

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

**PETITION NO:        OF 2017**

**IN THE MATTER OF:**

SURYA VIDYUT LIMITED  
CESC House, Chowringhee Square,  
Kolkata – 700001

... Petitioner

**AND**

GUJARAT URJA VIKAS NIGAM LIMITED  
2<sup>nd</sup> Floor, Sardar Patel Vidyut Bhavan,  
Race Course,  
Vadodara – 390007

... Respondent

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Place: Ahmedabad  
Date: 30/08/2017

For Nanavati Associates  
Advocates for the Petitioner

**BEFORE THE GUJARAT ELECTRICITY REGULATORY  
COMMISSION, GANDHINAGAR**

PETITION NO. \_\_\_\_\_ OF 2017

**IN THE MATTER OF:**

Approval of the Power Purchase Agreement dated 31.03.2017 executed between Gujarat Urja Vikas Nigam Limited and Surya Vidyut Limited under Section 86 of the Electricity Act, 2003

**AND IN THE MATTER OF:**

**SURYA VIDYUT LIMITED**

CESC House, Chowringhee Square,  
Kolkata – 700001



... Petitioner

**AND**

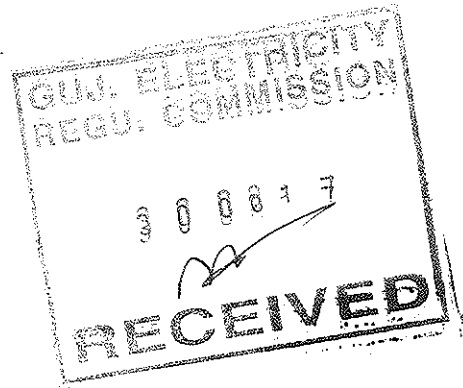
**GUJARAT URJA VIKAS NIGAM LIMITED**

2<sup>nd</sup> Floor, Sardar Patel Vidyut Bhavan,  
Race Course,  
Vadodara – 390007

... Respondent

**PETITION UNDER SECTION 86 OF THE ELECTRICITY ACT, 2003  
FOR APPROVAL OF THE POWER PURCHASE AGREEMENT  
DATED 31.03.2017 EXECUTED WITH GUJARAT URJA VIKAS  
NIGAM LIMITED**

**MOST RESPECTFULLY SHEWETH**



1. The instant petition is being preferred by Surya Vidyut Limited ("Petitioner"/"SVL"), seeking approval of this Hon'ble Commission for the long term Power Purchase Agreement dated 31.03.2017 ("PPA") for supply of 10 MW of power to Gujarat Urja Vikas Nigam Limited ("Respondent"/"GUVNL") at the rate of Rs. 3.46/ kWh (three rupees and forty six paise per



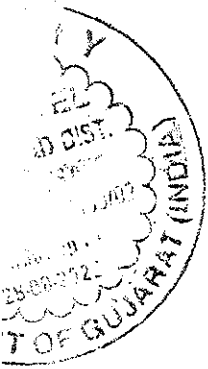
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kWh) for a period of 25 years. The Petitioner is approaching this Hon'ble Commission to accord its approval to the PPA under Section 86 of the Electricity Act, 2003 ("Electricity Act") as well as the PPA records that the same has been executed by the parties subject to the approval of this Hon'ble Commission. Copy of the PPA is annexed and marked as ANNEXURE -A.

2. Surya Vidyut Limited, i.e. the Petitioner is a generating company within the meaning of Section 2(28) of the Electricity Act. It has a 10 MW wind energy based Power Plant at Miya Khijadiya, Tramboda, Hirana, Sukavada and Amrapur Villages, Babra, Lathi and Vinchiya Talukas, Amreli and Rajkot District, Gujarat ("Wind Power Project"), through which the Petitioner is supplying power to GUVNL.
3. Gujarat Urja Vikas Nigam Limited, i.e. the Respondent is the power procurer on behalf of the distribution licensees in the State of Gujarat, which undertakes the distribution and supply of power to various distribution licensees under the regulatory control of this Hon'ble Commission.
4. The Wind Power Project was granted approval for development by Gujarat Energy Development Agency ("GEDA") from time to time starting from November 2016 based on which the developmental activities were initiated. It is submitted that the construction of the Wind Power Project was almost completed by February 2017 and therefore, the Petitioner initiated negotiation with the representatives of GUVNL around the same time for executing the PPAs and finally executed the PPAs on 31.03.2017 for the supply of power from the Wind Power Project. It is noteworthy that the PPA was entered into with the GUVNL as keeping the Wind Power Project idle after commissioning would not have been in the interest of any the stakeholders.
1. While the negotiations were continuing with GUVNL, the Ministry of New and Renewable Energy ("MNRE"), Government of India concluded the first ever competitive bid process for wind energy based power plants in India on 23<sup>rd</sup> February 2017. In the said competitive bid of Ld. MNRE, the tariff was discovered at the rate of Rs. 3.46/kWh. Accordingly, considering the factors on ground and the cost-effectiveness of Rs.3.46 / kWh, the Government of Gujarat vide letter No.PRC/11/2017/483/B dated 28.03.2017 directed GUVNL to procure power from wind energy based generators at the rate of R.3.46/kWh. In this regard, it is significant to note that the tariff of Rs. 3.46/kWh agreed by the



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Petitioner and GUVNL vide the PPA in question, is comparable to the tariff of Rs. 3.46/kWh discovered through the said competitive bidding process conducted by the Ld. MNRE and is significantly lower than the preferential tariff of Rs.4.19 / kWh which not only promotes generation of electricity from renewable sources of energy but also is in public interest. Annexed hereto and marked as **Annexure-B** is a copy of the aforesaid letter dated 28.03.2017.

2. It is humbly submitted that this Hon'ble Commission is vested with the power to grant approval to the PPA. As per Section 86 (1) (b) of the Electricity Act, this Hon'ble Commission has the power to regulate the purchase and procurement process of the distribution licensee of Gujarat. Further, Section 62 (1) (a) of the Electricity Act, states that the Appropriate Electricity Regulatory Commission shall determine the tariff for supply of electricity by a generating company to a distribution licensee. Therefore, it is submitted that this Hon'ble Commission may exercise its power under the aforesaid statutory provisions to grant its approval to the PPA.
3. It is significant to note that this Hon'ble Commission vide the Order No. 2 of 2016 dated 30.08.2016 ("**Tariff Order**") has determined the terms and condition for supply of power by wind energy generators to the distribution licensees, including the generic tariff of Rs. 4.19/kWh (four rupees and nineteen paise per kWh). The said tariff is applicable to all such wind energy generators for which the power purchase agreements are signed in respect to their Wind Turbine Generators ("**WTGs**") installed and commissioned on or after the date of the Tariff Order. The tariff of Rs.3.46 / kWh is significantly lower than the tariff determined by the Hon'ble Commission for distribution licensees for procurement of power from wind based generators. The relevant extract of the Tariff Order is excerpted below for convenience:

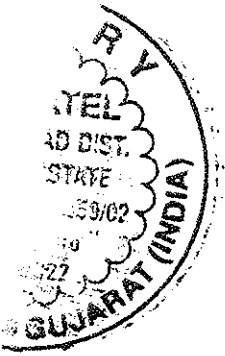
*"The net tariff determined by the Commission is Rs. 4.19/kWh payable by the distribution licensees to wind turbine generators which are installed and commissioned during the control period of this order for which the PPAs shall be signed by the distribution licensees with the wind turbine generators"*

Copy of the Tariff Order is annexed and marked as **ANNEXURE-C**.

Further, it is noteworthy that the generic tariff of Rs. 4.19/kWh, determined by this Hon'ble Commission is exclusive of the incentive receivable by the wind energy-based generators under the Generation Based Incentive ("**GBI**") Scheme.



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This Hon'ble Commission vide the Tariff Order noted that the GBI Scheme was re-introduced by MNRE with effect from 04.09.2013. Under the said scheme, a GBI is offered to wind energy generators at Rs.0.50/unit (fifty paise per unit) of electricity injected into the grid network for a period not less than 4 years and a maximum period of 10 years with a cap of Rs. 1 crore/ MW. This Hon'ble Commission keeping in view the GBI scheme, determined the generic tariff on the cost-plus approach exclusive of the said GBI incentive. The relevant extract of the Tariff Order is excerpted below for convenience:

*"The Commission has followed cost plus approach for arriving at tariff for sale of electricity generated from wind power project to the distribution licensees during the new control period. The single levelised tariff has been specified after taking into account the benefit due to AD available to wind power projects. In view of above, the Commission decides that GBI will not be shared with distribution utilities and end consumers. The wind power developer/ investor who are eligible to claim GBI as per MNRE guidelines can retain the incentive over and above the tariff determined by the Commission in this order"*

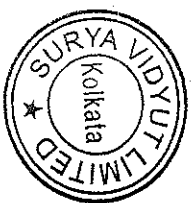
5. It is submitted that the PPA in question, has been executed by the Petitioner in respect of its Wind Power Project commissioned on 30.03.2017. Since the Petitioner's Wind Power Project is squarely covered by the Tariff Order, it is entitled to the tariff of Rs. 4.19/kWh in addition to the GBI of Rs. 0.50/kWh under the GBI Scheme of MNRE. However, the Petitioner has executed the PPA at the tariff of Rs. 3.46/kWh with GUVNL for supply of 10 MW from its Wind Power Project pursuant to the negotiations with GUVNL as well as keeping in view the time line for availing the benefit of the GBI scheme of MNRE.
6. Further, it is submitted that this Hon'ble Commission is guided by Section 61 of the Electricity Act, National Tariff Policy, 2016 ("Tariff Policy 2016") and Gujarat Wind Policy 2016 in determining the generic tariff for the wind based generating stations. The relevant extracts of Section 61 of the Electricity Act, Tariff Policy 2016 and Gujarat Wind Policy 2016 are excerpted below for convenience:

**"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: -*

...

- (d) safeguarding of consumers' interest and at the same time, recovery of the cost of electricity in a reasonable manner;



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(i) the National Electricity Policy and tariff policy”

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

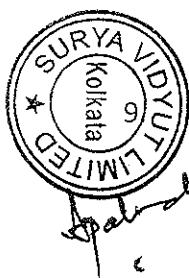
*However, till such notification, any such procurement of power from renewable energy sources projects, may be done under Section 62 of the Electricity Act, 2003. While determining the tariff from such sources, the Appropriate Commission shall take into account the solar radiation and wind intensity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

**17. Renewable Power Purchase Obligation (RPO):**

... Obligated Entities may fulfil their RPO by purchasing wind power at the tariff determined by GERC or tariff discovered through competitive bidding process keeping in view the interest of consumers”

7. Further, it is submitted that this Hon'ble Commission as well as the Hon'ble Appellate Tribunal for Electricity has time and again re-affirmed that the prevalent regulatory regime aims at determining the generic tariff for renewable energy based generators that strikes a balance between the interest of the consumers and the generators.
8. It is stated that this Hon'ble Commission has determined the generic tariff of Rs. 4.19/kWh for wind energy based generators by striking a balance between end consumers' interest and promotion of generation through renewable energy sources i.e. wind. However, from a bare perusal of the aforementioned regulatory regime, it is clear that this Hon'ble Commission may approve a power purchase agreement with tariff lesser than the tariff determined vide the Tariff Order i.e. Rs. 3.46/kWh as compared to Rs. 4.19/kWh, in the interest of the end consumers. Therefore, it is submitted that this Hon'ble Commission may grant its approval to the PPA executed by the Petitioner with GUVNL.

Further, it is humbly stated that the PPA with a tariff of Rs. 3.46/kWh benefits the consumers since it is significantly lower than the tariff of Rs. 4.19/ kWh.



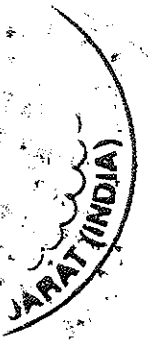
11. The Petitioner craves leave to make further submissions as may be required at a future date.

## PRAYER

In view of the above, the Petitioner respectfully prays that this Hon'ble Commission may:

- (a) Accord its approval for supply of power of 10 MW from Petitioner's wind based power plant at Miya Khijadiya, Tramboda, Hirana, Sukavada and Amrapur Villages, Babra, Lathi and Vinchiya Talukas, Amreli and Rajkot District, Gujarat ("**Wind Power Project**") for a period of 25 years;
- (b) Approve the tariff of Rs. 3.46/ kWh for the supply of power to Gujarat Urja Vikas Nigam Limited;
- (c) Approve the Power Purchase Agreement dated 31.03.2017, annexed as **Annexure-A**;
- (d) Direct Respondent i.e. Gujarat Urja Vikas Nigam Ltd. to pay for the past dues/arrears for the power supplied from the date of commissioning of the **Wind Power Project**;



- 
- (e) Expeditiously dispose of the Petition keeping in view the facts of the present matter; and
- (f) Pass such other or further order(s) as this Hon'ble Commission may deem fit and proper in the facts and circumstances of the case.

