area as defined in the Article 243(Q) of Constitution of India (74th Amendment) may be considered as the minimum area. The Government of India would notify within three months, the requirements for compliance by applicant for second and subsequent distribution licence as envisaged in Section 14 of the Act. With a view to provide benefits of competition to all section of consumers, the second and subsequent licensee for distribution in the same area shall have obligation to supply to all consumers in accordance with provisions of section 43 of the Electricity Act 2003. The SERCs are required to regulate the tariff including connection charges to be recovered by a distribution licensee under the provisions of the Act. This will ensure that second distribution licensee does not resort to cherry picking by demanding unreasonable connection charges from consumers.

5.4.8 The Act mandates supply of electricity through a correct meter within a stipulated period.

The Authority should develop regulations as required under Section 55 of the Act within three months.

5.4.9 The Act requires all consumers to be metered within two years. The SERCs may obtain from the Distribution Licensees their metering plans, approve these, and monitor the same. The SERCs should encourage use of pre-paid meters. In the first instance, TOD meters for large consumers with a minimum load of one MVA are also to be encouraged. The SERCs should also put in place independent third-party meter testing arrangements.

5.4.10 Modern information technology systems may be implemented by the utilities on a priority basis, after considering cost and benefits, to facilitate creation of network information and customer data base which will help in management of load, improvement in quality, detection of theft and tampering, customer information and prompt and correct billing and collection . Special emphasis should be placed on consumer indexing and mapping in a time bound manner. Support is being provided for information technology based systems under the Accelerated Power Development and Reforms Programme (APDRP).

5.4.11 High Voltage Distribution System is an effective method for reduction of technical losses, prevention of theft, improved voltage profile and better consumer service. It should be promoted to reduce LT/HT ratio keeping in view the techno economic considerations.

5.4.12 SCADA and data management systems are useful for efficient working of Distribution Systems. A time bound programme for implementation of SCADA and data management system should be obtained from Distribution Licensees and approved by the SERCs keeping in view the techno economic considerations. Efforts should be made to install substation automation equipment in a phased manner.

5.4.13 The Act has provided for stringent measures against theft of electricity. The States and distribution utilities should ensure effective implementation of these provisions. The State Governments may set up Special Courts as envisaged in Section 153 of the Act.

5.5 RECOVERY OF COST OF SERVICES & TARGETTED SUBSIDIES

5.5.1 There is an urgent need for ensuring recovery of cost of service from consumers to make the power sector sustainable.

5.5.2 A minimum level of support may be required to make the electricity affordable for consumers of very poor category. Consumers below poverty line who consume below a specified level, say 30 units per month, may receive special support in terms of tariff which are cross-subsidized. Tariffs for such designated group of consumers will be at least 50 % of the average (overall) cost of supply. This provision will be further re-examined after five years.

5.5.3 Over the last few decades cross-subsidies have increased to unsustainable levels. Cross-subsidies hide inefficiencies and losses in operations. There is urgent need to correct this imbalance without giving tariff shock to consumers. The existing cross-subsidies for other categories of consumers would need to be reduced progressively and gradually.

5.5.4 The State Governments may give advance subsidy to the extent they consider appropriate in terms of section 65 of the Act in which case necessary budget provision would be required to be made in advance so that the utility does not suffer financial problems that may affect its operations. Efforts would be made to ensure that the subsidies reach the targeted beneficiaries in the most transparent and efficient way.

5.6 TECHNOLOGY DEVELOPMENT AND R&D

5.6.1 Effective utilization of all available resources for generation, transmission and distribution

of electricity using efficient and cost effective technologies is of paramount importance. Operations and management of vast and complex power systems require coordination among the multiple agencies involved. Effective control of power system at state, regional and national level can be achieved only through use of Information Technology. Application of IT has great potential in reducing technical & commercial losses in distribution and providing consumer friendly services. Integrated resource planning and demand side management would also require adopting state of the art technologies.

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

5.6.2 Efficient technologies, like super critical technology, IGCC etc and large size units would be gradually introduced for generation of electricity as their cost effectiveness is established. Simultaneously, development and deployment of technologies for productive use of fly ash would be given priority and encouragement.

5.6.3 Similarly, cost effective technologies would require to be developed for high voltage power flows over long distances with minimum possible losses. Specific information technology tools need to be developed for meeting the requirements of the electricity industry including highly sophisticated control systems for complex generation and transmission operations, efficient distribution business and user friendly consumer interface.

5.6.4 The country has a strong research and development base in the electricity sector which would be further augmented. R&D activities would be further intensified and Missions will be constituted for achieving desired results in identified priority areas. A suitable funding mechanism would be evolved for promoting R& D in the Power Sector. Large power companies should set aside a portion of their profits for support to R&D.

5.7 COMPETITION AIMED AT CONSUMER BENEFITS

5.7.1 To promote market development, a part of new generating capacities, say 15% may be sold outside long-term PPAs . As the power markets develop, it would be feasible to finance projects with competitive generation costs outside the long-term power purchase agreement framework. In the coming years, a significant portion of the installed capacity of new generating stations could participate in competitive power markets. This will increase the depth of the power markets and provide alternatives for both generators and licensees/consumers and in long run would lead to reduction in tariff. For achieving this, the policy underscores the following:-

a. It is the function of the Central Electricity Regulatory Commission to issue license for inter-state trading which would include authorization for trading throughout the country.

b. The ABT regime introduced by CERC at the national level has had a positive impact. It has also enabled a credible settlement mechanism for intra-day power transfers from licenses with surpluses to licenses experiencing deficits. SERCs are advised to introduce the ABT regime at the State level within one year.

c. Captive generating plants should be permitted to sell electricity to licensees and consumers when they are allowed open access by SERCs under section 42 of the Act .

d. Development of power market would need to be undertaken by the Appropriate Commission in consultation with all concerned.

e. The Central Commission and the State Commissions are empowered to make regulations under section 178 and section 181 of the Act respectively. These regulations will ensure implementation of various provisions of the Act regarding encouragement to competition and also consumer protection. The Regulatory Commissions are advised to notify various

regulations expeditiously.

f. Enabling regulations for inter and intra State trading and also regulations on power exchange shall be notified by the appropriate Commissions within six months.

5.8 FINANCING POWER SECTOR PROGRAMMES INCLUDING PRIVATE SECTOR PARTICIPATION

5.8.1 To meet the objective of rapid economic growth and "power for all" including household electrification, it is estimated that an investment of the order of Rs.9,00,000 crores at 2002-03 price level would be required to finance generation, transmission, sub-transmission, distribution and rural electrification projects. Power being most crucial infrastructure, public sector investments, both at the Central Government and State Governments, will have to be stepped up. Considering the magnitude of the expansion of the sector required, a sizeable part of the investments will also need to be brought in from the private sector. The Act creates a conducive environment for investments in all segments of the industry, both for public sector and private sector, by removing barrier to entry in different segments. Section 63 of the Act provides for participation of suppliers on competitive basis in different segments which will further encourage private sector investment. Public service obligations like increasing access to electricity to rural households and small and marginal farmers have highest priority over public finances.

5.8.2 The public sector should be able to raise internal resources so as to at least meet the equity requirement of investments even after suitable gross budgetary support from the Government at the Centre and in the states in order to complete their on-going projects in a time-bound manner. Expansion of public sector investments would be dependent on the financial viability of the proposed projects. It would, therefore, be imperative that an appropriate surplus is generated through return on investments and, at the same time, depreciation reserve created so as to fully meet the debt service obligation. This will not only enable financial closure but also bankability of the project would be improved for expansion programmes, with the Central and State level public sector organizations, as also private sector projects, being in a position to fulfil their obligations toward equity funding and debt repayments.

5.8.3 Under sub-section (2) of Section 42 of the Act, a surcharge is to be levied by the respective State Commissions on consumers switching to alternate supplies under open access. This is to compensate the host distribution licensee serving such consumers who are permitted open access under section 42(2), for loss of the cross-subsidy element built into the tariff of such consumers. An additional surcharge may also be levied under sub-section (4) of Section 42 for meeting the fixed cost of the distribution licensee arising out of his obligation to supply in cases where consumers are allowed open access. The amount of surcharge and additional surcharge levied from consumers who are permitted open access should not become so onerous that it eliminates competition that is intended to be fostered in generation and supply of power directly to consumers through the provision of Open Access under Section 42(2) of the Act. Further it is essential that the Surcharge be reduced progressively in step with the reduction of cross-subsidies as foreseen in Section 42(2) of the Electricity Act 2003.

5.8.4 Capital is scarce. Private sector will have multiple options for investments. Return on investment will, therefore, need to be provided in a manner that the sector is able to attract adequate investments at par with, if not in preference to, investment opportunities in other sectors. This would obviously be based on a clear understanding and evaluation of opportunities and risks. An appropriate balance will have to be maintained between the interests of consumers and the need for investments.

5.8.5 All efforts will have to be made to improve the efficiency of operations in all the segments of the industry. Suitable performance norms of operations together with incentives and disincentives will need to be evolved along with appropriate arrangement for sharing the gains

of efficient operations with the consumers . This will ensure protection of consumers' interests on the one hand and provide motivation for improving the efficiency of operations on the other.

5.8.6 Competition will bring significant benefits to consumers , in which case, it is competition which will determine the price rather than any cost plus exercise on the basis of operating norms and parameters. All efforts will need to be made to bring the power industry to this situation as early as possible, in the overall interest of consumers. Detailed guidelines for competitive bidding as stipulated in section 63 of the Act have been issued by the Central Government.

5.8.7 It will be necessary that all the generating companies, transmission licensees and distribution licensees receive due payments for effective discharge of their operational obligations as also for enabling them to make fresh investments needed for the expansion programmes. Financial viability of operations and businesses would, therefore, be essential for growth and development of the sector. Concerted efforts would be required for restoring the financial health of the sector. For this purpose, tariff rationalization would need to be ensured by the SERCs. This would also include differential pricing for base, intermediate and peak power.

5.8.8 Steps would also be taken to address the need for regulatory certainty based on independence of the regulatory commissions and transparency in their functioning to generate investor's confidence.

5.8.9 Role of private participation in generation, transmission and distribution would become increasingly critical in view of the rapidly growing investment needs of the sector. The Central Government and the State Governments need to develop workable and successful models for public private partnership. This would also enable leveraging private investment with the public sector finances. Mechanisms for continuous dialogue with industry for streamlining procedures for encouraging private participation in power sector need to be put in place.

Transmission & Distribution Losses

5.8.10 It would have to be clearly recognized that Power Sector will remain unviable until T&D losses are brought down significantly and rapidly. A large number of States have been reporting losses of over 40% in the recent years. By any standards, these are unsustainable and imply a steady decline of power sector operations. Continuation of the present level of losses would not only pose a threat to the power sector operations but also jeopardize the growth prospects of the economy as a whole. No reforms can succeed in the midst of such large pilferages on a continuing basis.