#### DECLARATION

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

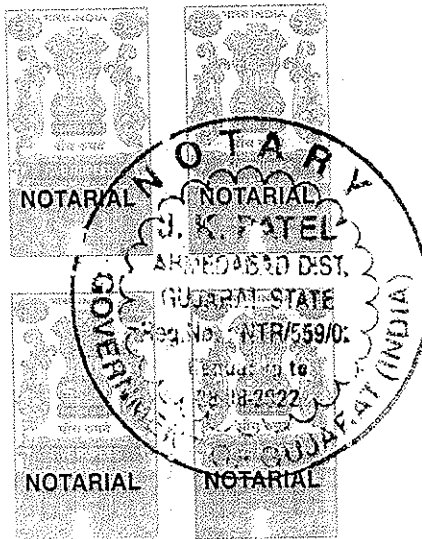
Date: 30.08.2017

Place: Ahmedabad



Nanavati Associates

Advocate for the Petitioner





BEFORE THE GUJARAT ELECTRICITY REGULATORY  
COMMISSION, GANDHINAGAR

PETITION NO. \_\_\_\_\_ OF 2017

AND IN THE MATTER OF:

SURYA VIDYUT LIMITED

.... Petitioner

AND

GUJARAT URJA VIKAS NIGAM LIMITED

... Respondent

AFFIDAVIT

1. ADRIT PALCHOUNHURY, s/o. L.M.M. PALCHOUNHURY, aged about 49 years residing at Kolkata, do solemnly affirm and say as follows:

1. I am the GM - Business Development of the Surya Vidyut Limited and authorized signatory of the Petitioner Company herein and I have read the petition pertaining to the above case and I am competent and duly authorized by the Petitioner Company to file this Affidavit.

2. I have gone through the contents of the accompanying Petition and I say that the facts stated therein are based on the records of the Petitioner Company maintained in the normal course of business and believed by the deponent to be true.



DEPONENT

VERIFICATION:

I, Adrit Palchoudhury the Deponent above named do hereby verify that the contents of my above affidavit are true to my knowledge, no part of it is false and nothing material has been concealed there from.

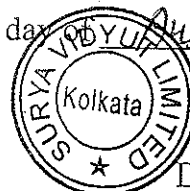
Verified at A'bad on this 30 day of Aug -2017.

IDENTIFIED BY ME  
ADVOCATE

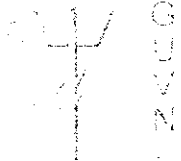
Sr No. 7558 / 2017  
SOLEMNLY AFFIRMED  
BEFORE ME

Jyotsna K. Patel

JYOTSNA K. PATEL  
NOTARY dt: 30/08/17



DEPONENT

	<b>Gujarat Urja Vikas Nigam Limited</b> Sardar Patel Vidyut Bhavan, Race Course, Vadodara 390007 Phone (0265) 2334751 (Direct), 2340289 Fax : (0265) 2344543, 2337918, 2338164 PBX : (0265) 2310582-86, Web : gseb.com CIN U40109GJ2004SGC045195
	Ref No. GUVNL/COM/GM (IPP)/RE/ 322
Date: 31/03/2017	

To,  
M/s Surya Vidhyut Limited  
CESC House Chowringhee Squire,  
Kolkata-700001

**Sub: PPA between M/s Surya Vidhyut Limited & GUVNL for 2 MW Wind Project at  
Vil:- Ishapar Tal:- Babra Dist:-Amreli for the period of 25 years**

Sir,

This has reference to your letter dated 31.03.2017 for signing Power Purchase Agreement for 2 MW Wind Project located at Vil:- Ishapar Tal:- Babra Dist:-Amreli

In this context, please find enclosed herewith copy of Power Purchase Agreement executed between M/s Surya Vidhyut Limited and GUVNL on 31.03.2017 with below mentioned details:-

No.	Item	Description
1.	WF Capacity	2 MW (1 WTG x 2000 KW)
2.	WTG ID No.	IWISL/2000/16-17/4586
3.	Location	Vil:- Ishapar Tal:- Babra Dist:-Amreli
4.	Sending end Substation	220 KV Sukhpur s/s
5.	Term of PPA	25 years

Kindly acknowledge the receipt of the agreement.

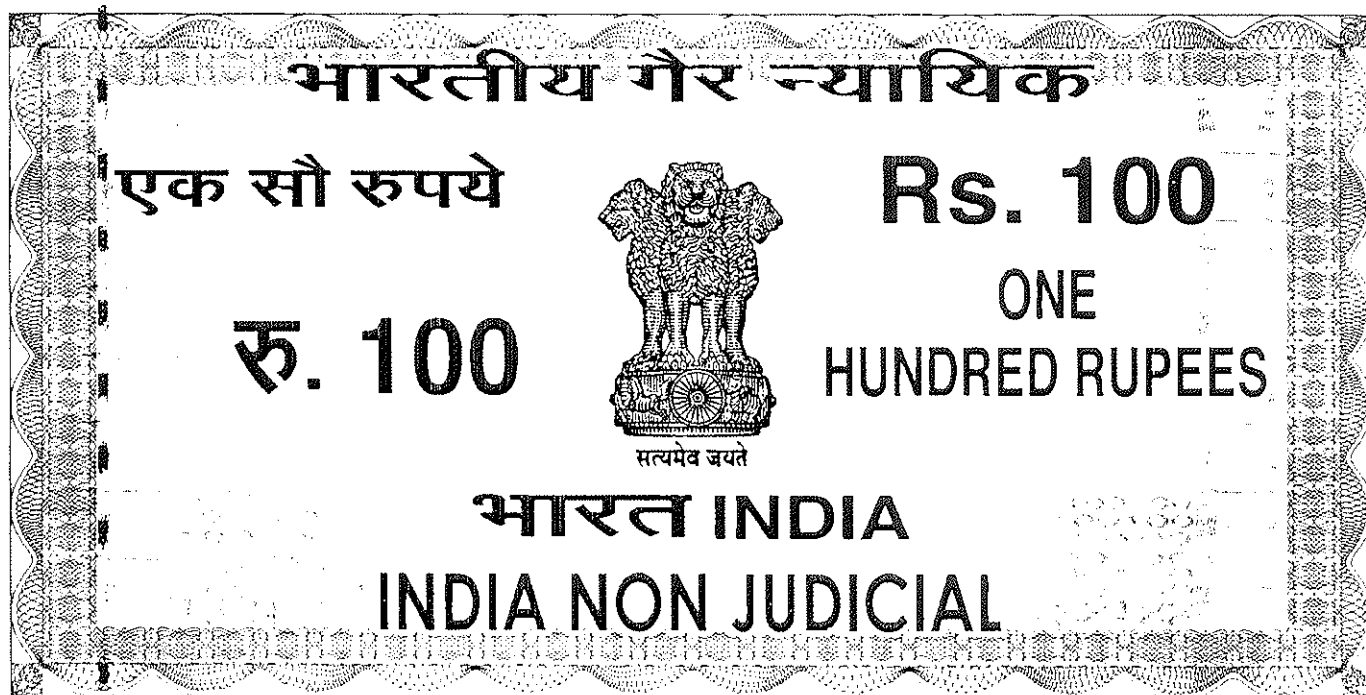
Thanking you,

Yours faithfully,




(Sailaja Vachhrajani)  
General Manager (IPP)

Encl: As above



ગુજરાત ગુજરાત GUJARAT

BA 046134

સંજ્ઞાક્રમ નંબર: ૬૨૬૬૨ તા: ૨૧/૦૩/૨૦૧૭ રા. ૧૦૦૧-  
 ખરીદનારનું નામ: સુધા વિદ્યુત લી  
 સરનામું: શ્રી હર્ષિસ શ્રી હર્ષિ બારીદી મકાન કોલકા-૭૦૦૦૦૧  
 હસ્તે: અલિષ્ટ સહી:  
 સ્ટેમ્પ વેન્ડર  તા. ૪/૨૦૦૧  
 શ્રીમતી શોભાબેન હેમંતકુમાર સોદાવાલા તા. ૮/૧૧/૨૦૦૧  
 કોપ વ. FF-04, હર્ષ હોલ, કેળાવ કોમ્પ્લેક્સ, કાચો વિંગેસ્ટર મકાન મંદિર બજાર, બી.પી.સી. હવેલી રોડ, વડોદરા. ફોન: ૨૩૨૧૪૦૦

This Power Purchase Agreement is made and entered into at Vadodara on this 31<sup>st</sup> day of March 2017 between

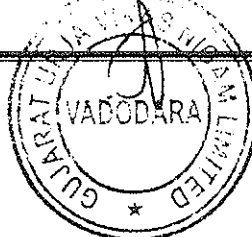
M/s SURYA VIDYUT LIMITED

Company having its registered office at CESC HOUSE CHOWRINGHEE  
Square Kalkatta - 700001

\_\_\_\_\_ India (hereinafter referred to as "Power Producer", which expression shall, unless repugnant to the context or meaning thereof, include its successors and assignees) as party of first part.

AND

GUJARAT URJA VIKAS NIGAM LIMITED incorporated under Company Act 1956 (1 of 1956) having its Registered office at Sardar Patel Vidyut Bhavan, Race Course Vadodara – 390 007, (hereinafter referred to individually, as "GUVNL" or "Power Procurer", which expression shall, unless repugnant to the context or meaning thereof, include its successors and assignees) as party of the second part.



WHEREAS, the Gujarat Energy Development Agency (GEDA) vide letter No: GEDA/PWF/ILOISL/SVL/2016-17/14484 dated 30/3/2017 has permitted the Power Producer to set up Wind Energy based Power Project of 12 MW capacity in Gujarat to generate power under the Gujarat Electricity Regulatory Commission (Power Procurement From Renewable Sources) (First Amendment) Regulations, 2014 (Notification No. 2 of 2014) and amended from time to time.

AND, WHEREAS, the Power Producer has taken responsibility to set up requisite power injection system into Gujarat Energy Transmission Corporation Ltd (GETCO) Grid to commensurate with the total energy supplied at Common Delivery Point.

AND, WHEREAS the GUVNL agrees to purchase such power with Discom wise share to be decided from time to time.

AND, WHEREAS Govt. of Gujarat vide Resolution G.R. No.SLR-11-2016-164-B dated 02.08.2016 has notified the Gujarat Wind Power Policy 2016 which shall remain operational for the period upto 30.06.2021.

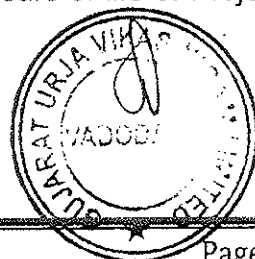
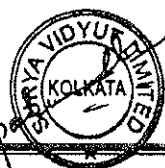
AND, WHEREAS the Hon'ble Gujarat Electricity Regulatory Commission (Commission) vide its Order No. 2 of 2016 dated 30.08.2016 has decided that during the control period from 30.08.2016 to 31.03.2019 the DISCOMs may procure electricity from the Wind Power Projects at the tariff of Rs. 4.19 / Unit determined by Commission under Section 62 of the Act or may carry out Competitive Bidding for procurement of electricity through transparent process of bidding under Section 63 of the Act and the DISCOMs may approach Commission for adoption of the tariff discovered through Competitive Bidding Process and in such case, the tariff determined by Commission shall act as a ceiling tariff.

AND WHEREAS, during the recent Competitive Bidding conducted by SECI / MNRE, the new record low tariff of Rs. 3.46 / unit was discovered (in which two parties have offered capacity installation in Gujarat also).

AND WHEREAS, considering the fact that if PPAs are not signed with the Investors / Wind Power Project Developers who are ready for commissioning and in absence of PPA if they could not commission their Projects on or before 31.03.2017, the GBI Benefit available upto 31.03.2017 shall be at jeopardy and also taking into consideration the cost-effectiveness of Rs. 3.46 / unit discovered in the recent Competitive Bidding vis-a-vis the preferential tariff of Rs. 4.19 / unit, the Government of Gujarat vide their letter no. PRC/11/2017/483/B dated 28.03.2017 has accorded approval for signing PPAs only for Wind Power Projects that are commissioned on or before 31.03.2017 at the rate of Rs. 3.46 / unit subject to approval of Commission.

AND WHEREAS, the Power Producer vide letter no. SVL/GUVNL/02/ROJMAL dated 31/3/2017 has requested GUVNL to execute this Agreement at the fixed tariff of Rs. 3.46 / unit for 25 years of life of Project.

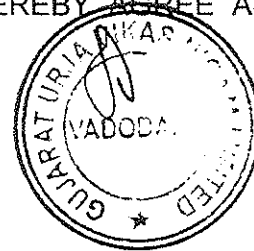
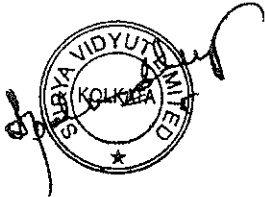
AND WHEREAS, the Power Producer and GUVNL have mutually agreed to execute this Agreement at the fixed agreed tariff of Rs. 3.46 / unit for 25 years of life of Project subject to approval of Commission,



NOW, THEREFORE, in consideration of the matters described above and the covenants in this Agreement, the Power Producer and GUVNL intending to be legally bound, agree as follows:

AND, WHEREAS the Power Producer desires to set-up such Wind Energy based Power Plant of 02 MW capacity at Village Ishapan, Taluka Babra, District Amreli using new Wind Electric Generators to produce the Electric Energy and exercised the option under aforesaid regulations, for sale of entire of electrical energy, so produced, for commercial purposes from such Power Plant to GUVNL.