The State Governments would prepare a Five Year Plan with annual milestones to bring down these losses expeditiously. Community participation, effective enforcement, incentives for entities, staff and consumers, and technological upgradation should form part of campaign efforts for reducing these losses. The Central Government will provide incentive based assistance to States that are able to reduce losses as per agreed programmes.

5.9 ENERGY CONSERVATION

5.9.1 There is a significant potential of energy savings through energy efficiency and demand side management measures. In order to minimize the overall requirement, energy conservation and demand side management (DSM) is being accorded high priority. The Energy Conservation Act has been enacted and the Bureau of Energy Efficiency has been setup.

5.9.2 The potential number of installations where demand side management and energy conservation measures are to be carried out is very large. Bureau of Energy Efficiency (BEE) shall initiate action in this regard. BEE would also make available the estimated conservation and DSM potential, its staged implementation along with cost estimates for consideration in the

planning process for National Electricity Plan.

5.9.3 Periodic energy audits have been made compulsory for power intensive industries under the Energy Conservation Act. Other industries may also be encouraged to adopt energy audits and energy conservation measures. Energy conservation measures shall be adopted in all Government buildings for which saving potential has been estimated to be about 30% energy. Solar water heating systems and solar passive architecture can contribute significantly to this effort.

5.9.4 In the field of energy conservation initial approach would be voluntary and self-regulating with emphasis on labelling of appliances. Gradually as awareness increases, a more regulatory approach of setting standards would be followed.

5.9.5 In the agriculture sector, the pump sets and the water delivery system engineered for high efficiency would be promoted. In the industrial sector, energy efficient technologies should be used and energy audits carried out to indicate scope for energy conservation measures. Motors and drive system are the major source of high consumption in Agricultural and Industrial Sector. These need to be addressed. Energy efficient lighting technologies should also be adopted in industries, commercial and domestic establishments.

5.9.6 In order to reduce the requirements for capacity additions, the difference between electrical power demand during peak periods and off-peak periods would have to be reduced. Suitable load management techniques should be adopted for this purpose. Differential tariff structure for peak and off peak supply and metering arrangements (Time of Day metering) should be conducive to load management objectives. Regulatory Commissions should ensure adherence to energy efficiency standards by utilities.

5.9.7 For effective implementation of energy conservation measures, role of Energy Service Companies would be enlarged. Steps would be taken to encourage and incentivise emergence of such companies.

5.9.8 A national campaign for bringing about awareness about energy conservation would be essential to achieve efficient consumption of electricity.

5.9.9. A National Action Plan has been developed. Progress on all the proposed measures will be monitored with reference to the specific plans of action.

5.10 ENVIRONMENTAL ISSUES

5.10.1 Environmental concerns would be suitably addressed through appropriate advance action by way of comprehensive Environmental Impact Assessment and implementation of Environment Action Plan (EAP).

5.10.2 Steps would be taken for coordinating the efforts for streamlining the procedures in regard to grant of environmental clearances including setting up of 'Land Bank' and 'Forest Bank'.

5.10.3 Appropriate catchment area treatment for hydro projects would also be ensured and monitored.

5.10.4 Setting up of coal washeries will be encouraged. Suitable steps would also be taken so that utilization of fly ash is ensured as per environmental guidelines.

5.10.5 Setting up of municipal solid waste energy projects in urban areas and recovery of energy from industrial effluents will also be encouraged with a view to reducing environmental pollution apart from generating additional energy.

5.10.6 Full compliance with prescribed environmental norms and standards must be achieved in operations of all generating plants.

5.11 TRAINING AND HUMAN RESOURCE DEVELOPMENT

In the new reforms framework ushered by Electricity Act 2003, it is particularly important that the electricity industry has access to properly trained human resource. Therefore, concerted action would be taken for augmenting training infrastructure so that adequate well-trained human resource is made available as per the need of the industry. Special attention would need to be paid by the industry for establishing training infrastructure in the field of electricity distribution, regulation, trading and power markets. Efforts should be made so that personnel of electricity supply industry both in the private and public sector become more cost-conscious and consumer-friendly.

5.12 COGENERATION AND NON-CONVENTIONAL ENERGY SOURCES

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

5.12.2 The Electricity Act 2003 provides that co-generation and generation of electricity from non-conventional sources would be promoted by the SERCs by providing suitable measures for connectivity with grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from non-conventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively the share of electricity from non-conventional sources would need to be increased as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies.

5.12.3 Industries in which both process heat and electricity are needed are well suited for cogeneration of electricity. A significant potential for cogeneration exists in the country, particularly in the sugar industry. SERCs may promote arrangements between the co-generator and the concerned distribution licensee for purchase of surplus power from such plants. Cogeneration system also needs to be encouraged in the overall interest of energy efficiency and also grid stability.

5.13 PROTECTION OF CONSUMER INTERESTS AND QUALITY STANDARDS

5.13.1 Appropriate Commission should regulate utilities based on pre-determined indices on quality of power supply. Parameters should include, amongst others, frequency and duration of interruption, voltage parameters, harmonics, transformer failure rates, waiting time for restoration of supply, percentage defective meters and waiting list of new connections. The Appropriate Commissions would specify expected standards of performance.

5.13.2 Reliability Index (RI) of supply of power to consumers should be indicated by the distribution licensee. A road map for declaration of RI for all cities and towns up to the District Headquarter towns as also for rural areas, should be drawn by up SERCs. The data of RI should

be compiled and published by CEA.

5.13.3 It is advised that all State Commissions should formulate the guidelines regarding setting up of grievance redressal forum by the licensees as also the regulations regarding the Ombudsman and also appoint/designate the Ombudsman within six months.

5.13.4 The Central Government, the State Governments and Electricity Regulatory Commissions should facilitate capacity building of consumer groups and their effective representation before the Regulatory Commissions. This will enhance the efficacy of regulatory process.

6.0 COORDINATED DEVELOPMENT

6.1 Electricity being a concurrent subject, a well-coordinated approach would be necessary for development of the power sector. This is essential for the attainment of the objective of providing electricity-access to all households in next five years and providing reliable uninterrupted quality power supply to all consumers. The State Governments have a major role, particularly in creation of generation capacity, state level transmission and distribution. The Central Government would assist the States in the attainment of this objective. It would be playing a supportive role in fresh capacity addition and a major role in development of the National Grid. The State Governments need to ensure the success of reforms and restoration of financial health in distribution, which alone can enable the creation of requisite generation capacity. The Regulatory Commissions have the responsibility of ensuring that the regulatory processes facilitate the attainment of this objective. They also have a developmental role whose fulfillment would need a less formal and a consultative process.

The Electricity Act, 2003 also provides for mechanisms like "Coordination forum" and "Advisory Committees" to facilitate consultative process. The Act also requires the Regulatory Commissions to ensure transparency in exercise of their powers and in discharge of their functions. This in no way means that the Regulatory Commissions should follow formal judicial approach. In fact, quick disposal of matters would require an approach involving consultations with stakeholders.

6.2 Under the Act, the Regulatory Commissions are required to perform wide-ranging responsibilities. The appropriate Governments need to take steps to attract regulatory personnel with required background. The Govt. of India would promote the institutional capability to provide training to raise regulatory capacity in terms of the required expertise and skill sets. The appropriate Governments should provide financial autonomy to the Regulatory Commissions. The Act provides that the appropriate Government shall constitute a Fund under section 99 or section 103 of the Act, as the case may be, to be called as Regulatory Commission Fund. The State Governments are advised to establish this Fund expeditiously.

(Ajay Shankar)
Additional Secretary to the Government of India

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Attn: Mr. P.H. Sharma GM (F)

Urgent

ANDHRA BANK
GANDHI CHOWK
KHAMMAM

Letter of Sanction

Lr No: 311/1/661

dt.27.12.2006

To

M/s Madhucon Sugar and Power Industries Ltd.,
Rajeswaripuram,
Nelakondapalli,
KHAMMAM.
Dear Sir,

We advise having sanctioned to you by our Head Office, the following credit facilities against the terms and conditions stipulated hereunder:

- Issuance of DDs at par on all the places wherever CMS facility is not available by collecting out of pocket expenses.
- Approve Total Term Loan component of Rs.11997.60 lacs with front ended FLC/ILC limit of Rs.1000 lacs (within the Term loan component) and BG limit of Rs.1600 lacs to be issued in favour of SDF for your Term loan to Distillery unit and
- Sanction the following credit facilities with terms and conditions mentioned hereunder

I	**Facility**	:	**Term Loan(Fresh)**
	Limit	:	**Rs.5000.00 lacs (Rupees Fifty crores only)(41.67% of total term loan component of Rs.119.98 crores)**
	Purpose	:	For expansion/modernization of the existing sugar mill; setting up of 20 MW co generation project and 65 KLPD RS Plant with total project cost of Rs 19995.00 lakhs.
	Primary Security	:	Parri-passu charge on Land, Building, Plant & Machinery and all other fixed assets both present and future assets of the company along with other term lenders & lending agency of SDF loan(SDF loan amount should be excluding BG portion). (Net Fixed Assets on completion of the proposed project will be Rs 190.47 crores).
	Repayment	:	The loan is repayable in 34 quarterly installments with a gestation of 2 years from the date of disbursement/1 year from the date of commissioning of the project whichever is earlier as per which the first installment commences from Dec 2008 and last installment shall be March 2016.
	Margin	:	40% (including SDF loan)
	Tenor	:	As per repayment schedule
	Interest	:	BMPLR+0.25%-0.75% = 11.00%p.a(floating).
	Sub limit	:	**FLC (Front ended- One time)(as part of above Term Loan)**
	Limit	:	**Rs.500.00 lacs (Rupees Five hundred lacs only)(**
	Purpose	:	Import of steam turbine generator from China
	Prim Security		Machinery imported from China of value Rs 1000.00 lakhs
	Margin	:	10%
	Tenor	:	As per FLC terms
	Comn.	:	Commission as per HO guidelines

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2.	Facility	:	Bank Guarantee
	Limit	:	Rs.800.00 lacs (Rs Eight crores only)(against the total requirement of Rs.1600 lacs.)
	Purpose	:	Issue of BG to Dept of Food & Public Distribution, Government of India.
	Prim Security	:	1. Counter guarantee by the company 2. Pari passu charge on Land, Building, Plant & Machinery and all other fixed assets both present and future assets of the company along with Bank Term Loans of Rs 12000.00 lakhs , SDF loan of Rs 4400.00 lakhs and BG limits of Rs 1600.00 lakhs (Net Fixed Assets on completion of the proposed project will be Rs 190.47 crores). (This will also be held as second charge for existing OCC limit of Rs 800.00 lakhs)
	Margin	:	10%
	Tenor	:	Repayment tenure of the SDF loan for distillery
	Commission	:	Commission at 3%

COLLATERAL SECURITY : Nil.