NOW THEREFORE IN VIEW OF THE FOREGOING PREMISES AND IN CONSIDERATION OF THE MUTUAL COVENANTS AND CONDITIONS HEREINAFTER SET FORTH, GUVNL AND THE POWER PRODUCER, EACH TOGETHER WITH THEIR RESPECTIVE SUCCESSORS AND PERMITTED ASSIGNS, A PARTY AND COLLECTIVELY THE PARTIES, HEREBY AGREE AS FOLLOWS:



## ARTICLE 1

## DEFINITIONS

1.1 For all purposes of this Agreement, the following words and expressions shall have the respective meanings set forth below:

"Agreement" shall mean this Power Purchase Agreement executed hereof, including the schedules hereto, amendments, modifications and supplements made in writing by the Parties from time to time.

"Approvals" means the permits, clearances, licenses and consents as are listed in Schedule 3 hereto and any other statutory approvals.

"Billing Period" means (subject to Clause 6.1 of the Agreement) the calendar month ending with the Metering Date. The first Billing Period shall commence from the Commercial Operation Date and end with the Metering Date corresponding to the month in which the Commercial Operation Date occurs.

"Billing Date" shall be the first Business Day after the Metering Date of each Billing Period.

"Business Day" means a Day other than Sunday or a statutory holiday on which banks remain open for business in Vadodara.

"Commercial Operation Date" with respect to the Project / WTG shall mean the date on which the Wind Turbine Generator is available for commercial operation (certified by GEDA) and such date as specified in a written notice given at least ten days in advance by the Power Producer to GUVNL.

"Commission" means Gujarat Electricity Regulatory Commission.

"Contract Year" shall mean, with respect to the initial Contract Year, the period beginning on the Commercial Operation Date of the Unit and ending at 12.00 midnight on 31st March of that Fiscal Year. Each successive Contract Year shall coincide with the succeeding Fiscal Year, except that the final Contract Year shall end on the date of expiry of the Term or on Termination of this Agreement whichever is earlier.

"GUVNL" means Gujarat Urja Vikas Nigam Limited.

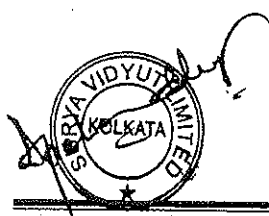
"Discom(s)" means one or more of the following distribution companies:

- (a) Madhya Gujarat Vij Company Limited,
- (b) Dakshin Gujarat Vij Company Limited
- (c) Uttar Gujarat Vij Company Limited, and
- (d) Paschim Gujarat Vij Company Limited

"GETCO" means Gujarat Electricity Transmission Corporation Limited.

"Delivery Point" shall be the point or points at which Electricity is delivered into the Grid System of the GETCO i.e., HT end of the respective Pooling Sub-station.

"Delivered Energy" means the kilowatt hours of Electricity actually fed and measured by the energy meters at the Delivery Point in a Billing Period and certified in the SEA of Gujarat SLDC. The imported energy supplied by the GUVNL / DISCOMs to the Project shall be similarly measured during such Billing Period for which the payment shall be made by the Power Producer to the respective DISCOM at the tariff rate of temporary HT consumer.



**"Due Date of Payment"** in respect of a Tariff Invoice means the date, which is 30 (thirty) days from the date of receipt of such invoices by the designated official of the GUVNL.

**"Electricity"** shall mean the electrical energy in kilowatt-hours.

**"Electricity Laws"** shall mean the Electricity Act, 2003 and the relevant rules, notifications, and amendments issued thereunder and all other Laws in effect from time to time and applicable to the development, financing, construction, ownership, operation or maintenance or regulation of electric generating companies and Utilities in India, the rules, regulations and amendments issued by the Commission from time to time.

**"Emergency"** means a condition or situation of physical damage to GETCO's / DISCOM's electrical system including the Grid System, which threatens the safe and reliable operation of such system or which is likely to result in disruption of safe, adequate and continuous electric supply by GETCO or DISCOM Grid System or could endanger life or property.

**"Financing Documents"** mean the agreements and documents (including asset leasing arrangements) entered/to be entered into between the Power Producer and the Financing Parties relating to the financing of the Project.

**"Financial Closure"** means the signing of the Financing Documents for financing of the Project and fulfillment of all the conditions precedent to the initial availability of funds there under and the receipt of commitments for such equity as required by the Power Producer in order to satisfy the requirements of the lenders, provided however that the Power Producer has immediate access to funds (subject to giving the required drawdown notices) regarded as adequate by the Power Producer and in any case shall be achieved within 3 (three) months from the date of signing of this Agreement.

**"Financing Parties"** means Parties financing the Project, pursuant to Financing Documents.

**"Fiscal Year"** shall mean, with respect to the initial Fiscal Year, the period beginning on the Commercial Operation Date and ending at 12.00 midnight on the following March 31. Each successive Fiscal Year shall begin on April 1 and end on the following March 31, except that the final Fiscal Year shall end on the date of expiry of the Term or on termination of this Agreement, whichever is earlier.

**"Force Majeure Event"** shall have the meaning set forth in Article 8.

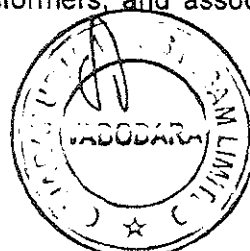
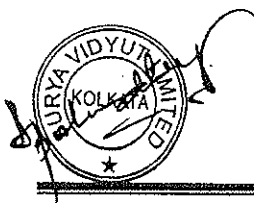
**"GoI"** means the Government of the Republic of India and any agency, legislative body, department, political subdivision, authority or instrumentality thereof.

**"GoG"** means the Government of the State of Gujarat and any agency, legislative body, department, political subdivision, authority or instrumentality thereof.

**"Government Instrumentality"** means the GoI, the GoG and their ministries, inspectorate, departments, agencies, bodies, authorities, legislative bodies.

**"Grid System"** means GETCO's / Discom's power transmission / Distribution system through which Delivered Energy is evacuated and distributed.

**"Interconnection Facilities"** in respect of the Power Producer shall mean all the facilities installed by the Power Producer to enable GUVNL to receive the Delivered Energy from the Project at the Delivery Point, including transformers, and associated



equipment, relay and switching equipment, protective devices and safety equipment and transmission lines from the Project to GETCO's nearest sub-station.

**"Installed Capacity"** means the capacity of the Project at the generating terminal(s) and shall be equal to 02 MW.

**"KV"** means Kilovolts.

**"kWh"** means Kilowatt-hour.

**"Law"** means any valid legislation, statute, rule, regulation, notification, directive or order, issued or promulgated by any Governmental Instrumentality.

**"Metering Date"** for a Billing Period, means the midnight of the last Day of the calendar month.

**"Metering Point"** for purposes of recording of Delivered Energy will be the Delivery Point and shall include two separate sets of electronic trivector meters, main meter installed by the Power Producer and the check meter installed by the GETCO and both sealed by the GETCO in presence of the Power Producer, having facilities to record both export and import of electricity to/from the grid,

**"Monthly Charge"** shall have the meaning set forth in Article 5.

**"Must Run Status"** shall mean that Project shall not be directed by the GUVNL to shut down or back down due to variations in the generation/consumption patterns or any commercial parameters, merit order dispatches or existence/apprehension of any other charges or levies related to dispatch or incidental thereto except Force Majeure Events and emergency.

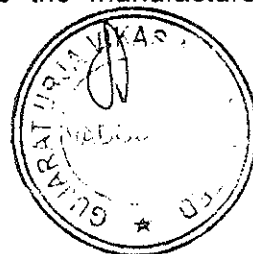
**"MW"** means Megawatts.

**"O & M Default"** shall mean any default on the part of the Power Producer for a continuous period of ninety (90) days to (i) operate and/or (ii) maintain (in accordance with Prudent Utility Practices), the Project at all times.

**"Project"** means a Wind Mill Power Station to be established by the Power Producer at Ishapan, Dist: Amreli the State of Gujarat comprising of 01 numbers of WEG's with an individual installed capacity of 2000 KW and a total installed capacity of 02 MW shall include land, buildings, plant, machinery, ancillary equipment, material, switch-gear, transformers, protection equipment and the like necessary to deliver the Electricity generated by the Project to the GUVNL at the Delivery Point.

**"Project Site"** means any and all parcels of real property, rights-of-way, easements and access roads located at Ishapan, Dist: Amreli Gujarat State, upon which the Project and its related infrastructure will be located, as described in Schedule 1 hereto.

**"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.





"Scheduled COD" or "Scheduled Commercial Operation Date" means 31.03.2017.

"SBI Base Rate" means rate fixed by State Bank of India as on 1st April of respective financial year in accordance with regulations and guidelines of Reserve Bank of India. In absence of such rate, any other arrangement that substitutes such rate as mutually agreed to by the Parties.

"Sending Station" shall mean the 220 KV Sukhpur electric Sending station constructed and maintained by the Power Producer near Babra in District Amreli for the sole purpose of evacuating the Electricity generated by the Project to the Grid System and for facilitating interconnection between the transmission lines emanating from the Project and the Grid System.

"SLDC" means the State Load Dispatch Center as notified by the State Government.

"SEA" means the State Energy Account issued by State Load Dispatch Centre, Gujarat and amendment thereto.

"Tariff" shall have the meaning set forth in Article 5.

"Tariff Invoices" shall have the meaning set forth in Article 6.

"Technical Limits" means the limits and constraints described in Schedule 2, relating to the operations, maintenance and dispatch of the Project.

"Term" means the term of the Agreement as defined in Article 9.1.

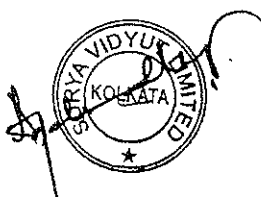
"Unit" means one set of wind turbine-generator and auxiliary equipment and facilities forming part of the Project.

"Voltage of Delivery" means the voltage at which the Electricity generated by the Project is required to be delivered to the GUVNL and shall be 220 KV.

## 1.2 Interpretation :

(a) Unless otherwise stated, all references made in this Agreement to "Articles" and "Schedules" shall refer, respectively, to Articles of, and Schedules to, this Agreement. The Schedules to this Agreement form part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement.

(b) In this Agreement, unless the context otherwise requires (i) the singular shall include plural and vice versa; (ii) words denoting persons shall include partnerships, firms, companies and Discom (iii) the words "include" and "including" are to be construed without limitation and (iv) a reference to any Party includes that Party's successors and permitted assigns.

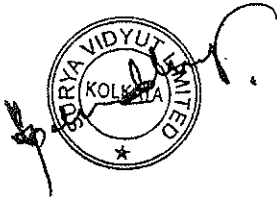


## ARTICLE 2

## LICENCES, PERMITS

- 2.1 The Power Producer, at its sole cost and expense, shall acquire and maintain in effect all clearances, consents, permits, licenses and approvals required from time to time by all regulatory / statutory competent authority(ies) in order to enable it to perform its obligations under the Agreement. GUVNL will render all reasonable assistance to the Power Producer to enable the latter to obtain such clearances without any legal obligation on part of GUVNL.

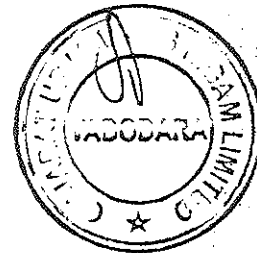
Provided, however, non-rendering or partial rendering of assistance shall not in any way absolve the Power Producer of its obligations to obtain such clearances. Nor shall it mean to confer any right or indicate any intention to waive the need to obtain such clearances.



## ARTICLE 3

## CONSTRUCTION AND OPERATION

- 3.1 The Power Producer shall complete the Construction of the project before the Scheduled date of Completion.
- 3.2 For the purposes of such completion of the Project, the Power Producer and GUVNL shall together endeavour to ensure that all Approvals pursuant to Article 2.1 are cleared within the Scheduled Date of Completion.
- 3.3 For the purposes of such completion of the Project, the Power Producer shall take all necessary steps for obtaining Approvals pursuant to Article 2.1.
- 3.4 If the Power Producer commits a Construction Default or an O & M Default other than due to Force Majeure Events, GUVNL shall give notice of 90 days in writing to the Power Producer, calling upon the Power Producer to remedy such default and if the Power Producer fails to take steps to remedy such default within the aforesaid period the Agreement shall stand terminated.
- 3.5 The Power Producer shall provide to the SLDC and General Manager (Commerce) - GUVNL, information regarding Electricity generated during testing, commissioning, synchronization and startup.
- 3.6 Upon the occurrence of an Emergency in GETCO's / Discom's evacuation system for safe operation of its Grid, GUVNL / GETCO / Discom reserves the right to shut down the line and has no obligation to evacuate the electricity nor to pay any compensation during such period. The Power Producer shall suitably back down their generation. GUVNL / GETCO / Discom will, however, make reasonable endeavors to remedy such emergency, and bring back normalcy at the earliest. GUVNL shall not demand for shut down or back down of the generation due to variations in the generation patterns or any commercial parameters, merit order dispatches or in apprehension of any other charges or levies related to dispatch or incidental thereto.