GUARANTORS:

Name	Net worth (Rs.in lacs)
N.Krishnaiah	156.64
N.Seethaiah	180.87

Additional Conditions :

1. **our loan will be released only after ensuring the promoters equity are infused in the system proportionately i.e. 120: 60: 20 (Bank Loan: SDF loan: Promoters margin).**
2. **The rate of interest is BMPLR+0.25-0.75=11.00% p.a on Term Loan, commission of BG at normal charges of 3% and processing charges, upfront fee - collect normal charges.**
3. **Corporate guarantees from your sister concerns should be made available till the completion of project.**
4. **You should bring all additional capital required for the expansion projects undertaken as equity capital only.**

Specific conditions ::

1. SDF loan repayment shall start after our term loans are completely repaid ie., SDF loan is subservient to our Banks loan.
2. After completion of financial closure, the term lenders will convene consortium meeting wherein the repayment terms of loans from Banks and SDF would be discussed by the consortium. In case if the SDF loan is to be repaid as per the projections given by the company, the loan would be treated as term loan at par with other term loans and the company should bring in additional capital / interest free unsecured loans equivalent to the SDF term loan such that the debt equity(DE) ratio shall be not less than 2:1. In such a case the term loans would be proportionately reduced and the term loan repayments would also be revised in both the cases ie., 1) considering SDF loan as quasi equity and with its repayment after the repayment of Banks' term loans and 2) additional infusion of capital / interest free unsecured loans by the promoters.

Other Terms and conditions:

1. Processing charges and Upfront fee to be charged as per guidelines.
2. The company should give an undertaking that any cost over run in the project cost vis-à-vis insufficient cash accruals for payment of term loan interest and installments shall be met out of own funds and/or unsecured interest free loans without approaching the term lenders for any additional loans.

Annexure - III

Determination of Tariff for non-fossil fuel based co-generation Projects - MSPIL

Financial Year			2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-2
Units Generation	**Units**	**Year -->**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Installed Capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82
Auxiliary Consumption	MU	9%	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Net Generation	MU		4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38
Fixed Cost																						
O&M Expenses	Rs/ lakh	5% on PC	20.83	21.87	22.96	24.11	25.32	26.58	27.91	29.31	30.77	32.31	**33.93**	35.62	37.41	**39.28**	41.24	43.30	45.47	47.74	50.13	52.63
Depreciation	Rs/ lakh	**416.58**	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	12.71	12.71	12.71	12.71	12.71	12.71	12.71
Opening Loan	Lakhs	70 : 30	291.61	291.61	262.45	233.28	204.12	174.96	145.80	116.64	87.48	58.32	29.16	0	0	0	0	0	0	0	0	0
Closing Loan	Lakhs	Loan @ 70%	291.61	262.45	233.28	204.12	174.96	145.80	116.64	87.48	58.32	29.16	0.00	0	0	0	0	0	0	0	0	0
Average Loan	Lakhs		291.61	277.03	247.87	218.70	189.54	160.38	131.22	102.06	72.90	43.74	14.58	0	0							
Interst On Term Loan By Banks			**11%**	**11%**	**11.5%**	**12.53%**	**12.53%**	**12.53%**	**12.53%**	**12.75%**	**12.75%**	**12.75%**	**12.75%**	**12.75%**								
Interest On Term Loan	Lakhs		32.08	30.47	28.50	27.40	23.75	20.10	16.44	13.01	9.29	5.58	1.86	0	0							
O & M Expenses / Month	Rs/ lakh		1.74	1.82	1.91	2.01	2.11	2.22	2.33	2.44	2.56	2.69	2.83	2.97	3.12	3.27	3.44	3.61	3.79	3.98	4.18	4.39
Maintenance	Rs/ lakh	15% on O&M	3.12	3.28	3.44	3.62	3.80	3.99	4.19	4.40	4.62	4.85	5.09	5.34	**5.61**	5.89	6.19	6.50	6.82	7.16	7.52	7.90
Bagasse Cost - 1 Month	Rs/ lakh		5.79	6.09	6.41	6.73	7.07	7.42	9.96	10.72	10.18	10.27	11.20	11.87	12.58	13.34	14.13	14.99	15.88	16.84	17.85	18.92
Receivables -2 Months	Rs/ lakh		25.69	26.07	26.49	26.96	31.29	32.47	31.38	31.41	32.94	34.03	35.19	36.45	37.79	37.90	39.80	41.80	43.92	46.17	46.17	51.05
Avg. Interest Charged by Banks			**11.25%**	**11.25%**	**11.75%**	**13.03%**	**13.03%**	**13.03%**	**13.03%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**	**13.00%**
Interst on Working Capital Loan	Rs/ lakh		4.09	4.19	4.50	5.12	5.77	6.01	6.24	6.37	6.54	6.74	7.06	7.36	7.68	7.85	8.26	8.70	9.15	9.64	9.84	10.69
Return on Equity	Rs/ lakh	@17.60% on Equity	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00	22.00
Total Fixed Cost	**Rs/ lakh**		**100.98**	**100.53**	**99.96**	**100.63**	**98.83**	**96.68**	**94.58**	**92.68**	**90.60**	**88.62**	**86.84**	**86.98**	**89.08**	**81.83**	**84.20**	**86.70**	**89.32**	**92.08**	**94.67**	**98.03**

Determination of Tariff for non-fossil fuel based co-generation Projects - MSPIL

Financial Year			2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Per Unit Cost of Generation																						
O&M Expenses	Rs/KWhr		0.48	0.50	0.52	0.55	0.58	0.61	0.64	0.67	0.70	0.74	0.77	0.81	0.85	0.90	0.94	0.99	1.04	1.09	1.14	1.20
Depreciation	Rs/KWhr		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.29	0.29	0.29	0.29	0.29	0.29	0.29
Interest on Term Loan	Rs/KWhr		0.73	0.70	0.65	0.63	0.54	0.46	0.38	0.30	0.21	0.13	0.04	-	-	-	-	-	-	-	-	-
Interest on Working Capital Loan	Rs/KWhr		0.09	0.10	0.10	0.12	0.13	0.14	0.14	0.15	0.15	0.15	0.16	0.17	0.18	0.18	0.19	0.20	0.21	0.22	0.22	0.24
ROE	Rs/KWhr		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Total Fixed Cost	Rs/KWhr		2.31	2.30	2.28	2.30	2.26	2.21	2.16	2.12	2.07	2.02	1.98	1.99	2.03	**1.87**	**1.92**	**1.98**	**2.04**	**2.10**	**2.16**	**2.24**
Total COG (Bagasse Cost + FC)	Rs/KWhr		3.89	3.96	4.04	4.14	4.19	4.24	4.89	5.05	4.86	4.84	5.05	5.24	5.48	5.52	5.79	6.09	6.39	6.72	7.05	7.42
Discount Factor (WACC)		0.0929																				
Discount Factor	PV		1	0.915	0.84	0.77	0.7	0.64	0.59	0.54	0.49	0.45	0.41	0.38	0.34	0.32	0.29	0.26	0.24	0.22	0.22	0.22
			2.31	2.10	1.92	1.77	1.58	1.41	1.27	1.14	1.01	0.91	0.81	0.75	0.69	0.60	0.56	0.51	0.49	0.46	0.48	0.49
Levelised Tariff (Fixed)			**2.16**													**3.47**						
Begasse Cost for WC Calculations @ 5% escalation up to 13-14 & Thereafter as per VC Order dated 16.05.2014 up to 2017-18 & thereafter 6 % indicative escalation	Rs/MT		901	948	998	1047	1100	1155	1551	1668	1584	1598	1743	1848	**1958**	2076	2200	2333	2472	2621	2778	2945
Begasse Consumption	MT		7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709	7709

Finding of Levalised Tariff		100.98	91.98	83.96	77.48	69.18	61.87	55.80	50.05	44.39	39.88	35.60	33.05	30.29	26.19	24.42	22.54	21.44	20.26	20.83	21.57
		4.38	4.01	3.68	3.37	3.07	2.80	2.58	2.37	2.15	1.97	1.80	1.66	1.49	1.40	1.27	1.14	1.05	0.96	0.96	0.96

The formula to calculate the LCOE is: (Present Value of Total Cost Over the Lifetime)/(Present Value of All Electricity Generated Over the Lifetime)

Bagase Cost		69.43	73.09	76.93	80.71	84.80	89.04	119.56	128.58	122.11	123.19	134.36	142.46	150.94	160.03	169.59	179.85	190.56	202.05	214.15	227.00
Per Month	Rs. In Lacs	5.79	6.09	6.41	6.73	7.07	7.42	9.96	10.72	10.18	10.27	11.20	11.87	12.58	13.34	14.13	14.99	15.88	16.84	17.85	18.92
Per Kwh	Bagasse	1.59	1.67	1.76	1.84	1.94	2.03	2.73	2.94	2.79	2.81	3.07	3.25	3.45	3.65	3.87	4.11	4.35	4.61	4.89	5.18
	FC	2.31	2.30	2.28	2.30	2.26	2.21	2.16	2.12	2.07	2.02	1.98	1.99	2.03	1.87	1.92	1.98	2.04	2.10	2.16	2.24
	COG	3.89	3.96	4.04	4.14	4.19	4.24	4.89	5.05	4.86	4.84	5.05	5.24	5.48	5.52	5.79	6.09	6.39	6.72	7.05	7.42

Year	14	15	16	17	18	19	20
VC	**3.4655**	**3.6388**	**3.8207**	**4.0117**	**4.2123**	**4.4230**	**4.6441**
FC	**1.87**	**1.92**	**1.98**	**2.04**	**2.10**	**2.16**	**2.24**
Total	**5.33**	**5.56**	**5.80**	**6.05**	**6.31**	**6.58**	**6.88**

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TELANAGANA STATE ELECTRICITY REGULATORY COMMISSION
5th Floor, Singareni Bhavan, Red Hills, Hyderabad-500 004

Order for Determination of Generic Tariff for Bagasse based Power Plants

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TELANGANA STATE ELECTRICITY REGULATORY COMMISSION
5th Floor, Singareni Bhavan, Red Hills, Hyderabad-500 004

DATED: 20.10. 2018

Present Sri. Ismail Ali Khan, Chairman

In the matter of

In the matter of determination of generic tariff for Bagasse based power projects in the State of Telangana for the control period 2018-2020 (i.e. FY 2018-19 and FY 2019-20).

In exercise of the powers conferred under Sections 62, 86 (1) (a), (b) and (e) of the Electricity Act, 2003, (Act 36 of 2003), read with the Tariff Policy and Central Electricity Regulatory Commission (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2017, dated 17.04.2017 (CERC Regulations 2017) the Commission hereby determines the generic tariff for Bagasse based power plants (Bagasse plants) in the State of Telangana.

INTRODUCTION:

Electricity being an essential commodity is generated from several sources, which form part as raw material. As such generation is based on both conventional fuels and non-conventional fuels. Non-conventional fuels are based on renewable sources, which are available in abundance and can be used time and again.

2. Electricity is governed by the Act, 2003 at present and the rules and regulations are issued under the said Act, 2003 including but limited to policy framed by the government. Section 86 (1) (e) of the Act, 2003 requires the Appropriate Commission to promote renewable sources of energy and provide for connectivity with the grid and declare mandatory purchase of such energy to a minimum level of consumption in the area of the distribution licensee.

3. Towards this objective, the Government of India has been issuing policy statements from time to time exercising the power under the relevant Acts and at present Act, 2003. The latest policy announcement has been made in the National Tariff Policy of 2016.

4. The Andhra Pradesh Electricity Regulatory Commission (APERC) as it then was in the year 2000 initiated the process of determination of tariff for renewable energy and notified tariff by order dated 20.06.2001, which tariff was applicable up to 31.03.2004 for all types of renewable energy except solar. Thereafter, by another order dated 20.03.2004, the APERC had passed orders and revised tariff for the control period 2004-2009 identifying rates for specific type of fuel. Further, the then APERC determined tariff for renewable sources by an order dated 31.03.2009 for the period from 01.04.2009 to 31.03.2014. However, the said order did not notify the fixed cost norms for the ensuing projects in the said control period.

5. After a protracted litigation as understood from the orders of the then APERC, the Hon'ble Appellate Tribunal for Electricity (ATE) had set out the normative parameters in respect of the projects commissioned for the control period 2004-2009 by order dated 22.12.2012. While doing so, the Hon'ble ATE required the then Commission to notify the final tariff for the said period taking into consideration certain parameters approved by it.

6. The generic tariff as determined erstwhile APERC is applicable to the projects which generate power based on renewable energy sources such as bio-mass, bagasse, hydel, wind etc. The APERC passed a revised tariff order dated 22.06.2013, pursuant to order dated 22.12.2012 in Appeal Numbers 150 of 2011 and batch, and by order dated 30.04.2013 in R. P. 3 / 2013 and batch as passed by Hon'ble ATE, determining the tariff for Biomass, Bagasse based co-generation and mini-hydel power plants which were existing as on 31.03.2004 and those commissioned between 01.04.2004 to 31.03.2009 except for the projects covered by negotiated PPAs based on the norms indicated in the aforesaid orders of the Hon'ble APTEL. Further, the then APERC had passed orders on 06.08.2013 determining the variable cost for the period 2009- 2014 to give effect to the order of the Hon'ble ATE. Other terms and conditions of the order dated 31.03.2009 remained unaltered. The

then APERC had also determined the variable charges for the control period 2014 – 2019 by an order dated 16.05.2014 in O. P. 32 of 2014.

7. The NTP 2016 at sub clause 2 of clause 6.4 has provided as below.

"(2) States shall endeavor to procure power from renewable energy sources through competitive bidding to keep the tariff low, except from the waste to energy plants. Procurement of power by Distribution Licensee from renewable energy sources from projects above the notified capacity, shall be done through competitive bidding process, from the date to be notified by the Central Government. However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003. While determining the tariff from such sources, the Appropriate Commission shall take into account the solar radiation and wind intensity which may differ from area to area to ensure that the benefits are passed on to the consumers."

8. One of the cogeneration plants running in the state of Telangana is M/s. NSL Krishanaveni Sugars Limited. It has filed a petition before the Commission for determination of the tariff for generation of energy from its 28.2 MW bagasse based cogeneration plant established at Ramkrishanapuram Village of erstwhile Mahaboobagar District (presently in Wanaparthy Dist). It has stated and brought to the notice of the Commission by filing a petition before it that it is a plant established in the year 2011 and has been undertaking supply of energy to the DISCOMs since then under the short term procurement in the absence of generic tariff order for the bagasse based cogeneration projects commissioned after 31.03.2009.

9. Noticing the above position and in view of the tariff policy notified by the Government of India, the Commission has now undertaken determination of the generic tariff for bagasse based cogeneration projects.

Overview:

Importance of Non-Conventional Energy Sources:

10. Non-Conventional Energy Sources are pollution free. Global concern over pollution problems caused by the increase in greenhouse gasses emission and consequent climate changes have resulted in paradigm shift in the approach towards

development of energy sector in all the countries. The need for adoption of clean technology, improving end use efficiency and diversifying energy bases, etc. have all been seriously considered by the Government of India since Sixth Five Year Plan. Electricity Act 2003, National Electricity Policy, Tariff Policy have all addressed the necessity for promotion of the co-generation and generation of electricity from renewable sources of energy.

Commission's order on NCES based generation and allied issues:

11. As has been stated in the introduction above, the history of tariff for non-conventional sources was determined by the then Andhra Pradesh Electricity Regulatory Commission (APERC) as it then was. The then Commission passed several orders from time to time suo moto and as per directions of the appellate forums. However due to efflux of time and changes in the law and composition of the boundaries of the then existing state this Commission is required to undertake the exercise of determination of tariff for non-conventional projects and more particularly the bagasse based projects.

Floating of Consultative Paper:

12. The Commission in furtherance of the above stated over view has floated a consultative paper to elicit the views of the stakeholders before issuing a generic tariff order and hosted it in the Commission's website on 09.07.2018 inviting views / suggestions from the stakeholders. The list of stakeholders who submitted written comments is placed in Annexure-I. The Commission also heard the interested persons and stakeholders on 07.08.2018. Taking into account the views of various stakeholders, the Commission passed this comprehensive tariff order on Bagasse based co-generation plants.

Legal Provisions:

Provisions of the Act, 2003:

13. The relevant provisions of the Act, 2003 are extracted below for ready reference and better understanding.

> Section 3 (1): National Electricity Policy and Plan
>
> "The Central Government shall, from time to time, prepare the National Electricity Policy and tariff policy, in consultation with the State Governments and the Authority for development of the power system

based on optimal utilization of resources such as coal, natural gas, nuclear substances or materials, hydro and renewable sources of energy.

....."

Section 61 – Tariff Regulations

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

.....

(h) The promotion of co-generation and generation of electricity from renewable sources of energy;

(i) The National Electricity Policy and tariff policy:"

Section 62: Determination of Tariff.

" (1) The Appropriate Commission shall, subject to the provisions of this Act for –

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

.....

(2): The Appropriate Commission may require a licensee or a generating company to furnish separate details, as may be specified in respect of generation, transmission and distribution for determination of tariff.

.....

(5): The Commission may require a licensee or a generating company to comply with such procedure as may be specified for calculating the expected revenues from the tariff and charges which he or it is permitted to recover.

....."

Section 63: Determination of tariff by bidding process

"Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government."

Section 86: Functions of State Commission

"(1) .....

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

....."

Related Provisions of the National Electricity Policy:

14. The guidelines stipulated in the National Electricity Policy on NCES, which are relevant, are reproduced below:

Clause 5.2.20:

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

....."

Clause 5.12.1:

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

Clause 5.12.2:

"The Electricity Act 2003 provides that co-generation and generation of electricity from non-conventional sources would be promoted by the SERCs by providing suitable measures for connectivity with grid and sale of electricity to any person and also by specifying, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee. Such percentage for purchase of power from non-

conventional sources should be made applicable for the tariffs to be determined by the SERCs at the earliest. Progressively the share of electricity from non-conventional sources would need to be increased as prescribed by State Electricity Regulatory Commissions. Such purchase by distribution companies shall be through competitive bidding process. Considering the fact that it will take some time before non-conventional technologies compete, in terms of cost, with conventional sources, the Commission may determine an appropriate differential in prices to promote these technologies.

....."

Related Provisions in the Tariff Policy:

15. The Commission is also guided by the following specific provisions of the Tariff Policy of Government of India (Ministry of Power) relating to NCES:

Clause 5 (11) (i)

"Tariff fixation for all electricity projects (generation, transmission and distribution) that result in lower Green House Gas (GHG) emissions than the relevant base line should take into account the benefits obtained from the Clean Development Mechanism (CDM) into consideration, in a manner so as to provide adequate incentive to the project developers.

....."

Clause 6.0:

"Accelerated growth of the generation capacity sector is essential to meet the estimated growth in demand. Adequacy of generation is also essential for efficient functioning of power markets. At the same time, it is to be ensured that new capacity addition should deliver electricity at most efficient rates to protect the interests of consumers. This policy stipulates the following for meeting these objectives.

....."

Clause 6.4(1):

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

taken into account while determining tariff by SERCs. Long term growth trajectory of Renewable Purchase Obligations (RPOs) will be prescribed by the Ministry of Power in consultation with MNRE."

Clause 6.4 (2):

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

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

....."

Applicability of this Order:

16. The order shall come into force with effect from date of publication on the website of the Commission. The tariff proposed to be fixed shall be applicable to all bagasse based co-generation plants commissioned during the control period specified in this order. The control period for the purposes of this order will be 2018 – 2020 (2018 – 19 to 2019-20). The order now being passed is also adoptable those projects whose commercial operation date happened to be after the year 2009 for which they have obtained sanctions and permissions from the competent nodal agencies in the combined state of Andhra Pradesh and later in the state of Telangana. However for such projects the respective tariff will be at year levelized and relevant for the current year onwards. This order is also made applicable to those projects which have obtained sanctions and permissions from the competent nodal agencies in the combined state of Andhra Pradesh and later in the state of Telangana but have not yet commissioned the project and are likely to commission the same during the control period 2018-2020.

Tariff Methodology:

Cost-Plus Tariff Determination:

17. Cost-plus tariff determination is a more practicable method but it discourages competition and efficiency. However, to encourage the setting up of new co-gen plants, cost plus tariff method is followed. As it can be easily designed to provide adequate return to the investor as assured return will lead to larger investment in renewable power. Accordingly, the Commission proposes the cost plus tariff approach in this order. The Commission in this order determines levellised fixed cost and notifies the actual fuel price escalation and consequent variable cost every year based on indexation methodology.

Tariff Components:

18. The Commission has carried out a detailed analysis of the existing policies / procedures and commercial mechanisms in respect of bagasse based co-generation and following important factors have been considered to arrive at the tariff and other related issues for bagasse based co-generation.

1. Capital Cost per MW
2. Plant Load Factor (PLF)
3. Debt – Equity ratio
4. Term of Loan and Interest
5. Return on Equity (RoE)
6. Life of plant and machinery
7. Depreciation
8. Operation & Maintenance (O & M) Expenses
9. Interest and components of working capital
10. Station Heat rate
11. Gross Calorific Value (GCV) of the fuel
12. Fuel Cost
13. Auxiliary consumption

19. Each of the issues have been discussed in detail in the subsequent paragraphs taking into consideration the views of the stake holders both written oral made by them.