## ARTICLE 4

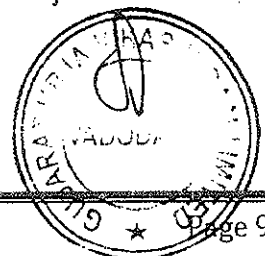
### UNDERTAKINGS

#### 4.1 Obligations of the Power Producer:

- i. The Power Producer shall obtain all statutory approvals, clearances and permits necessary for the Project at his cost in addition to those Approvals as listed in Schedule 3.
- ii. The Power Producer shall construct, operate and maintain the Project during the term of PPA at his cost and risk including the Interconnection Facilities and the Substation.
- iii. The Power Producer shall sell all available capacity from identified Wind Farms to the extent of contracted capacity on first priority basis to GUVNL and not to sell to any third party.
- iv. The Power Producer shall seek approval of GETCO in respect of Interconnection Facilities and the Sending Station.
- v. The Power Producer shall undertake at its own cost construction/upgradation of (a) the Interconnection Facilities, (b) the Transmission Lines and (c) Sending Station as per the specifications and requirements of GETCO, as notified to the Power Producer.
- vi. The Power Producer shall undertake at its own cost maintenance of the Interconnection Facilities and the Sending Station, excluding the transmission line beyond the Sending Station as per the specifications and requirements of GETCO, as notified to the Power Producer, in accordance with Prudent Utility Practices.
- vii. The Power Producer shall operate and maintain the Project in accordance with Prudent Utility Practices.
- viii. The Power Producer shall be responsible for all payments on account of any taxes, cesses, duties or levies imposed by the GoG or its competent statutory authority on the land, equipment, material or works of the Project or on the Electricity generated or consumed by the Project or by itself or on the income or assets owned by it.
- ix. For evacuation facility and maintenance of the transmission, the Power Producer shall enter into separate agreement with GETCO, if applicable.
- x. To procure start up power required for the plant from respective Discom.
- xi. Fulfilling all other obligations undertaken by him under this Agreement.
- xii. The Power Producer cannot inject the power three months earlier to Scheduled Commercial Operation Date from wind turbine generator.

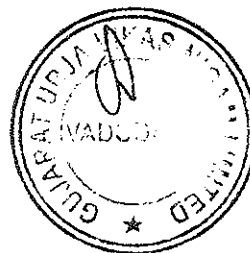
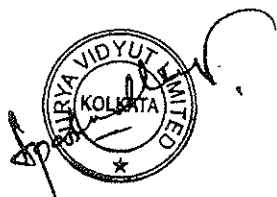
#### 4.2 Obligations of GUVNL:

- i. GUVNL shall allow Power Producer to the extent possible to operate the Project as a base load-generating station.
- ii. GUVNL shall grant Must Run Status to the Project subject however to Emergency conditions.



**4.3 Consequences for delay in Commissioning the Project / Wind Turbine Generator beyond Scheduled Commercial Operation date**

Notwithstanding anything to the contrary herein, this Power Purchase Agreement shall be treated as void and not enforceable, without any further notice, if commissioning of the Power Project is not achieved by 31.03.2017



## ARTICLE 5

## RATES AND CHARGES

- 5.1 Monthly Energy Charges: The GUVNL shall pay for the Delivered Energy as certified in the SEA by SLDC Gujarat, for the Term of this Agreement from the Commercial Operation Date or signing of Power Purchase Agreement whichever is later, to the Power Producer every month. The Tariff payable by GUVNL for energy purchased shall be as per clause 5.2 herein.
- 5.2 GUVNL shall pay a fixed rate of mutually agreed tariff of Rs. 3.46 per kWh (which shall be subject to approval of Commission) for delivered energy as certified in SEA published by Gujarat SLDC during the period of 25 years life of the Project.
- 5.3 For each KVARH drawn from the grid, the Power Producer shall pay at the rate determined by the Commission to GETCO from time to time for each KVARH drawn.
- 5.4 The Intra- State ABT is already implemented in the State, energy certified by SLDC in the SEA shall be considered for monthly energy bill. The other provisions of Intra-State ABT and Open Access Regulations shall be applicable as per GERC's Regulations / Orders and amendments thereto from time to time.



## ARTICLE 6

## BILLING AND PAYMENT

## 6.1 Billing Provision:

The Billing will be on monthly basis. GUVNL will be billed by the Power Producer based on joint meter reading as certified by SEA of Gujarat SLDC following the end of each month for the energy supplied and payment will be due on the thirtieth day following the delivery of the billing invoice.

6.2 **Payment:** GUVNL shall make payment of the amounts due in Indian Rupees within thirty (30) days from the date of receipt of the Tariff Invoice by the designated office of the GUVNL.

## 6.3 Late Payment:

For payment of Monthly bill by GUVNL, if paid after due date of Payment, a late payment surcharge shall be payable by GUVNL to the Power Producer at the rate of seven (7) percent in excess of the SBI base rate per annum, on the amount of outstanding payment, calculated on a week or part thereof basis viz.

$$= \frac{(\text{SBI Base rate} + 7\%)}{52} \text{ per week or part thereof.}$$

## 6.4 Rebate:

For payment of Monthly Bill by GUVNL, if paid before Due Date of Payment, a Rebate shall be deducted by GUVNL at the rate of seven (7) percent in excess of the applicable SBI base rate per annum, on the amount paid before due date, calculated on a week or part thereof basis viz.

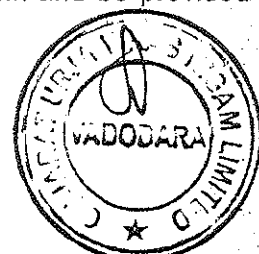
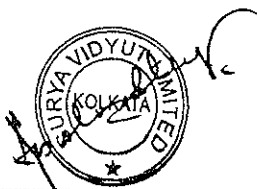
$$= \frac{(\text{SBI Base rate} + 7\%)}{52} \text{ per week or part thereof.}$$

## 6.5 Letter of Credit:

6.5.1 GUVNL shall establish and maintain irrevocable and unconditional revolving Letter of Credit in favour of, and for the sole benefit of, the Power Producer for the contracted capacity of 5 MW and above capacity. All the cost incurred by GUVNL for opening, maintenance and other cost related to establishment of Letter of Credit shall be borne by the Power Producer.

6.5.2 The Letter of Credit shall be established in favour of, and issued to, the Power Producer on the date hereof and made operational thirty (30) days prior to the Commercial Operation Date of the Project and shall be maintained consistent herewith by GUVNL and all times during the Term of the Agreement.

6.5.3 Such Letter of Credit shall be in form and substance acceptable to both the Parties and shall be issued by any Scheduled Bank and be provided on the basis that:



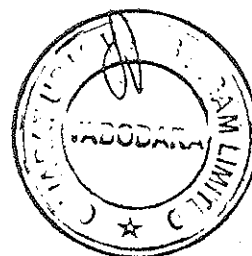
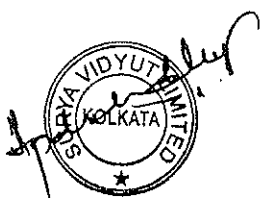
- i. In the event a Tariff Invoice or any other amount due and undisputed amount payable by GUVNL pursuant to the terms of this Agreement is not paid in full by GUVNL as and when due, the Letter of Credit may be called by the Power Producer for payment of undisputed amount.
- ii. The amount of the Letter of Credit shall be equal to one month's projected payments.
- iii. The GUVNL shall replenish the Letter of Credit to bring it to the original amount within 30 days in case of any valid drawdown.

**6.5.4** The Letter of Credit shall be renewed and / or replaced by GUVNL not less than 60 days prior to its expiration.

**6.5.5** Payment under the Letter of Credit: The drawl under the Letter of Credit in respect of a Tariff Invoice shall require:

1. a copy of the metering statement jointly signed by the official representatives of both the Parties, supporting the payments attributable to the Delivered Energy in respect of such Tariff Invoice.
2. a certificate from the Power Producer stating that the amount payable by GUVNL in respect of such Tariff Invoice has not been paid and disputed by GUVNL till the Due Date of Payment of the Tariff Invoice.

**6.6 Disputes:** In the event of a dispute as to the amount of any Tariff Invoice, GUVNL shall notify the Power Producer of the amount in dispute and GUVNL shall pay the Power Producer 100% of the undisputed amount plus 85% of the disputed amount within the due date, provided either party shall have the right to approach the GERC to effect a higher or lesser payment on the disputed amount. The Parties shall discuss within a week from the date on which GUVNL notifies the Power Producer of the amount in dispute and try and settle the dispute amicably. Where any dispute arising out of or in connection with this agreement is not resolved mutually then such dispute shall be submitted to adjudication by the Appropriate Commission under Section 79 or 86 of Electricity Act 2003 and the Appropriate Commission may refer the matter to Arbitration as provided in the said provision read with Section 158 of Electricity Act 2003. For dispute beyond the power conferred upon the Appropriate Commission, such dispute shall be subject to jurisdiction of the High Court of Gujarat. If the dispute is not settled during such discussion then the payment made by GUVNL shall be considered as a payment under protest. Upon resolution of the dispute, in case the Power Producer is subsequently found to have overcharged, then it shall return the overcharged amount with an interest of SBI base rate per annum plus 7% for the period it retained the additional amount. GUVNL / Power Producer shall not have the right to challenge any Tariff Invoice, or to bring any court or administrative action of any kind questioning / modifying a Tariff Invoice after a period of three years from the date of the Tariff Invoice is due and payable.





## ARTICLE 7

## METERING AND COMMUNICATION

## 7.1 Reading and Correction of Meters

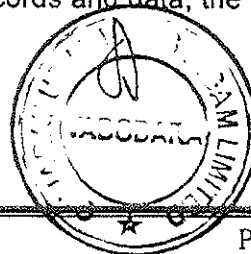
- (i) The GETCO and the Power Producer shall jointly read the Metering System on the first (1st) day of every month at the Delivery Point.
- (ii) In the event that the Main Metering System is not in service as a result of maintenance, repairs or testing, then the Backup Metering System shall be used during the period the Main Metering System is not in service and the provisions above shall apply to the reading of the Backup Metering System.
- (iii) Meter Reading taken jointly at the appointed date and time will be signed by the representatives of the GUVNL, GETCO and the Power Producer. If Power Producer's representative is not present, then GETCO shall provide the Power Producer with a signed copy of the meter reading of the Main Metering System or Backup Metering System as the case may be. Such Meter Readings shall be treated as accurate and final measurement, unless proved otherwise, of the energy supplied to GUVNL by the Power Producer for preceding month for the purpose of payment.

## 7.2 Sealing and Maintenance of Meters.

- i. The Main Metering System and the Backup Metering System shall be sealed in the presence of representatives of Power Producer and GETCO.
- ii. When the Main Metering System and / or Backup Metering System and / or any component thereof is found to be outside the acceptable limits of accuracy or otherwise not functioning properly, it shall be repaired, re-calibrated or replaced by the Power Producer and / or GUVNL / GETCO at Power Producer's cost, as soon as possible.
- iii. Any meter seal(s) shall be broken only by GETCO's representative in the presence of Power Producer's representative whenever the Main Metering System or the Backup Metering System is to be inspected, tested, adjusted, repaired or replaced.
- iv. All the Main and Check Meters shall be calibrated at least once in a period of three years.
- v. In case, both the Main Meter and Check Meter are found to be beyond permissible limit of error, both the meters shall be calibrated immediately and the correction applicable to main meter shall be applied to the energy registered by the Main Meter at the correct energy for the purpose of energy accounting / billing for the actual period during which inaccurate measurements were made, if such period can be determined or, if not readily determinable, shall be the shorter of:
  - a. the period since immediately preceding test of the relevant Main meter, or
  - b. one hundred and eighty (180) days immediately preceding the test at which the relevant Main Meter was determined to be defective or inaccurate.

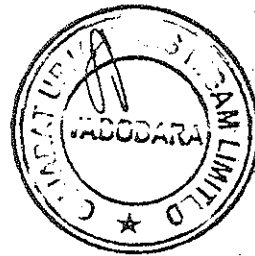
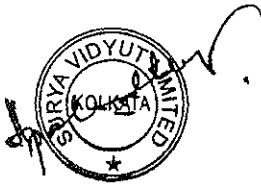
## 7.3 Records

Each Party shall keep complete and accurate records and all other data required by each of them for the purposes of proper administration of this Agreement and the operation of the Power Plant. Among such other records and data, the Power



Producer shall maintain an accurate and up-to-date operating log at the Power Plant with records of:-

- a. Fifteen (15) minutes logs of real and reactive power generation, frequency, transformer tap position, bus voltage(s), Main Meter and Back up Meter Readings and any other data mutually agreed; Till the Intra-State ABT is implemented the details under this clause shall be maintained half hourly basis instead of 15 minutes.
- b. any unusual conditions found during operation / inspections;
- c. chart and printout of event loggers, if any, for system disturbances/ outages.
- d. All the records will be preserved for a period of 36 months.