TSDISCOMS VIEWS ON THE PROCEEDINGS:

20. The distribution companies in the State of Telangana have submitted their views in generic form and not on specific issues. The submissions are as below:

(i) Hon'ble TSERC issued RPPO Regulation No. 2 of 2018 mandating TSDISCOMs to purchase from Renewable Energy Sources a minimum quantity (in Kwh) of electricity expressed as a percentage of its total consumption of energy, during FY 2018-19 to FY 2021-22 as follows:

Year / RPPO	2018-19	2019-20	2020-21	2021-22
N0n-Solar	0.67%	0.73%	0.79%	0.90%

(ii) As per the approved projections in Retail Supply Tariff Order for FY 2018-19, TSDISCOMs would be meeting the Non-Solar RPPO purchases with 1.01% as against the prescribed 0.67%.

(iii) Therefore, TSDISCOMs are under no obligation to procure power from Bagasse based Cogeneration projects with generic tariff under Section 62 of Electricity Act, 2003.

(iv) Besides, the National Tariff Policy, 2016 mandates the procurement of Power from RE Sources except Waste to Energy Projects on Competitive Bidding route alone.

(v) As such, under the provisions of the National Tariff Policy, 2016, many of the States have shifted from MoU route to Competitive Bidding route.

(vi) TSDISCOMs are not inclined to submit views / comments on the financial / operational parameters proposed in the discussion paper in view of the Competitive Bidding process mandated by National Tariff Policy, 2016.

(vii) In light of the above, the Hon'ble Commission may kindly notify the guidelines for procurement of power from Bagasse based Cogeneration projects under competitive bidding process.

Capital cost per MW:

Comments / suggestions:

21. M/s. NSL Krishnaveni Sugars Limited (NSL) has stated that the Commission may consider Rs. 4.60 Crores / MW as per their petition. M/s. Telangana Sugar Mills

Association (TSMA) has stated that the Commission may consider Rs. 5.00 crores / MW.

Commission's View:

22. The Commission notices that there was no objection raised from developers regarding the capital cost of Rs. 3.25 crs / MW as mentioned in the then APERC order dated 12.09.2011 in R. P. No. 84 / 2003 in O. P. No. 1075 / 2000 wherein no distinction was made between old and new projects with respect to capital cost. The same is also taken into consideration by the Hon'ble ATE in the order dated 20.12.2012 in appeal No.150 of 2011. Hence the Commission has adopted a capital cost Rs. 3.25 Crores / MW for the base year 2004-05 with an escalation of 5% up to 2010-11. Thus, the capital cost arrived at is Rs. 4.35 Crores / MW. The capital cost includes evacuation cost upto the inter-connection point.

Plant Load Factor (PLF):

Comments / suggestions:

23. M/s. NSL has stated that PLF of 55% as per APTEL order dated 20.12.2012 is appropriate and may be considered by the Commission. M/s. TSMA has stated that barring FY 2014-15 where PLF was 40%, the co-gen units have never achieved a PLF of above 35% and hence it sought consideration of fixing PLF at 35% whereby the sugar factories can recover the fixed costs.

Commission's View:

24. Considering the availability of fuel during the crushing and non-crushing season the Commission considers the threshold level PLF that can be achieved as 55%. The same was considered in the then APERC order dated 20.03.2004. The Commission also views that no issue was raised by the developers with respect to PLF regarding its achievability or otherwise and the same was also considered by the Hon'ble ATE in its order dated 20.12.2012, hence, the Commission decides to adopt the PLF of 55% for the purpose of tariff determination.

Debt – Equity Ratio:

Commission's View:

25. The Tariff Policy notified by the Government of India (GoI) lays down a debt-equity ratio of 70:30 for power projects. Commission in its previous orders had also adopted a debt equity ratio of 70:30 while determining the tariff either on generic

basis or on individual basis. Accordingly, the Commission decides to adopt the ratio of 70:30 for this purpose.

Term of Loan and Rate of Interest:

Comments / suggestions:

26. M/s. TSMA has stated that the credit rating of the industry with the bankers has been adversely affected and no bank is prepared to finance sugar industry at the rate of 11.66% rate of interest proposed by the Commission. Even the GoI while determining the interest subsidy to be extended to the sugar industry has allowed an interest rate of 12%. Therefore, it sought consideration of 13% as the normative rate of interest.

Commission's View:

27. The Commission while examining the normative noticed that as per latest CERC guidelines the interest rate of 200 basis points and 300 basis points above average SBI MCLR (one year period) prevalent during the last available six months respectively for term loan and working capital loans for the determination of tariff has been adopted. The monthly data of MCLR for the last available six months from State Bank of India and the average MCLR is shown in the table 1 below.

Table - 1

beginning of the Month	1 Year Tenor MCLR Rates
April-18	8.15
May-18	8.15
June-18	8.25
July-18	8.25
Aug-18	8.25
Sep-18	8.45
Average Rate	**8.25**

However as per the average of last six months that is 01.04.2018 to 01.10.2018 applicable as on the date of this order as arrived at in the table above would be 10.25%. Based on the above analysis of the data, Commission decides to adopt a figure of 10.25% per annum and 11.25% per annum respectively for term loan and working capital for this purpose.

Return on Equity (RoE):

Commission's View:

28. The Commission has examined the issue in the absence of any submission from the stakeholders. Clause 16 (2) of the CERC Regulations, 2017, stipulates that the normative RoE shall be 14 %, to be grossed up by prevailing MAT as on 1st April of previous year for the entire useful life of the project. The RoE as proposed at 17.60% is based on grossing up of average MAT rates as on 01.04.2017 on normative rate of return on equity of 14% detailed as under.

Note: (a) MAT rates, as on 01.04.2017, for companies having profit less than Rs. 1 Cr, between Rs. 1 Cr & 10 Cr and above Rs. 10 Cr are 19.055%, 20.389% and 21.342% respectively, resulting in an average MAT rate of 20.26%. Accordingly, the RoE is arrived at 17.60%.

(b) Similarly, the MAT rates, as on 01.04.2018, for companies having profit less than Rs. 1 Cr, between Rs. 1 Cr & 10 Cr and above Rs. 10 Cr is 19.24%, 20.59% and 21.55% respectively resulting in an average MAT rate of 20.46%.

Thus, the normative rate of return on equity of 14% when grossed up by average MAT rate of 20.46% being the prevailing MAT rate (as on 01.04.2018) would result in a ROE of 17.60%. Accordingly, the Commission considers it to adopt RoE of 17.60%.

Life of Plant and Machinery:

Commission's View:

29. In the absence of specific comments of the stakeholders on the normative, the Commission considers the useful life of the plant as 20 years as per CERC Regulation, 2017.

Depreciation:

Commission's View:

30. The Commission finds that the stake holders have not raised any issue on this aspect and therefore proceeds to examine the issue. Clause 15 of the CERC Tariff Regulations 2017 provides for computation of depreciation in the following manner:

"(1) The value base for the purpose of depreciation shall be the Capital Cost of the asset admitted by the Commission. The salvage value of the asset shall be considered as 10% and depreciation shall be allowed up to maximum of 90% of the Capital Cost of the asset.

(2) Depreciation rate of 5.28% per annum for first 13 years and remaining depreciation to be spread during remaining useful life of the RE projects considering the salvage value of the project as 10% of project cost shall be considered.

(3) Depreciation shall be chargeable from the first year of commercial operation. Provided that in case of commercial operation of the asset for part of the year, depreciation shall be charged on pro rata basis".

Hence the Commission considers depreciation of 5.28% for 13 years and 3.05% from 14th year onwards as per CERC norms.

Operation and Maintenance (O & M) Expenses:

Commission's View:

31. The Commission appreciates that the stakeholders have left the significant parameter untouched without commenting on the discussion paper. As per Clause 50 of CERC Tariff Regulations, 2017, the normative O & M expenses for non-fossil fuel co-generation projects for the first year of the control period (FY 2017-18) has been specified as Rs. 21.13 Lakhs per MW, which shall be escalated at the rate of 5.72% per annum over the tariff period. The Commission has proposed O & M cost norm for Non-fossil fuel based co-generation plant as Rs. 22.18 Lakhs per MW (21.13 lakhs / MW with 5% escalation) for FY 2018-19. Considering the above provision, the Commission adopts O and M expenses to be at Rs. 22.18 lakhs to be factored in the tariff.

Interest and Components of working capital:

Comments / suggestions:

32. M/s. TSMA has stated that the credit rating of the industry with the bankers has been adversely affected and no bank is prepared to finance the sugar industry at the rate of 11.66% rate of interest proposed by the Commission. Even the GoI while determining the interest subsidy to be extended to the sugar industry has allowed interest rate of 12%. Therefore, it sought consideration of 13% as the normative rate of interest.

Commission's View:

33. The Commission adopts similar reasoning as has been stated by it in respect of interest on term loans, and accordingly, the interest on working capital is adopted as 11.25% per annum.

Station Heat Rate (SHR):

Comments / suggestions:

34. M/s. TSMA has stated that the SHR considered by the Commission is too low and practically not possible to achieve with the available material. The bagasse consumption during the season for power generation including process steam is found to be between 2.7 to 3.0 kg / Kwh of electricity generated depending on the operating parameters of the plant. This translates to the gross SHR of 6075 to 6750 kcal / Kwh of bagasse during season and 4300 to 4400 kcal / Kwh of bagasse during off-season as per actual operational data. Hence it is prayed that SHR be fixed at an average of SHR during season and off-season.

Commission's View:

35. The Commission considers that the submission is misplaced and with the advancement of the technology the SHR of 3600 kcal / kWh as adopted by CERC and Hon'ble ATE are appropriate. Accordingly, it adopts normative SHR to be at 3600 kcal / kWh.

Gross Calorific Value (GCV) of the fuel:

Commission's View:

36. The Commission is of the view that the industry association and the stakeholders have not shown any reasons to differ with the conclusions arrived at by the CERC and the hon'ble ATE. Therefore, the Commission has considered and adopts a GCV of 2250 kCal / kg as per the norms adopted by CERC and APTEL.

Fuel Cost:

Comments / suggestions:

37. M/s. NSL has stated that the Commission may consider market price or indexation price whichever is higher while fixing the fuel price. Shri Sourabh Srivastava has stated that the price applicable to bagasse considering the clean

nature and local production as a byproduct, ought to be based entirely on the ROM price of coal without inclusion of any tax / duty applicable to coal (Rs. 1029/ MT). Arbitrary allowance of escalation at the rate of 6% be dispensed with. The escalation may be linked to CERC notified 6 monthly escalation rates for power procurement through competitive bidding. As an alternative, the escalation may be considered based on some formula ensuring compensation for Inflation indices only.