## ARTICLE 8

## FORCE MAJEURE

## 8.1 Force Majeure Events:

(a) Neither Party shall be responsible or liable for or deemed in breach hereof because of any delay or failure in performance of its obligations hereunder (except for obligations to pay money due prior to occurrence of Force Majeure events under this Agreement) or failure to meet milestone dates due to any event or circumstance (a "Force Majeure Event") beyond the reasonable control of the Party experiencing such delay or failure, including occurrence of any of the following:

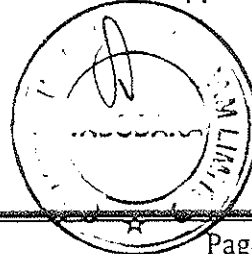
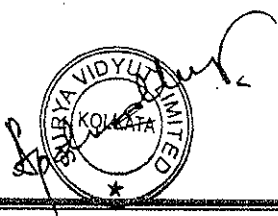
- i. acts of God;
- ii. typhoons, floods, lightning, cyclone, hurricane, drought, famine, epidemic, plague or other natural calamities;
- iii. acts of war (whether declared or undeclared), invasion or civil unrest;
- iv. any requirement, action or omission to act pursuant to any judgment or order of any court or judicial authority in India (provided such requirement, action or omission to act is not due to the breach by the Power Producer or GUVNL of any Law or any of their respective obligations under this Agreement);
- v. inability despite complying with all legal requirements to obtain, renew or maintain required licenses or Legal Approvals;
- vi. earthquakes, explosions, accidents, landslides; fire;
- vii. expropriation and/or compulsory acquisition of the Project in whole or in part by Government Instrumentality;
- viii. chemical or radioactive contamination or ionising radiation; or
- ix. damage to or breakdown of transmission facilities of GETCO / DISCOMs;
- x. exceptionally adverse weather condition which are in excess of the statistical measure of the last hundred (100) years.

## (b) Force Majeure Exclusions:

Force Majeure shall not include the following conditions, except to the extent that they are consequences of an event of Force Majeure:

- 1 Unavailability, Late Delivery or Change in cost of plants and machineries, equipment, materials, spares parts or consumables for the project;
- 2 Delay in performance of any contractor / sub contractor or their agents.
- 3 Non performance resulting from normal wear and tear experience in power generation materials and equipment
- 4 Strike or Labour Disturbances at the facilities of affected parties
- 5 Inefficiency of finances or funds or the agreement becoming onerous to perform, and
- 6 Non performance caused by, or concerned with, the affected party's
  - i. Negligent and intentional acts, errors or omissions;
  - ii. Failure to comply with Indian law or Indian Directive; or
  - iii. Breach of, or default under this agreement or any Project agreement or Government agreement.

(c) The affected party shall give notice to other party of any event of Force Majeure as soon as reasonably practicable, but not later than 7 days after the date on which such Party knew or should reasonably have known of the commencement of Force Majeure event. If any event of Force Majeure results in a breakdown of communication rendering it not reasonable to give notice within the applicable



time limit specified herein, then the party claiming Force Majeure shall give notice as soon as reasonably practicable after reinstatement of communication, but not later than one day after such reinstatement. Such notice shall include full particulars of the Force Majeure event, its effects on the Party claiming relief and the remedial measures proposed. The Affected Party shall give the other party regular (and not less than monthly) reports on the progress of those remedial measures and such other information as the other party may reasonably request about the situation.

- (d) The affected Party shall give notice to the other Party of (1) the cessation of the relevant event of Force Majeure; and (2) the cessation of the effects of such event of Force Majeure on the performance of its rights or obligations under this agreement, as soon as practicable after becoming aware of each of these cessations.
- (e) To the extent not prevented by a Force Majeure event, the affected party shall continue to perform its obligations pursuant to this agreement. The affected party shall use its reasonable efforts to mitigate the effect of any event of Force Majeure as soon as practicable.

**8.2 Available Relief for a Force Majeure Event:** No party shall be in breach of its obligations pursuant to this agreement to the extent that the performance of its obligations was prevented, hindered or delayed due to a Force Majeure event. For avoidance of doubt, neither Party's obligation to make payments of money due and payable prior to occurrence of Force Majeure events under this Agreement shall be suspended or excused due to the occurrence of a Force Majeure Event in respect of such Party.



## ARTICLE 9

## TERM, TERMINATION AND DEFAULT

**9.1 Term of the Agreement:** This Agreement shall become effective upon the execution and delivery thereof by the Parties hereto and unless terminated pursuant to other provisions of the Agreement, shall continue to be in force for such time until the completion of a period of twenty five (25) years from the Commercial Operation Date.

**9.2 Events of Default:**

**9.2.1 Power Producer's Default:** The occurrence of any of the following events at any time during the Term of this Agreement shall constitute an Event of Default by Power Producer:

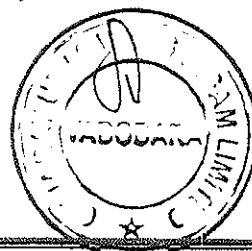
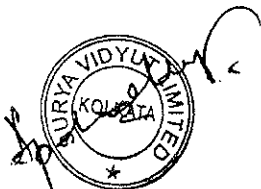
- a. O&M Default on part of Power Producer.
- b. Failure or refusal by Power Producer to perform any of its material obligations under this Agreement.
- c. Power producer fails to make any payment required to be made to Procurer under this agreement within three (3) months after the due date of a valid invoice raised by the GUVNL on the Power Producer.
- d. If the Power Producer (i) assigns or purports to assign its assets or rights in violation of this agreement; or (ii) transfers or novates any of its rights and / or obligations under this agreement, in violation of this agreement.
- e. If the Power producer becomes voluntarily or involuntarily the subject of proceeding under any bankruptcy or insolvency laws or goes into liquidation or dissolution or has a receiver appointed over it or liquidator is appointed, pursuant to Law, except where such dissolution of the Power producer 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 creditworthiness similar to the Power Producer and expressly assumes all obligations under this agreement and is in a position to perform them; or
- f. The Power Producer repudiates this agreement.

**9.2.2 GUVNL's Default:** The occurrence of any of the following at any time during the Term of this Agreement shall constitute an Event of Default by GUVNL:

- a. Failure or refusal by GUVNL to pay any portion of undisputed monthly bill for a period of 90 days after due date.
- b. GUVNL repudiates this agreement.
- c. If GUVNL becomes voluntarily or involuntarily the subject of proceeding under any bankruptcy or insolvency laws or goes into liquidation or dissolution or has a receiver appointed over it or liquidator is appointed, pursuant to Law, except where such dissolution of GUVNL 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 creditworthiness similar to GUVNL and expressly assumes all obligations under this agreement and is in a position to perform them; or

**9.3 Termination:**

**9.3.1 Termination for Power Producer's Default:** Upon the occurrence of an event of default as set out in sub-clause 9.2.1 above, GUVNL may deliver a Default Notice to the Power Producer in writing which shall specify in reasonable detail



the Event of Default giving rise to the default notice, and calling upon the Power Producer to remedy the same.

At the expiry of 30 (thirty) days from the delivery of this default notice and unless the Parties have agreed otherwise, or the Event of Default giving rise to the default notice has been remedied, GUVNL may deliver a Termination Notice to the Power Producer. GUVNL may terminate this Agreement by delivering such a Termination Notice to the Power Producer and intimate the same to the Commission. Upon delivery of the Termination Notice this Agreement shall stand terminated and GUVNL shall stand discharged of all its obligations. The Power Producer shall have liability to make payment within 30 days from the date of termination notice toward compensation to GUVNL equivalent to three years billing on normative PLF as considered by GERC while determining the tariff for wind farms or the Power Producers shall pay as compensation to GUVNL an amount equivalent to transmission charges of GETCO and wheeling charges of highest of any one of the DISCOMs ( i.e. DGVCL, MGVL, UGVCL, PGVCL ) applicable in the relevant year for the contracted capacity and cross subsidy surcharge which is highest of any one of the DISCOMs ( i.e. DGVCL, MGVL, PGVCL, UGVCL ) applicable in the relevant year on the quantum of power at normative PLF as considered by GERC while determining the tariff for Wind Farms.

The Bills towards compensation of transmission charges, wheeling charges and cross subsidy surcharge shall be paid on monthly basis and the provisions of Billing and Payment will apply Mutatis Mutandis in this case also. However, all payment obligations as per the Article 6 prior to the date of termination of the Agreement shall be met by the Parties.

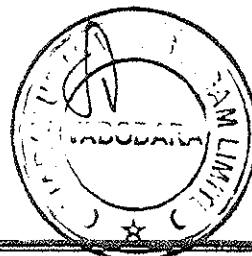
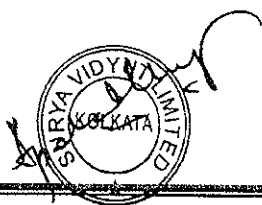
Where a Default Notice has been issued with respect to an Event of Default, which requires the co-operation of both GUVNL and the Power Producer to remedy, GUVNL shall render all reasonable co-operation to enable the Event of Default to be remedied without any legal obligations.

In case of default by the power producer, GUVNL will select the any of the option mentioned above for compensation towards termination of the agreement and inform to power producer with default notice.

**9.3.2 Termination for GUVNL's Default:** Upon the occurrence of an Event of Default as set out in sub-clause 9.2.2 above, the Power Producer may deliver a Default Notice to GUVNL in writing which shall specify in reasonable detail the Event of Default giving rise to the Default Notice, and calling upon GUVNL to remedy the same.

At the expiry of 30 (thirty) days from the delivery of the Default Notice and unless the Parties have agreed otherwise, or the Event of Default giving rise to the Default Notice has been remedied, the Power Producer may serve a "Suspension Notice" to GUVNL for a duration not exceeding one year ("Suspension Period").

During the "Suspension Period" mentioned herein above, GUVNL shall allow the Power Producer to sell power from the project, to any HT consumers of the State, in the open market either by finding the said consumers on its own or through any Central / State power trading utilities. In case of wheeling of power to such third parties, the transmission charges, transmission losses, wheeling charges and losses, SLDC charges and cross subsidy surcharge etc. shall be applicable as per GERC's regulation remain force from time to time and paid

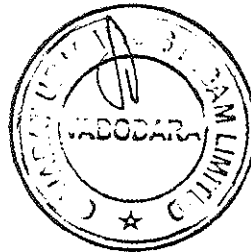


directly to respective agencies by third party. No banking facility shall be allowed to Power Producer and third parties.

On expiry of the Suspension Period, GUVNL will be entitled to cure its default and buy power from the Power Producer. In the event GUVNL fails to cure the default, the Power Producer may terminate this Agreement by delivering a Termination Notice to GUVNL / its successor entity and in such an event GUVNL shall have liability to make payment within 30 days from the date of termination notice toward compensation to Power Producer equivalent to three years billing on normative PLF as considered by GERC while determining the tariff for wind farms or in such an event, power producer shall be allowed to sell the power from the project to any of the consumers in the State in open market. In case of wheeling of power to such third party, the transmission charges of GETCO and wheeling charges of any of the four subsidiary companies of GUVNL (i.e. DGVCL, MGVCL, PGVCL, UGVCL) which are in excess of 5% of the power purchase rate shall be reimbursed by GUVNL. Moreover, subsidiary companies of GUVNL (i.e. DGVCL, MGVCL, PGVCL, UGVCL) shall also waive their cross subsidy surcharge applicable during the relevant period on the sale of power by power producer to any consumer of these Distribution companies.

The Bills towards reimbursement of transmission and wheeling charges shall be paid on monthly basis and the provisions of Billing and Payment will apply in this case also.

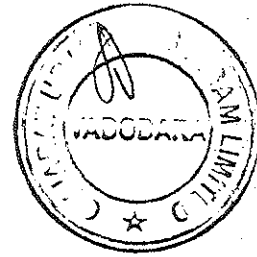
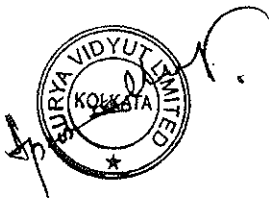
In case of default by GUVNL, the Power Producer will select any of the option mentioned above for compensation towards termination of the agreement and inform to GUVNL with default notice.



## ARTICLE 10

## DISPUTE RESOLUTION

- 10.1 All disputes or differences between the Parties arising out of or in connection with this Agreement shall be first tried to be settled through mutual negotiation.
- 10.2 The Parties hereto agree to attempt to resolve all disputes arising hereunder promptly, equitably and in good faith.
- 10.3 Each Party shall designate in writing and communicate to the other Party its own representative who shall be authorized to resolve any dispute arising under this Agreement in an equitable manner and, unless otherwise expressly provided herein, to exercise the authority of the Parties hereto to make decisions by mutual agreement.
- 10.4 In the event that such differences or disputes between the Parties are not settled through mutual negotiations within sixty (60) days, after such dispute arises, then it shall be got adjudicated by the Commission in accordance with Law.

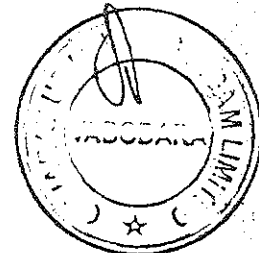
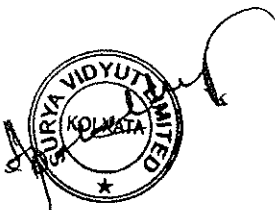




## ARTICLE 11

## INDEMNITY

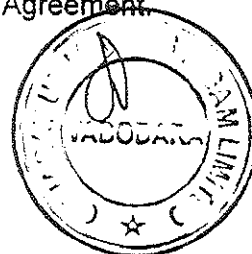
- 11.1 Power Producer's Indemnity: The Power Producer agrees to defend, indemnify and hold harmless GUVNL, its officers, directors, agents, employees and affiliates (and their respective officers, directors, agents and employees) from and against any and all claims, liabilities, actions, demands, judgments, losses, costs, expenses, suits, actions and damages arising by reason of bodily injury, death or damage to property sustained by third parties that are caused by an act of negligence or the willful misconduct of the Power Producer, or by an officer, director, sub-contractor, agent or employee of the Power Producer except to the extent of such injury, death or damage as is attributable to the willful misconduct or negligence of, or breach of this Agreement by, GUVNL, or by an officer, director, sub-contractor, agent or employee of the GUVNL.
- 11.2 GUVNL's Indemnity: GUVNL agrees to defend, indemnify and hold harmless the Power Producer, its officers, directors, agents, employees and affiliates (and their respective officers, directors, agents and employees) from and against any and all claims, liabilities, actions, demands, judgments, losses, costs, expenses, suits, actions and damages arising by reason of bodily injury, death or damage to property sustained by third parties that are caused by an act of negligence or the willful misconduct of GUVNL, or by an officer, director, sub-contractor, agent or employee of GUVNL except to the extent of such injury, death or damage as is attributable to the willful misconduct or negligence of, or breach of this Agreement by, the Power Producer, or by an officer, director, sub-contractor, agent or employee of the Power Producer.



## ARTICLE 12

## MISCELLANEOUS PROVISIONS

- 12.1 Governing Law:** This Agreement shall be interpreted, construed and governed by the Laws of India.
- 12.2 Insurance:** The Power Producer shall obtain and maintain necessary policies of insurance during the Term of this Agreement consistent with Prudent Utility Practice.
- 12.3 Books and Records:** The Power Producer shall maintain books of account relating to the Project in accordance with generally accepted Indian accounting principles.
- 12.4 Waivers:** Any failure on the part of a Party to exercise, and any delay in exercising, exceeding three years, any right hereunder shall operate as a waiver thereof. No waiver by a Party of any right hereunder with respect to any matter or default arising in connection with this Agreement shall be considered a waiver with respect to any subsequent matter or default.
- 12.5 Limitation Remedies and Damages:** Neither Party shall be liable to the other for any consequential, indirect or special damages to persons or property whether arising in tort, contract or otherwise, by reason of this Agreement or any services performed or undertaken to be performed hereunder.
- 12.6 Notices:** Any notice, communication, demand, or request required or authorized by this Agreement shall be in writing and shall be deemed properly given upon date of receipt if delivered by hand or sent by courier, if mailed by registered or certified mail at the time of posting, if sent by fax when dispatched (provided if the sender's transmission report shows the entire fax to have been received by the recipient and only if the transmission was received in legible form), to :
- In case of the Power Producer: M/S SURYA VIDYUT LIMITED  
 Name : Aditya Palchoudhury  
 Designation : G.M - Business Development  
 Address : CESS HOUSE, CHOWRINGEE Square, KOLKATA - 700001  
 Ph. Nos.: \_\_\_\_\_ Fax No.: \_\_\_\_\_  
033-22124294 033-22360955  
 In case of Gujarat Urja Vikas Nigam Limited:  
 Designation : General Manager (Commerce)  
 Address : Gujarat Urja Vikas Nigam Limited - Commerce Dept, 2nd floor, Sardar Patel Vidyut Bhavan, Race Course, Vadodara - 390 007  
 Ph. Nos.: 0265- 2340504 Fax No.: 0265- 2344543
- 12.7 Severability:** Any provision of this Agreement, which is prohibited or unenforceable in any jurisdiction, shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof and without affecting the validity, enforceability or legality of such provision in any other jurisdiction.
- 12.8 Amendments:** This Agreement shall not be amended, changed, altered, or modified except by a written instrument duly executed by an authorized representative of both Parties. However, GUVNL may consider any amendment or change that the Lenders may require to be made to this Agreement.



- 12.9 Assignment:** Neither Party shall assign this Agreement or any portion hereof without the prior written consent of the other Party, provided further that any assignee shall expressly assume the assignor's obligations thereafter arising under this Agreement pursuant to documentation satisfactory to such other Party. Provided however, no approval is required from GUVNL for the assignment by the Power Producer of its rights herein to the Financing Parties and their successors and assigns in connection with any financing or refinancing related to the construction, operation and maintenance of the Project.

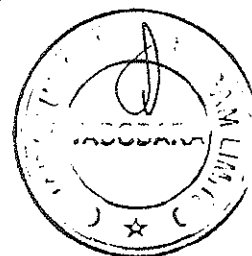
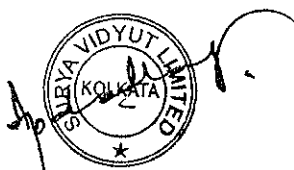
In furtherance of the foregoing, GUVNL acknowledges that the Financing Documents may provide that upon an event of default by the Power Producer under the Financing Documents, the Financing Parties may cause the Power Producer to assign to a third party the interests, rights and obligations of the Power Producer thereafter arising under this Agreement. GUVNL further acknowledges that the Financing Parties, may, in addition to the exercise of their rights as set forth in this Section, cause the Power Producer to sell or lease the Project and cause any new lessee or purchaser of the Project to assume all of the interests, rights and obligations of the Power Producer thereafter arising under this Agreement.

- 12.10 Entire Agreement, Appendices:** This Agreement constitutes the entire agreement between GUVNL and the Power Producer, concerning the subject matter hereof. All previous documents, undertakings, and agreements, whether oral, written, or otherwise, between the Parties concerning the subject matter hereof are hereby cancelled and shall be of no further force or effect and shall not affect or modify any of the terms or obligations set forth in this Agreement, except as the same may be made part of this Agreement in accordance with its terms, including the terms of any of the appendices, attachments or exhibits. The appendices, attachments and exhibits are hereby made an integral part of this Agreement and shall be fully binding upon the Parties.

In the event of any inconsistency between the text of the Articles of this Agreement and the appendices, attachments or exhibits hereto or in the event of any inconsistency between the provisions and particulars of one appendix, attachment or exhibit and those of any other appendix, attachment or exhibit GUVNL and the Power Producer shall consult to resolve the inconsistency.

- 12.11 Further Acts and Assurances:** Each of the Parties after convincing itself agrees to execute and deliver all such further agreements, documents and instruments, and to do and perform all such further acts and things, as shall be necessary or convenient to carry out the provisions of this Agreement and to consummate the transactions contemplated hereby.

- 12.12 Sharing of benefits from Clean Development Mechanism (CDM):** CDM benefits shall be shared on net proceeds, starting from 100% to power producer in the first year after commissioning, and thereafter reducing by 10% every year till the sharing becomes equal (50:50) between the Power Producer and the Power Procurer, in the sixth year. Thereafter, the sharing of CDM benefits shall remain equal till the time that benefit accrues.



IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their fully authorized officers, and copies delivered to each Party, as of the day and year first above stated.

FOR AND ON BEHALF OF



Authorized Signatory  
(ADRIIT PALCHOUDEHARY)  
GM Business Development

WITNESSES

1. Bhaskar  
(ABHISHEK SRIVASTAVA)  
INOX WIND LIMITED  
ABS TOWER O.P. Road  
Vadodara.

2. Anish Bhattacherjee  
(ANISH BHAATTACHARJEE)

FOR AND ON BEHALF OF  
GUJARAT URJA VIKAS NIGAM  
LIMITED

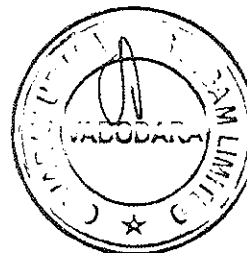
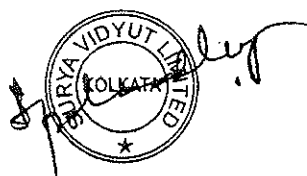
(Sailaja Vachhrajani)  
General Manager (IPP)  
GUVNL, HO. BARODA.

GUJARAT URJA VIKAS NIGAM LTD.

WITNESSES

1. Girija Dave  
(Girija Dave)  
Account Officer  
Gujarat Urja Vikas Nigam Limited  
Vadodara.

2. Parthik Jashi  
(Parthik Jashi)  
AO, GUVNL



## ANNEXURE

## SCHEDULE 1

## PARAMETERS AND TECHNICAL LIMITS OF SUPPLY

## 1. Electrical characteristics

- Three phase alternating current
- Nominal declared frequency : 50.0 Hz
- Final Voltage at Delivery Point: 220/132/66 kV  
(Pooling stations)

Short circuit rating:

(As a part of the detailed design process, the Power Producer shall calculate the short circuit rating (minimum and maximum), and supply this information to the GUVNL).

Note: The tolerances & Electrical characteristics variations will be as per GUVNL / GETCO performance Standards. The electrical clearances will be as per relevant standard.

Basic insulation level of	220 KV	132kV	66 KV
(i) Transformer(s)	950 KVp	550 kVp	140 kVp
(ii) Bushing(s)	1050 KVp	650 kVp	350 kVp
(iii) Equipment	1050 KVp	650 kVp	350 kVp

## 2. Quality of Service

The Power Producer shall be responsible for the delivery of energy conforming GUVNL Performance Standards for Transmission and Bulk Supply as approved by GERC.

The maximum current and voltage waveform distortion shall be in accordance with table III of G.5/3, Engineering Recommendations, System Design and Development Committee, Limits for Harmonics in the United Kingdom Electricity Supply System.

Phase voltage unbalance will be limited to one percent (1%).

## 3. Power Factor

The Generator shall maintain the Power Factor as per the prevailing GERC regulations and as may be stipulated / specified by GETCO from time to time. The Power Producer shall provide suitable protection devices, so that the Electric Generators could be isolated automatically when grid supply fails.

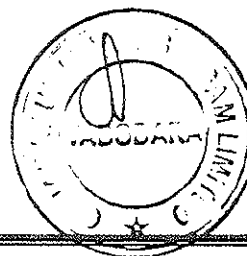
Connectivity criteria like short circuit level (for switchgear), neutral Grounding, fault clearance time, current unbalance (including negative and zero sequence currents), limit of harmonics etc. shall be as per Grid Code.

## SCHEDULE 2

## TECHNICAL LIMITS

1. The nominal steady state electrical characteristics of the system are as follows:

- a) three phase alternating current at 50 Hertz plus or minus 0.5 Hertz



b) nominal voltage of 220 KV with +10% to - 12.5% variation.

2. The Project shall be designed and capable of being synchronized and operated within a frequency range of 47.5 to 51.5 Hertz and voltage of 242 KV and 143 KV
3. Operation of the Project outside the nominal voltage and frequency specified above will result in reduction of power output consistent with generator capability curves.

### SCHEDULE 3

#### APPROVALS

1. Consent from the GETCO for the evacuation scheme for evacuation of the power generated by the windmill power projects.
2. Approval of the Electrical Inspectorate, Government of Gujarat for commissioning of the transmission line and the wind energy converters installed at the Project Site.
3. Certificate of Commissioning of the Wind Farm Project issued by GEDA.
4. Permission from all other statutory and non-statutory bodies required for the Project.
5. Clearance from the Airport Authority of India, if required.
6. Clearance from the Department of Forest, Ecology and Environment, if required.

### SCHEDULE 4

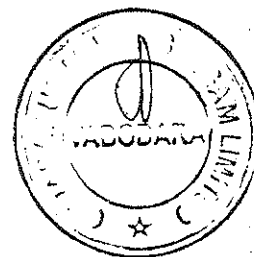
#### TESTING PROCEDURES

Power Producer and GUVNL shall evolve suitable testing procedures three (3) months before the Commercial Operation Date of the Project considering relevant standards.