Commission's View:

38. In the consultative paper the Commission had proposed a fuel cost of Rs. 1743 / MT with an escalation of 5% from the 2nd year onwards. It is relevant to state here that the indexation method and escalation of variable cost as propounded by then APERC and followed by this Commission has not been objected to this date and has been well received by the industry. If the said formula works satisfactorily for variable cost, then there is no reason why it should not be adopted for purpose of determining the fuel cost. In this background the Commission adopts the methodology of notifying the actual fuel price escalation and consequent variable cost every year based on indexation methodology.

Auxiliary Consumption:

Comments / suggestions:

39. M/s. TSMA has stated that the auxiliary consumption in sugar mills will be around 10% owing to the power consumption of 22 units for every ton of sugarcane crushed and requested to consider the same to be pegged at 10%.

Commission's View:

40. The Commission is of the view that non-fossil fuel based cogeneration plants have some of the auxiliary equipment common between the sugar mill and the power generation unit. Also, the bagasse requires less processing compared to the biomass. Therefore, the Commission decides to consider the auxiliary consumption of 9% as decided by APERC in its earlier orders and also adopted by the Hon'ble ATE while arriving at the parameters and normative in deciding the appeals then.

Tariff Determination:

41. Based on the discussion on the various components of the tariff in the preceding paragraphs, the financial and operational parameters in respect of

bagasse based cogeneration power projects has been considered and adopted in the present order which are tabulated in the table No. 2 below:

Table - 2

Sl. No.	Particulars	Units	TSERC
1	Installed Power Generation considered for workings	MW	1
2	Auxiliary Consumption	%	9.00%
3	PLF	%	55%
4	Useful life	Years	20
5	Capital Cost	Rs Lakhs / MW	435.5
6	Debt	%	70%
7	Equity	%	30%
8	Total Debt Amount	Rs. in Lakhs	304.85
9	Total Equity Amount	Rs in Lakhs	130.65
10	Interest on Debt	% PA	10.25%
11	Return on Equity (Pre-Tax)	% PA	17.60%
12	Discount Rate (Equity to WACC)	%	9.29%
13	Depreciation		
a	Depreciation Rate for 1st 13 years	%	5.28%
b	Depreciation Rate 14th year onwards	%	3.05%
14	Working Capital		
a	For Fixed charges		
	O & M Charges	Months	1
	Maintenance spares (15% of O & M expenses)	Rs. In lakhs	3.327
	Receivables for Debtors	Months	2
b	For Variable Charges		
	Bagasse stock	Months	1
15	Interest on working Capital	% PA	11.25%
16	Heat rate	Kcal / KWhr	3600
17	GCV	Kcal/Kg	2250
18	O & M Expenses	Rs Lakhs / MW	22.18
19	O & M Escalation		5.00%
20	Levellized Fixed Cost for the life of the plant	Rs./unit	2.23

Conclusion:

42. The Commission has considered all the parameters and submissions brought before it with reference to its discussion paper and it is of the view that the submissions made in respect of certain issues do not satisfy the normative conditions nor can they be factored while determining the tariff. Therefore, the Commission has arrived at the tariff based on the normatives that are taken into consideration and discussed thoroughly in this order. Based on the discussion, the

final tariff is arrived at, which is applicable in the State of Telangana for bagasse based co-generation projects for the period FY 2018-2020 (FY 2018-19 and 2019-20) in terms of the applicability stated at paragraph 16 of this order.

43. The Commission has determined the levellized fixed cost to be at Rs.2.23 per unit as shown in the Table – 2 above read with the calculation regarding year-wise fixed cost indicated in the Annexure – III. Insofar as variable cost is concerned, the Commission adopts the methodology of notifying the actual fuel cost escalation and consequent variable cost every year based on the indexation methodology.

This order is corrected and signed on this 20th day of October, 2018.

Sd/-
(ISMAIL ALI KHAN)
CHAIRMAN

// CERTIFIED COPY//

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Annexure-I

List of Entities/Individuals who have submitted suggestions / comments

1. M/s. NSL Krishnaveni Sugars Limited,
   Regd. & Corp Off: NSL Icon, PlotNo. 1 to 4,
   Road No. 12, Banjara Hills, Hyderabad, Telangana – 500 034.

2. M/s. Telangana Sugar Mills Associations,
   # 5-9-22 / 69, Adarshnagar, Hyderabad – 500 063.

3. Sri. Saurab Srivastava

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Annexure-II

List of Individuals in attendance in public hearing held on 7th August, 2018

Sl. No.	Name of the Individual	Name of the organization represented
1	Sri. Someswara Prasad K. M.	AGM (Power Trading), M/s. NSL Krishnaveni Sugars Limited.
2	Sri. Madhu Rejet	M/s. NSL Krishnaveni Sugars Limited.
3	Sri. M. Srinivasa Rao	M/s. Madhucon Sugars Private Limited
4	Sri. D. V. S. Chowdary	M/s. Madhucon Sugars Private Limited
5	Sri. K. Satish Kumar	DE / RAC, TSSPDCL
6	Sri. T. Madhusudhan	CGM / IPC & RAC, TSNPDCL

Annexure - III

Determination of Tariff for non-fossil fuel based co-generation Projects

Financial Year			2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Units Generation	Units	Year->	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Installed capacity	MW		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Gross Generation	MU		4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82	4.82
Auxiliary Consumption	MU		0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43
Net Generation	MU		4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38	4.38
Fixed cost																						
O&M Expenses	Rs in lakh		22.18	23.29	24.45	25.68	26.96	28.31	29.72	31.21	32.77	34.41	36.13	37.94	39.83	41.82	43.91	46.11	48.42	50.84	53.38	56.05
Depreciation	Rs in lakh		22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	22.99	13.29	13.29	13.29	13.29	13.29	13.29	13.29
Opening loan	Lakhs		304.65	281.66	258.66	235.67	212.67	189.68	166.68	143.69	120.69	97.90	74.91	51.91	28.92							
Closing loan	Lakhs		281.66	258.66	235.67	212.67	189.68	166.68	143.69	120.69	97.90	74.91	51.91	28.92	5.92							
Average loan	Lakhs		293.35	270.36	247.36	224.37	201.38	178.38	155.39	132.39	109.40	86.40	63.41	40.41	17.42							
Interest on term loan	Lakhs		30.07	27.71	25.35	23.00	20.64	18.28	15.93	13.57	11.21	8.86	6.50	4.14	1.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O&M Expenses/Month	Rs in lakh		1.848	1.941	2.038	2.140	2.247	2.359	2.477	2.601	2.731	2.867	3.011	3.161	3.319	3.485	3.660	3.843	4.035	4.236	4.448	4.671
Maintenance spares	Rs in lakh		3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327	3.327
Bagasse cost -1 month	Rs in lakh		6.41	6.73	7.07	7.42	9.96	10.72	10.18	10.27	11.20	11.87	12.58	13.34	14.14	14.98	15.88	16.84	17.85	18.92	20.05	21.26
Recievables -2 months	Rs in lakh		29.97	30.41	30.91	31.45	36.50	37.88	36.61	36.65	38.43	39.70	41.06	42.52	44.09	44.22	46.43	48.77	51.24	53.86	56.63	59.56
Interest on working capital loan	Rs in lakh		4.68	4.77	4.88	4.99	5.85	6.11	5.92	5.94	6.26	6.50	6.75	7.01	7.30	7.43	7.80	8.19	8.60	9.04	9.50	9.99
Return on Equity	Rs in lakh		23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00	23.00

Determination of Tariff for non-fossil fuel based co-generation Projects

Financial Year			2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Total Fixed cost	Rs/lakh		102.91	101.76	100.67	99.65	99.45	98.69	97.56	96.71	96.24	95.75	95.37	95.08	94.91	95.54	88.00	90.58	93.30	96.16	99.17	102.32
Per unit cost of Generation																						
O&M expenses	Rs/KWhr		0.51	0.53	0.56	0.59	0.61	0.65	0.68	0.71	0.75	0.78	0.82	0.87	0.91	0.95	1.00	1.05	1.10	1.16	1.22	1.28
Depreciation	Rs/KWhr		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Interest on term loan	Rs/KWhr		0.69	0.63	0.58	0.52	0.47	0.42	0.36	0.31	0.26	0.20	0.15	0.09	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Interest on working capital loan	Rs/KWhr		0.11	0.11	0.11	0.11	0.13	0.14	0.13	0.14	0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19	0.20	0.21	0.22	0.23
ROE	Rs/KWhr		0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52
Total fixed	Rs/KWhr		2.35	2.32	2.30	2.27	2.27	2.25	2.23	2.21	2.20	2.18	2.18	2.17	2.16	1.95	2.01	2.07	2.13	2.19	2.26	2.33
Total COG	Rs/KWhr		4.10	4.16	4.23	4.30	5.00	5.18	5.01	5.02	5.26	5.43	5.62	5.82	6.03	6.05	6.35	6.67	7.01	7.37	7.75	8.15
Discount Factor (WACC)		0.093																				
Discount Factor			1	0.915	0.84	0.77	0.70	0.64	0.59	0.54	0.49	0.45	0.41	0.38	0.34	0.32	0.29	0.26	0.24	0.22	0.20	0.19
Levelised Tariff (Fixed)			2.23																			
Bagasse cost for WC calculations @ 5% esclation up to 13-14 & Thereafter as per VC order dated 16.05.2014 up to 2018-19 & thereafter 6 % indicative esclation	Rs/MT		998	1047	1100	1155	1551	1668	1584	1598	1743	1848	1958	2076	2200	2333	2472	2621	2778	2945	3121	3309
Bagasse consumption	MT		7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7709	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8	7708.8

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Determination of Tariff for non-fossil fuel based co-generation Projects

Financial Year			2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Variable cost with Fuel Esclation up to 2018-19 as per Orders of APERC/TSERC , thereafter in indicative 6 % Esclation as per APERC order dated 16.05.2014	Rs/KWhr		1.75	1.84	1.93	2.03	2.73	2.93	2.79	2.81	3.06	3.25	3.44	3.65	3.87	4.10	4.35	4.61	4.88	5.18	5.49	5.82
Total COG with , VC as per APERC/TSERC orders up to 2018-19			3.99	4.07	4.16	4.26	4.96	5.16	5.02	5.04	5.30	5.48	5.67	5.88	6.10	6.33	6.58	6.84	7.11	7.41	7.72	8.05

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TELANGANA STATE ELECTRICITY REGULATORY COMMISSION

5th Floor, Singareni Bhavan, Red Hills, Lakdi-ka-pul, Hyderabad 500004

O.P. No. 21 of 2020

Dated: 28.08.2020

Present

Sri T. Sriranga Rao, Chairman

Sri M.D. Manohar Raju, Member (Technical)

Sri Bandaru Krishnaiah, Member (Finance)

In the matter of *Suo-Moto* determination of Variable Cost for the period from FY 2020-21 to FY 2023-24 for existing Biomass, Bagasse and Industrial waste based power projects in the State of Telangana, and having Power Purchase Agreements with the Distribution Licensees

ORDER

1. Section 62 of the Electricity Act, 2003 empowers the Commission to determine the tariff for supply of electricity by a generating company to a Distribution Licensee. Section 86(1)(e) of the Electricity Act, 2003 mandates the Commission to promote co-generation and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person.