### SCHEDULE 5

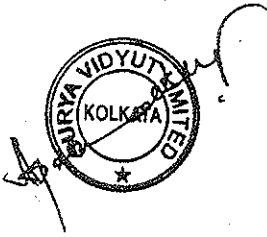
#### SPECIFICATION OF ELECTRICAL ENERGY DELIVERY

1. The generation voltage from the windmill power project of M/s. SURYA VIDYUT LIMITED is 0.69 KV. It uses unit connection of generator, generator transformer and unit transformer.
2. The generated power at 0.69 KV will be stepped up to 33 KV at the Project Site and further stepped up to 220 KV at the Sending Station for the purpose of interconnection with the Grid System at the Sending Station. 220 KV/ 33 KV GT's will also be used to draw start up power from the grid.



Annexure

Location No	Village	Taluka	District	GEDA WTG ID NO
RJ9-T-007	Ishapar	Babra	Amreli	IWISL/2000/16-17/4586



ખાનગી

ગુજરાત સરકાર

ક્રમાંક: પ્ર૨૫/૧૧/૨૦૧૭/૪૮૩/૫

ઉર્જા અને પેટ્રોકેમિકલ્સ વિભાગ,

સચિવાલય, ગાંધીનગર.

તા. ૨૮/૦૩/૨૦૧૭

FAX. 581

પ્રતિ,  
મેનેજીંગ ડીરેક્ટરશ્રી,  
ગુજરાત ઉર્જા વિકાસ નિગમ લિ.,  
સરદાર પટેલ વિદ્યુત ભવન,  
રેસકોર્સ, વડોદરા

વિષય: Signing of PPA for Purchase of Power from Wind Power Projects

ઉપર્યુક્ત વિષય પરત્વે આપના તા.૨૭/૦૩/૨૦૧૭ના પત્ર ક્રમાંક:GUVNL/COM/GM(IPP)/RE/295 સંદર્ભે આપની દરખાસ્તને નીચે મુજબ સંમતિ આપવામાં આવે છે.

(૧) પવન ઉર્જા માટે જે ટેરીફ SECI દ્વારા કરવામાં આવેલ બીડમાં આવેલ છે તે ટેરીફથી એટલે કે રૂ.૩.૪૬ પ્રતિ યુનિટના દરે GUVNL PPA Sign કરે, જે માનનીય GERCOની મંજૂરીને આધીન રહેશે અને તે બાબતનો ઉલ્લેખ સ્પષ્ટપણે આવા દરેક PPAમાં કરવાનો રહેશે.

(૨) જે પ્રોજેક્ટો તા.૩૧.૦૩.૨૦૧૭ ના રોજ કે ૩૧.૦૩.૨૦૧૭ના પહેલાં કમીશનિંગ થનાર છે તેવા જ પ્રોજેક્ટ સાથે GUVNL PPA Sign કરે.

(૩) GUVNL તેની ચાલુ વર્ષ તેમજ આવતા વર્ષ એટલે કે ૨૦૧૭-૧૮ની RPC ની જરૂરિયાત પુરતા જ PPA Sign કરે.

આપની વિશ્વાસુ



( શીલ્પા દેસાઈ )

અધિક સચિવ

ઉર્જા અને પેટ્રોકેમિકલ્સ વિભાગ



## GUJARAT ELECTRICITY REGULATORY COMMISSION

### GANDHINAGAR

#### Order No. 2 of 2016

**In the matter of: Determination of Tariff for Procurement of Power by the  
Distribution Licensees and Others from Wind Power Projects.**

In exercise of the powers conferred under Sections 3(1), 61(h), 62(1)(a) and 86(1)(e) of the Electricity Act, 2003, guidelines of the National Electricity Policy, 2005, Tariff Policy, 2016 and all other powers enabling it in this behalf, the Gujarat Electricity Regulatory Commission (hereinafter referred to as "the Commission") determines the tariff for procurement of power by the Distribution Licensees and Others in Gujarat from wind power projects.

This order is the fourth order on wind energy and is the culmination of an elaborate consultative process after considering the suggestions received from various stakeholders.

#### **1. BACKGROUND**

##### **1.1 Potential for Wind Power**

National Institute of Wind Energy (NIWE), formerly known as Centre for Wind Energy Technology (C-WET), under the Ministry of New and Renewable Energy (MNRE), Government of India, in association with Riso DTU National Laboratory for Sustainable Energy (NLSE), Denmark, developed the Indian Wind Atlas which has been published in April 2010. In year 2015, NIWE revisited this study under the guidance and directives of MNRE, with realistic and practical assumptions and advanced modeling techniques and estimated wind power potential in India at 100m hub height as 302 GW. As per this study the installable wind power potential of Gujarat state at 100m hub height is estimated as 84,431 MW. The study was performed with actual land availability estimation using NRSC 56m resolution land use land cover (LULC) data (AWiFS) 1:250K scale and with consideration of 6MW/sq.km. While developing the Wind Atlas, zones with Capacity Utilization Factor of 20% and more have been considered for wind potential estimation.

##### **1.2 Government of Gujarat Wind Power Policy - 2016**

Government of Gujarat has notified the 'Wind Power Policy – 2016' on 2<sup>nd</sup> August 2016. Salient features of the Policy are given below:

- This policy will remain in operation up to 30<sup>th</sup> June 2021 from date of issue.
- WTG installed capacity for captive use shall be allowed up to 100% of contracted demand /sanctioned load of consumer in case of MSME unit(s) and 50% of contracted demand/sanctioned load in case of other consumers. Above limit is not applicable to the captive consumer (MSME/Non MSME) who establish single WTG up to 2.7MW.
- The evacuation facility from the wind farm sub-station to GETCO sub-station shall be erected by developer at their own cost. The voltage level for evacuation of wind power shall be 66 kV and above in accordance with the GERC supply code.
- The electricity generated from the WEGs, shall be metered and readings taken jointly by Wind Power Project Developer with GEDA and GETCO at the metering point on a monthly basis. For the purpose of accounting, each WTG shall have to provide ABT compliant meters.
- Obligated entities may purchase wind power to fulfil their RPO at the tariff determined by GERC or rate discovered through competitive bidding.
- Concessional wheeling charges and wheeling losses in case the energy is wheeled at below 66 kV voltage level for captive wind power projects.
- In case of third-party sale, normal open access charges and losses, 50% of CSS and additional surcharge as applicable to normal open access consumers shall be applicable.
- Electricity generated from WEGs for self-consumption / sale to third-party within the state shall be exempted from payment of Electricity Duty.
- Energy Accounting procedures with regard to Open Access transaction in three possible scenarios has been provided (i) consumer does not take renewable attribute of wind energy for meeting its RPO (ii) Consumer takes renewable attribute of wind energy for meeting its RPO (iii) Generator is registered in REC Mechanism. One month's banking facility is provided to the projects falling in (i) Case 1 with no such provision for the projects falling in (ii) Case 2 (a) and (iii) Case 2 (b).
- The project developers are required to furnish the Bank Guarantee of Rs. 5 Lakh/MW to GETCO in order to ensure the timely completion of wind energy project and to ensure the timely utilisation of infrastructure created by GETCO. The bank guarantee will be encashed by GETCO in case the wind farm sub-station and transmission line is not commissioned within the specified time line.

### 1.3 GERC Multi Year Tariff Regulations, 2016

The Commission had notified 'Multi Year Tariff Regulations, 2016' on 29 March, 2016, which is applicable for determination of tariff for all existing and future Generating Companies, Transmission Licensees, Distribution Licensees, and their successors, if any. It is through the framework of these Regulations, the Commission determines tariffs for various cases including supply of electricity by a Generating Company to a Distribution licensee, intra-state transmission of electricity, intra-state wheeling of electricity, retail supply of electricity, etc. The objectives of MYT Regulations are:

- Provide regulatory certainty to the utilities, investors and consumers.
- Address the risk sharing mechanism between utilities and consumers based on controllable and uncontrollable factors.
- Ensure financial viability of the sector to attract investment, ensure growth and safeguard the interest of the consumers.
- Review operational norms for generation, transmission, distribution and supply.
- Promote operational efficiency and through its improvement in the long term, rationalize tariffs.

The Commission within the framework of these regulations and the broad principles outlined in the Tariff Policy of Central Government has determined the tariff for procurement of power by distribution licensees and others from wind energy projects in the state.

### 1.4 Renewable Purchase Obligation (RPO) in Gujarat

The Commission has amended the Principal GERC (Procurement of Energy from Renewable Sources) Regulations, 2010 on 4 March 2014 as GERC (Procurement of Energy from Renewable Sources) (First Amendment) Regulations, 2014 (Notification No. 2 of 2014) and specified the RE technology specific RPO targets for FY 2013-14 to FY 2016-17. The Regulations specify the RPO target of 7.75% out of 10% for the obligated entities to be met from procurement of energy generated from wind energy projects during FY 2016-17.

The Regulations recognise the certificates issued within the scope of Central Electricity Regulatory Commission's (CERC) Notification No. L-1/12/2010-CERC dated 14 January 2010 as the valid instruments for discharge of the mandatory obligations set out in these Regulations for

the obligated entities to purchase electricity from renewable energy sources termed as Renewable Energy Certificates (REC).

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

### **1.5 GERC Wind Tariff Order 2012**

Gujarat Electricity Regulatory Commission (GERC), in its Order No. 2 of 2012 dated 08 August, 2012 determined the tariff for procurement of power by the Distribution Licensees and others from wind energy projects for the state of Gujarat. After due public consultation and regulatory process, GERC had offered single part levelized tariff of Rs 4.23 per kWh for procurement of wind power by the distribution licensees in the state. This tariff order was made applicable for the wind energy projects commissioned on or after 11th August 2012. The control period of this tariff order expired on 31 March 2016. Along with the rate for sale of electricity to Distribution licensees, the Commission in this order had addressed other commercial issues associated with wind power transaction for third-party sale and captive use. However, in review of the Commission's Order No.2 of 2012, in Petition No.1243/2012 and Petition No.1249/2012, Commission had re-determined the tariff as Rs 4.15/kWh, which was made applicable for the projects commissioned during the control period from 11.8.2012 to 31.3.2016. The Commission through an order against suo-moto petition No. 1564 of 2016, dated 23.05.2016, decided that the tariff and other commercial terms as determined by the Commission in Order No. 2 of 2012 dated 8.08.2012 read with Order dated 7.01.2013 in Petition No. 1243 of 2012 and 1249 of 2012 shall be applicable to all wind power projects commissioned beyond 31.03.2016 till the new tariff order on this subject is issued by the Commission.

### **1.6 GERC Discussion Paper on Wind Tariff Determination**

The Commission prepared a discussion paper on "Determination of Tariff for Procurement of Power by Distribution Licensees and others from Wind Power Projects for the state of Gujarat" for the new control period starting from the date of issue of the wind tariff order. The discussion paper was placed on the website of the Commission from 7th May 2016 to 20<sup>th</sup> June 2016 for inviting comments and suggestions from the stakeholders. The list of stakeholders who have filed their written objections and suggestions is provided in Annexure-I.

### **1.7 Public Hearing**

A public hearing was held on 20<sup>th</sup> June 2016 at the office of the Commission to hear the stakeholder's views/suggestions/objections on the discussion paper. The list of those who participated in the hearing and made oral submission during the public hearing is provided in Annexure-II.

## **2. DETERMINATION OF TARIFF FOR PROCUREMENT OF POWER FROM WIND POWER PROJECTS**

### **2.1 Tariff Determination Methodology**

The Commission has determined the wind power tariff based on the broad principles contained in the (i) GERC (Multi Year Tariff) Regulations, 2016, (ii) GERC (Procurement of Energy from Renewable Sources) Regulations, 2010 and (iii) CERC (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2012.

### **2.2 Tariff Determination Approach**

The Tariff Policy dated 28 January 2016, notified by the Central Government in pursuance of Section 3 of the Electricity Act, 2003 stipulates that the appropriate Commission may determine tariff for procurement of power by distribution licensees from non-conventional sources of energy under *Section 62 of the Electricity Act, 2003*, till issuance of notification of procurement of power from renewable energy sources through competitive bidding by Central Government. The relevant extract of para 6.4 of the Tariff Policy is given below:

*".....(2) States shall 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."*

The Commission in the discussion paper proposed 'cost-plus' methodology for determination of Tariff as adopted in previous tariff orders issued by the Commission during 2009 and 2012. It was further proposed that the distribution licensees may carry out the competitive bidding for procurement of electricity from wind power projects in the State. In case such tariff is determined through a transparent process of competitive bidding under Section 63 of the Act, the licensees may approach the Commission for adoption of tariff discovered through bidding. In such case, the distribution licensees are free to procure electricity from wind power projects at a tariff discovered under competitive bidding provided that the tariff determined by the Commission in this order shall act as a ceiling tariff. The proposal was initiated by visualizing the fact that the tariff of the solar based generation has substantially come down as a result of adoption of competitive bidding process for procurement of solar based generation in the country.