2. In exercise of powers vested in it under Sections 62(1) read with 86(1)(a), (b), & (e) of the Electricity Act, 2003, the Commission, through this Order, determines the Variable Cost for the period from FY 2020-21 to FY 2023-24 for existing Biomass, Bagasse and Industrial waste based power projects in the State of Telangana, and having Power Purchase Agreements (PPAs) with the Distribution Licensees.

3. The Commission vide its *Suo-Motu* Order dated 21.04.2020 in O. P. No. 15 of 2020, approved the norms and determined the Variable Cost for the FY 2019-20 for existing Biomass, Bagasse and Industrial waste projects in the State of Telangana and having PPAs with the Distribution Licensees, as under:

Table 1: Approved Norms and Variable Cost for FY 2019-20

Sl. No.	Parameter	Unit	Approved for FY 2019-20		
			Biomass based power projects	Bagasse based co-generation power projects	Industrial waste based power projects
1.	Station Heat Rate	kcal/kWh	4200	3600	4200
2.	Auxiliary Consumption	%	10%	9%	10%
3.	Gross Calorific Value	kcal/kg	3100	2250	3100
4.	Fuel Price	Rs./MT	3168	1788	3168
5.	**Variable Cost**	**Rs./kWh**	**4.77**	**3.14**	**4.77**

4. The Commission has initiated a *Suo-Moto* proceeding for determination of Variable Cost for the period from FY 2020-21 to FY 2023-24 for existing Biomass, Bagasse and Industrial waste based power projects and accordingly issued the Public Notice dated 13.07.2020 inviting the written suggestions and comments from all the stakeholders on the proposed norms on or before 03.08.2020 by 5 pm. The Commission has received written suggestions and comments from two (2) nos. stakeholders within the stipulated time. The Commission has received written suggestions and comments from one (1) no. stakeholder after the stipulated time. The list of stakeholders who have submitted the written suggestions and comments is enclosed at Annexure 1 of the Order. The Commission has considered all the suggestions and comments received from all the stakeholders.

5. The Commission had proposed the following norms as mentioned in the Public Notice dated 13.07.2020 for the determination of Variable Cost for the period from FY 2020-21 to FY 2023-24 for existing Biomass, Bagasse and Industrial waste based power projects in the State of Telangana which are having PPAs with the Distribution Licensees:

Table 2: Proposed norms and Variable Cost for the period from FY 2020-21 to FY 2023-24 as mentioned in the Public Notice dated 13.07.2020

Sl. No.	Parameter	Unit	Proposed		
			Biomass based power projects	Bagasse based co-generation power projects	Industrial waste based power projects
1	Station Heat Rate	kcal/kWh	4200	3600	4200
2	Auxiliary Consumption	%	10%	9%	10%
3	Gross Calorific Value	kcal/kg	3100	2250	3100
4	Fuel Price				

Sl. No.	Parameter	Unit	Proposed		
			Biomass based power projects	Bagasse based co-generation power projects	Industrial waste based power projects
	FY 2020-21	Rs./MT	3326	1877	3326
	FY 2021-22	Rs./MT	3492	1971	3492
	FY 2022-23	Rs./MT	3667	2070	3667
	FY 2023-24	Rs./MT	3850	2174	3850
5	Variable Cost				
	FY 2020-21	Rs./kWh	5.0069	3.3002	5.0069
	FY 2021-22	Rs./kWh	5.2568	3.4655	5.2568
	FY 2022-23	Rs./kWh	5.5202	3.6396	5.5202
	FY 2023-24	Rs./kWh	5.7957	3.8224	5.7957

6. The norms viz., Station Heat Rate, Auxiliary Consumption and Gross Calorific Value have been proposed at the same level of the norms specified by the Hon'ble APTEL and also considered in the determination of Variable Cost upto FY 2019-20. The Fuel Prices approved for FY 2019-20 have been considered as the base and escalated annually by the normative value of 5% to arrive at the Fuel Prices for the period from FY 2020-21 to FY 2023-24. The Variable Cost has been computed based on the proposed norms and Fuel Prices.

7. The suggestions and comments filed by the stakeholders and Commission's views thereon have been summarised issue wise as detailed below:

Issue No. 1: General

Stakeholders' submission

8. The study as per the Judgment of the Hon'ble Appellate Tribunal for Electricity (APTEL) dated 20.12.2012 in Appeal Nos. 150, 166, 172, 173 of 2011 and 9, 18, 26, 29 and 38 of 2012, has not been undertaken for the co-generation plants operating in the State. Over the years, there has been technology improvements and one such improvement is installation of air-cooled condensers, instead of water-cooled condensers, which reduces water consumption. Installation of air-cooled condensers increases Station Heat Rate (SHR). With aging of the plant, its efficiency reduces and SHR increases. These factors need to be taken into account in determination of Variable Cost.

9. The threshold Plant Load Factor (PLF) of 55% for recovery of fixed cost was determined based on the assumption that the co-generation units run for 230 days at 90% utilisation factor. However, the PLF of 55% could not be achieved in most of the years due to which the fixed cost for those years remained unrecovered. The stakeholder requested the Commission to provide suitable

compensation enabling the plants to recover the unrecovered fixed cost.

10. The PPAs provide for opening of Letter of Credit by the Distribution Licensees but that provision was kept in abeyance on the assurance of the then Transmission Corporation of Andhra Pradesh (APTransco) to meet its obligation on time. As there is considerable delay in payment of bills by the Distribution Licensees, the Commission may issue directions for opening of Letter of Credit and release of payments due.

11. The generators are receiving the payments with substantial delays resulting in frequent shutdowns. The Regulations of Central Electricity Regulatory Commission (CERC) permit a late payment surcharge at the rate of 1.50% per month for delay beyond a period of 45 days from the date of presentation of bills and hence a higher surcharge would ensure that the Distribution Licensees pay before due dates.

12. The Distribution Licensees have been raising the bills towards maintenance of line from the generating point to the substation. Such expenses were not considered in determination of the Operation and Maintenance (O&M) expenses. The Commission may allow pass through of such expenses.

13. The co-generation plants had to install 'reliable and efficient speech and data communication systems' which was not considered in determining the capital cost. Most of the PPAs are nearing completion and hence the Commission may allow compensation enabling the plants to recover this additional capital cost.

Commission's view

14. The Commission is mindful of the Judgment of the Hon'ble APTEL referred by the stakeholder. The erstwhile Andhra Pradesh Electricity Regulatory Commission (APERC) had conducted a study in the year 2014 on the performance of the Non-Conventional Energy (NCE) power projects and determined the norms of operation for the Bagasse based co-generation power projects including the plants currently located in Telangana State. The Commission is also mindful of the Regulations/Orders issued by CERC and other State Electricity Regulatory Commissions (SERCs) with reference to determination of Variable Cost. The Commission has initiated the current proceedings for determination of Variable Cost for the period from FY 2020-21 to FY 2023-24 for existing Biomass, Bagasse and Industrial waste based power

projects and accordingly issued the Public Notice inviting the written suggestions and comments on the proposed norms from the stakeholders. The Commission has provided ample opportunity to all the stakeholders including the co-generation plants to place their views with all the relevant material before the Commission for taking a holistic view in the matter. In view of the holistic approach adopted by the Commission, the statement of the stakeholder referring to the Judgment of the Hon'ble APTEL dated 20.12.2012 is misplaced.

15. Although the stakeholder has submitted that installation of air-cooled condensers needs to be taken into account in determination of Variable Cost, the proposed norms of operation have not been substantiated based on the same. Therefore, the Commission does not find any merit in such submissions.

16. The PLF will depend on the availability of the plant and fuel and these factors cannot be treated as uncontrollable. The Commission has taken note of the PLFs submitted by the stakeholder. The stakeholder has not submitted any justification for such lower PLFs. Consistent operation at lower PLF would result in faster deterioration of the equipment. Lower PLF would result in inferior performance parameters and such inferior performance parameters cannot be the basis for tariff determination on normative basis. Hence, the aging of the plant cannot be considered as valid reason more so when the plants had been consistently underperforming.

17. As regards (i) unrecovered fixed cost due to lower PLFs, (ii) opening of Letter of Credit by the Distribution Licensees, (iii) late payment surcharge for delayed payments, (iv) line maintenance charges and (v) additional capital cost, the said issues are not the subject matter of the current proceedings and hence, the Commission does not find it prudent to express any opinion on the same.

Issue No. 2: Auxiliary Consumption for Bagasse based co-generation power projects

Stakeholders' submission

18. The average auxiliary consumption of four co-generation plants in State for FY 2015-16 to FY 2019-20 works out to 11.26%. Although the co-generation power plants and sugar units are close proximity, power consumption of co-generation plants (Boiler, Turbine, Cooling Towers and other auxiliaries) is over 10%. Sugar plant (sugarcane milling and boiling house equipment) consumes around 22 units for every ton of sugarcane crushed. Hence, the auxiliary consumption

of co-generation plant cannot be reduced on the grounds that some of its equipment are common with sugar plant.

19. The co-generation plants and biomass plants have same equipment except for the following:

Table 3: Uncommon equipment amongst Bagasse based co-generation plants and Biomass power plants

List of uncommon equipment	Bagasse based co-generation power plants	Biomass power plants
Wood chipping and cutting machine	Not available	Used for cutting/chipping Biomass
Bagasse conveyors from Boiler to yard	Total 3 nos. Compared to Biomass plants 2 additional conveyors for conveying excess bagasse from Boiler to storage yard and conveying Bagasse from yard to Boiler	1 no.

20. Hence, it cannot be said that Bagasse requires less processing than Biomass and the auxiliary consumption of Bagasse based co-generation power plants may be specified as 10% on par with Biomass plants.

Commission's view

21. The Commission has taken note of the PLFs submitted by the stakeholder. The stakeholder has not submitted any justification for such lower PLF. Lower PLF would result in higher auxiliary consumption in percentage terms and such higher auxiliary consumption cannot be the basis for tariff determination on normative basis. Moreover, the auxiliary consumption of 9% has been considered in determination of Fixed Cost for 20 years as well as Variable Cost upto FY 2019-20. As the Commission is determining the norms for the existing projects in this Order, the Commission finds it appropriate to consider the auxiliary consumption norm as 9% for Bagasse based co-generation power projects for the period from FY 2020-21 to FY 2023-24.

Issue No. 3: Station Heat Rate for Bagasse based co-generation power projects

Stakeholders' submission

22. The bagasse consumption during season for power generation including process steam is in the range of 2.7-3.0 kg/kWh which translates to SHR of

6075-6750 kcal/kWh. The SHR during off-season is in the range of 4300-4400 kcal/kWh. Further, with aging of the plant, its efficiency decreases and hence, the SHR may be considered at minimum of 4200 kcal/kWh.

Commission's view

23. The SHR of 3600 kcal/kWh for Bagasse based co-generation power projects was considered in the determination of Variable Cost upto FY 2019-20. The stakeholder has neither submitted the basis for the SHR claimed as actual achievement nor the justification for the same to be higher than the normative value in the previous years. Therefore, the Commission does not find any merit in the stakeholder's submissions in this regard.

Issue No. 4: Specific fuel consumption for Bagasse based co-generation power projects

Stakeholders' submission

24. Based on the SHR of 4200 kcal/kWh and Gross Calorific Value (GCV) of 2250 kcal/kg, the specific fuel consumption works out to 1.87 kg/kWh. The average specific fuel consumption of four co-generation plants in State for FY 2015-16 to FY 2019-20 works out to 2.64 kg/kWh. Hence, the specific fuel consumption may be considered at minimum of 2.64 kg/kWh.

Commission's view

25. The Commission had considered the SHR of 3600 kcal/kWh and GCV of 2250 kcal/kg till FY 2019-20, based on which the specific fuel consumption works out to 1.60 kg/kWh in respect of Bagasse based co-generation power projects. The stakeholder has neither submitted the basis for the specific fuel consumption claimed as actual achievement nor the justification for the same to be higher than that computed based normative SHR and GCV approved for the previous years. The issue of SHR has been dealt with in the preceding paragraphs. In the absence of any specific submissions regarding the GCV, the Commission does not find any merit in the stakeholder's submissions regarding specific fuel consumption.

Issue No. 5: Fuel price for Biomass based power projects

Stakeholders' submission

26. The Biomass price has been proposed at Rs. 3326/MT for FY 2020-21 which is in line with the CERC Order dated 21.07.2020 and is on par with the price for

Andhra Pradesh. This price needs to be reviewed on the following grounds:

27. **Size of catchment area**: The Telangana State was carved out in the year 2014 and out of the then Biomass based power projects, 28 nos. projects are in residual Andhra Pradesh and 6 nos. projects are in Telangana State. The geographical area of Telangana is 1,12,007 sq. km. as against 1,62,975 sq. km. of Andhra Pradesh. The licences for Biomass units in the combined State were allotted based on biomass availability establishing the fact that Telangana region did not have enough raw material availability. Thus, the cost of fuels in Telangana is much higher as compared to Andhra Pradesh as the collection has to be made over large area for a given biomass unit viz., 18,680 sq. km. in Telangana vs 5820 sq. km. in Andhra Pradesh.

28. **Geography**: The Telangana State is part of Deccan Plateau and with Maharashtra, which is also a part of Deccan Plateau, as boundary in the North and the West. The Biomass price for Maharashtra is Rs. 3872/MT which is 16.4% higher than Telangana State. Whereas, the geography and cropping pattern of Telangana State is similar to that of Maharashtra. So, the Biomass price for Telangana State has to be considered in line with that of Maharashtra.

29. **Boundary**: The Biomass power projects in Telangana State collect the Biomass from the neighbouring States Maharashtra and Andhra Pradesh. The average of Biomass prices for Maharashtra and Andhra Pradesh works out to Rs. 3617/MT and the same may be considered by the Commission for FY 2020-21 with 5% annual escalation.

Commission's view

30. The Commission has considered the approved Biomass Price for FY 2019-20 as base Price and escalated annually by 5% to arrive at the Biomass Prices for the period from FY 2020-21 to FY 2023-24. It is pertinent to mention that the Biomass Prices proposed by the Commission are in line with the Prices specified by the CERC. The arrangement for adequate fuel at economical prices is the responsibility of the generator and the same cannot be treated as uncontrollable factor. The Fuel Price varies depending on various factors including demand and supply. The stakeholder has not submitted any supporting documents to substantiate its submissions regarding the Biomass procurement. The generator is free to choose its sources of fuel to supply

electricity to the Distribution Licensees at the tariff determined by the Commission. In light of the above, the Commission does not find any merit in stakeholder's submissions prudent enough for revising the Biomass price from that proposed in the Public Notice.

Issue No. 6: Fuel price for Bagasse based co-generation power projects

Stakeholders' submission

31. The process and cost of generation of Bagasse is more or less uniform throughout the Country. However, the Bagasse price varies from State to State. The CERC has adopted the price of Rs. 2671/MT and Rs. 1877/MT for Haryana and Telangana respectively for FY 2020-21. The Commission may take up the issue of disparity in Bagasse price and arrive at a uniform rate for Bagasse throughout the country.

32. As Bagasse is also a Biomass, it may be appropriate to link the Bagasse price to Biomass and consider the Bagasse price as Rs. 2414/MT for FY 2019-20 with annual escalation of 5%.

Commission's view

33. The stakeholder's request to arrive at a uniform rate for Bagasse throughout the country is out of context and does not require any consideration in the current proceedings.

34. The methodology proposed by the stakeholder for arriving at the fuel price for Bagasse is devoid of merits and hence not considered by the Commission.

Issue No. 7: Variable Cost

Stakeholders' submission

35. One stakeholder submitted that it has no comments on the Variable Cost determined by the Commission.

Commission's view

36. The Commission has taken note of the stakeholder's submission.

VARIABLE COST DETERMINED BY THE COMMISSION

37. Based on the above, the Commission approves the following norms and determines the Variable Cost for the period from FY 2020-21 to FY 2023-24 for existing Biomass, Bagasse and Industrial waste based power projects in the

State of Telangana which are having PPAs with the Distribution Licensees:

Table 4: Approved norms and Variable Cost for the period from FY 2020-21 to FY 2023-24

Sl. No.	Parameter	Unit	Approved		
			Biomass based power projects	Bagasse based co-generation power projects	Industrial waste based power projects
1	Station Heat Rate	kcal/kWh	4200	3600	4200
2	Auxiliary Consumption	%	10%	9%	10%
3	Gross Calorific Value	kcal/kg	3100	2250	3100
4	Fuel Price				
	FY 2020-21	Rs./MT	3326	1877	3326
	FY 2021-22	Rs./MT	3492	1971	3492
	FY 2022-23	Rs./MT	3667	2070	3667
	FY 2023-24	Rs./MT	3850	2174	3850
5	Variable Cost				
	FY 2020-21	Rs./kWh	5.0069	3.3002	5.0069
	FY 2021-22	Rs./kWh	5.2568	3.4655	5.2568
	FY 2022-23	Rs./kWh	5.5202	3.6396	5.5202
	FY 2023-24	Rs./kWh	5.7957	3.8224	5.7957

APPLICABILITY

38. The Commission directs the Distribution Licensees namely Southern Power Distribution Company of Telangana Limited (TSSPDCL) and Northern Power Distribution Company of Telangana Limited (TSNPDCL) to pay the above Variable Cost for the period from FY 2020-21 to FY 2023-24 for the power purchased from existing Biomass, Bagasse and Industrial waste based power projects in the State of Telangana and having PPAs with the Distribution Licensees.

This Order is corrected and signed on this 28th day of August, 2020

Sd/-	Sd/-	Sd/-
(BANDARU KRISHNAIAH)	(M.D. MANOHAR RAJU)	(T. SRIRANGA RAO)
MEMBER	MEMBER	CHAIRMAN

ANNEXURE 1 – LIST OF STAKEHOLDERS WHO SUBMITTED WRITTEN SUGGESTIONS AND COMMENTS

Sl. No.	Name of the Stakeholder
1.	Southern Power Distribution Company of Telangana Ltd., #6-1-50, Corporate Office, Mint Compound, Hyderabad – 500 063
2.	Telangana Sugar Mills Association, Gayatri Sugars Ltd., B2, TSR Towers, Raj Bhavan Road, Somajiguda, Hyderabad – 500 082
3.	Biomass Energy Developers Association, No. 13, 4th Floor, Maitri Arcade, 2-3-42/52, M. G. Road, Secunderabad – 500 003

BEFORE THE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION AT HYDERABAD

O.P. No. of 2021

Between:

M/S. Madhucon Sugar and Power Industries Limited

Plaintiff
Petitioner
Appellant
Complainant

Versus

TSNPDCL

Defendant
Respondent
Accused

I/We

M/S. Madhucon Sugar and Power Industries Limited, Rajeswarapuram, Ammagudem Post, Nelakondapalli Mandal Khammam District, Rep. by its Director (Operations) Mr. M. Srinivas Rao.

do hereby appoint and retain

CHALLA GUNARANJAN
M.K. VISWANATH NAIDU
M. SRIDHAR
DEEPAK CHOWDARY
Advocates

Advocate/s to appear for me/us in the above Suit/Case and to conduct and prosecute and defend the same and proceedings, that may be taken in the respect of any application for execution or any Decree or Order passed therein I/We empower my/our Advocate to appear in all miscellaneous proceedings in the above Suit matter ill all Decree or Orders are fully satisfied or adjusted to compromise and to obtain the return of Documents and draw any moneys that might be payable to me/us the said suit or of matter and notice I/We do further empower my/our Advocate to accept on my/our behalf, service of all or any appeals or petitions filed in any Court of appeal reference or revision with regard to said suit or matter before the disposal of the same in this Hon'ble Court.

X M. Srinivas Rao

Madhucon Sugar and Power Industries Ltd. Rajeswarapuram 507160

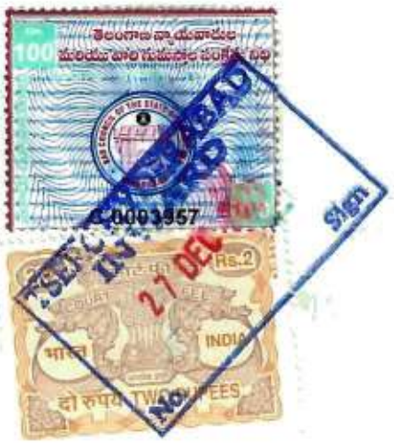
Certified that the executant who is well acquainted with English and this Vakalatnama and the contents of the Vakalatnama were read out and explained in Telugu/Urdu/Hindu to the executant or he/she/they being unacquainted with English who appeared to have perfectly understood the same and signed/put his/her/their name or mark in my presence.

Identified by: Deepak Chowdary Advocate.

Executed on this the 21st day of December 2021

Advocate.
(S. Chakrapani)

BEFORE THE TELANGANA STATE ELECTRICITY REGULATORY COMMISSION AT HYDERABAD



O.P. No. of 2021

Between:

Plaintiff
Petitioner
M/S. Madhucon Sugar and Power Industries limited
Appellant
Complainant

And

Defendant
Respondent
TSNPDCL
Accused

Accepted

VAKALAT

Advocates for:

Filed on:

Address for service of the said Advocate/s

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