#### ***Suggestions of the Objectors***

Some of the objectors suggested that in absence of bidding guidelines duly notified by the Ministry of Power, GoI, distribution licensees should not be allowed to procure wind power under Section 63 of the Electricity Act 2003 until the requisite guidelines are in place. Some of the objectors requested that wind and solar projects are not comparable with regard to initiating competitive bidding as in case of solar the radiation pattern is more or less similar and infrastructure facilities are usually provided by the government. In such situation, introduction of competitive bidding will hit the sustainability of wind power development business in the long run. The stakeholders requested that until a framework for competitive bidding is not in place, the distribution licensees should not be allowed to procure wind power through bidding process.

#### ***Commission's Decision***

The Commission has observed that, as per the provisions of the Tariff Policy, procurement from renewable energy projects by distribution licensees is recommended through competitive bidding to keep the tariff low. However, such procurement has to be done through competitive bidding from the date of such notification by the Central Government.

In view of above, the Commission decides that the distribution licensees may procure electricity from the wind power projects at the tariff determined by the Commission under Section 62 of the Act under this order or may carry out competitive bidding for procurement of electricity from wind power projects through transparent process of bidding under Section 63 of the Act. The distribution licensees may approach the Commission for adoption of the tariff discovered through competitive bidding process. In such case, the tariff determined by the Commission in this order will act as a ceiling tariff.

### 2.3 Preferential Tariff

Clause 6.4(1) of the Tariff Policy, 2016 provides that the State Electricity Regulatory Commissions shall fix minimum percentage of power purchase from non-conventional energy sources, taking into account availability of such resources in the region and its impact on retail tariff. Clause 6.4(2) of Tariff Policy provides that states shall endeavor to procure power from renewable energy sources through competitive bidding from the date of notification to this effect from the Central Government. However, till such notification any such procurement of power from renewable energy sources 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. Keeping in view provisions of the Tariff Policy, and larger objectives with reference to climate change and global warming, the Commission has determined the tariff on cost-plus basis for procurement of wind power by the Distribution Licensees and others.

With regard to the structure and design of the tariff, following two approaches are possible:

#### i) Single-Part Tariff Vs Two-Part Tariff

Two-part tariff is generally adopted when the variable component is significant. In the case of wind energy generation, wind being the motive force which rotates the turbine and produces energy, there is no fuel requirement and hence the variable generation cost is nil. Therefore, the Commission has adopted single-part tariff for wind energy generation.

#### ii) Project Specific Tariff Vs Generic Tariff

A generic tariff mechanism would provide incentives to the investors for use of most efficient equipment to maximize returns and for selecting the most efficient site, while a project-specific tariff would provide each investor, irrespective of the machine type and the site selected, the stipulated return on equity and it would shield the investor from the uncertainties involved in capacity utilization due to machine choice and site location.

Considering the small capacities and diverse ownership of the wind power projects, the Commission decides to determine the generic wind power tariff, rather than going for a project specific tariff on case-to-case basis.

### Tariff Design

The generic tariff in this order is determined on levlized basis. Levlization shall be carried out over the useful life of the wind power plant, and tariff is specified for the period equivalent to

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*GERC Order No. 2 of 2016.: Determination of tariff for Procurement of Power by the Distribution Licensees and others from Wind Power Projects.*

tariff period defined in this order. For the purpose of computation of levellized tariff, discount rate, as specified in this order, has been considered.

## **2.4 Computation of Tariff**

### **2.4.1 General Principles**

#### **a. Control Period**

The Commission in the discussion paper has proposed the control period from the date of this order to 31 March 2019.

#### ***Suggestions of the Objectors***

One of the objectors requested to consider the control period from 1<sup>st</sup> April 2016 as pervious tariff order expired on 31<sup>st</sup> march 2016.

#### ***Commission's Decision***

The previous wind tariff order No. 2 of 2012 dated 08.08.2012 was applicable up to 31<sup>st</sup> March 2016. In the meantime, the Commission initiated proceedings in suo-moto petition No. 1564 of 2016 for extension of the control period of said order till issue of new order. A public notice on the subject for inviting comments and suggestion of the stakeholders was published in newspapers on 22.03.2016. After due regulatory process, the Commission has extended the applicability of the Order No. 2 of 2012 dated 8.08.2012 read with Order dated 7.01.2013 in Petition No. 1243 of 2012 and 1249 of 2012 through an order dated 23.05.2016 in suo-moto Petition No. 1564 of 2016 till the new tariff order for procurement of wind power by the distribution licensees and others is issued by the Commission.

The Commission decided that the tariff and other commercial terms as determined by the Commission in the earlier order No 2 of 2012 dated 8.08.2012 read with Order dated 7.01.2013 in Petition No. 1243 of 2012 and 1249 of 2012 shall be applicable to the WTGs commissioned from 01.04.2016 onwards till the new tariff order is issued by the Commission. For long-term regulatory certainty to the investors, the Commission retains the control period as proposed in the discussion paper i.e. from the date of issue of this order to 31 March 2019.

#### **b. Useful life of Plant**

The Commission in the discussion paper has proposed useful life of 25 years for the wind power projects to be commissioned during the new control period starting from date of this order.



### ***Suggestions of the Objectors***

One of the stakeholders, suggested that considering the land lease period of 20 years, the project life of wind power projects to be considered as 20 years.

### ***Commission's Decision***

The CERC under 'RE Tariff Regulations 2012' has recommended 25 years as useful life of wind power project, including the evacuation line for tariff determination purpose. The Commission in its earlier tariff orders had also considered 25 years as useful life of wind power project. Moreover, it is a standard practice across the states. In view of this, the Commission decides to retain the useful life of wind power project as 25 years.

#### **c. Tariff period**

The Commission in the discussion paper has specified tariff period of 25 years for procurement of electricity from wind power projects to be commissioned during the new control period starting from the date of this tariff order.

No comments / suggestion were received from any of the stakeholders on this proposal. In view of the useful life of the project, the Commission decides to keep the tariff period as 25 years for wind power projects to be commissioned during control period starting from the date of this tariff order.

#### **d. Eligibility Criteria**

The Commission in its discussion paper has specified that the wind power projects using new wind turbine generators installed and commissioned after the notification of this wind tariff order will be eligible to sell power to distribution licensees of Gujarat at the tariff determined by the Commission in this tariff order.

### ***Suggestions of the Objectors***

Gujarat Urja Vikas Nigam Ltd (GUVNL) suggested that the tariff and terms and conditions decided in the present tariff order will be applicable to those projects for which PPA will be signed and wind capacity commissioned subsequent to the effective date of the present tariff order.

### ***Commission's Decision***

The Commission decides to retain the eligibility criteria as proposed in the discussion paper. The wind energy generators installed and commissioned for which PPAs would be signed during the GERC Order No. 2 of 2016.: Determination of tariff for Procurement of Power by the Distribution Licensees and others from Wind Power Projects.

control period of this order shall be eligible for sale of electricity at tariff determined by the Commission in this order. With regard to the submission of GUVNL, the Commission has provided its decision in Clause 5: Applicability of the order.

**e. Scheduling of wind power**

CERC has finalized the framework on forecasting, scheduling, and deviation settlement mechanism of RE generation based on wind and solar generators which qualify as regional entities as per the IEGC. After instituting an inter-state framework at central level, the Forum of Regulators (FoR) has framed model regulations on forecasting, scheduling, and deviation settlement of RE generation for the state level. Whenever such framework is implemented at state level, the provisions under the framework shall be applicable for the wind generators also.

**f. Applicability of Merit Order Dispatch Principle**

The Commission in the discussion paper has proposed that the wind power plants irrespective of plant capacity shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order despatch' principles.

***Suggestions of the Objectors***

Some of the objectors requested that in case of back down, wind generation has to be treated as deemed generation and the deemed generation has to be purchased at applicable tariff. It is observed that in high wind seasons, wind power generators are facing generation loss due to back down given by DISCOMs.

***Commission's Decision***

The backing down instruction is subject matter of SLDC. Such instructions are given for grid management and to ensure secure and economic operations of the state grid. Such instructions of grid operator shall be followed by the wind generators and other entities in overall security of the grid. Therefore, at the time of backing down, the wind generation cannot be treated as deemed generation and no payment will be made by the distribution utilities for this generation. However, the wind power plants irrespective of plant capacity shall be treated as 'MUST RUN' power plants and shall not be subjected to 'merit order despatch' principles.

**g. Metering point, grid connectivity and evacuation arrangement:**

In the discussion paper, Commission has proposed that the metering point will be at the pooling sub-station at 66KV level and above located at wind farm site, whereas the interface point for the grid connectivity will be the nearest GETCO sub-station.

***Suggestions of the Objectors***

GUVNL requested to clarify that the delivery point for supply / injection of wind power in the grid shall be nearest GETCO sub-station and not at the pooling sub-station. Indian Wind Energy Association requested to consider the applicability of interface point on the EHV side of the pooling sub-station for enabling hassle free implementation of forecasting and scheduling (F&S) framework in the state. GETCO has proposed the metering and interface point as proposed by the Commission.

***Commission's Decision***

The Commission clarifies that the 'pooling sub-station' means a sub-station developed by the developer/generator where pooling of generation from individual WTG is done for interface with the receiving sub-station. The metering point and interface point as proposed were described in the earlier wind tariff order dated 08.08.2012 and arrangement worked well during the last control period and all stakeholders have supported the same. The Commission therefore defines the metering and interconnection points as given below:

**Metering Point:** The metering point will be at the 66 KV/132 KV/220 KV pooling sub-station located at the wind farm site. For the purpose of energy accounting the developer/generator would install ABT compliant meter at the metering point as defined above.

**Interconnection Point:** The interconnection point will be the point of connection at the nearest GETCO sub-station. In case of any dispute on interconnection point, provisions of the Grid Code shall prevail.

**2.4.2 Operational and Financial Parameters**

The following operational and financial parameters have been considered while determining wind power tariff under the cost-plus approach.

- a. Capital cost
- b. Capacity Utilization Factor (CUF)

- c. Debt-Equity Ratio
- d. Loan Tenure and Rate of Interest on Term Loan
- e. Depreciation
- f. Return on Equity
- g. Operations & Maintenance Charges
- h. Interest on Working Capital
- i. Discount Rate

**a. Capital Cost**

Capital cost is the most critical component while determining tariff in a regulated environment. The capital cost of wind power projects comprise the cost of (i) tower and its base, (ii) turbine generators, (iii) blades, (iv) controllers, (v) power and control cabinets, (vi) distribution structure, (vii) transformer and associated equipment, (viii) land and its development cost, (ix) processing fee of Gujarat Energy Development Agency, (x) erection and commissioning charges, (xi) financing charges and interest during construction and (xi) creation of evacuation system up to the interconnection point .

In order to arrive at a benchmark capital cost for wind power projects to be commissioned in the new control period starting from the date of this order, the Commission has examined the wind power capital cost trends in the national and international markets during the last control period, the trend of commodity prices during the last control period, the wind power capital cost data of the projects commissioned in Gujarat during the control period of the GERC Wind Tariff Order dated 08.08.2012 as well as the approach followed by the Central Electricity Regulatory Commission (CERC) while fixing benchmark wind power capital cost under RE Tariff Regulations 2012. The cost incurred by the wind developers /investors for creation of power evacuation infrastructure during the last control period has also been examined as per the data provided by GETCO and factored in while deriving the capital cost.

On the basis of the above exercise, the Commission had proposed the benchmark capital cost of Rs 6.13 Cr/MW (including the power evacuation cost from wind farm sub-station to GETCO sub-station) for the new control period starting from date of this order.

### ***Suggestions of the Objectors***

Most of the objectors including the Wind Power Association/Wind Turbine Manufacturers/developers have commented that the cost proposed in the discussion paper is on lower side. New wind turbines having 100 m or more hub height have cost implications. Indian Wind Power Association submitted that the amendment in the IEGC to implement forecasting and scheduling (F&S) related equipment and installation of Low Voltage Ride Through (LVRT) technology to all WTGs as mandated by the CEA have significant impact on the capital cost. Some of the objectors have suggested a higher capital cost benchmark in the range of Rs 6.5 Cr/MW to Rs 6.80 Cr/MW on the basis of present market conditions. Few objectors requested to consider the capital cost proposed by CERC i.e. Rs 6.19 Cr/MW plus additional evacuation cost of Rs 38 Lakh as considered in the previous tariff order.

GUVNL in their submission requested the Commission for lowering the capital cost from Rs 6.06 Cr/MW to Rs 5.84 Cr/MW in line with the approach followed by the MPERC in its tariff order for the year 2016.

Some of the stakeholders suggested to incorporate a suitable indexation formula for revision of capital cost during the control period or alternatively, adopt the capital cost indexation formula proposed by the CERC in its RE Tariff Regulations, 2012. Indian Wind Energy Association requested to determine each year tariff during the control period in line with the indexation formula specified by CERC.

Some of the stakeholders also requested to consider the impact of increase in service tax from 12.36% (as applicable at the time of previous wind tariff order) to 15% (as effective from 01.06.2016) in the capital cost.

### ***Commission's Decision***

The Commission has noted the points of the stakeholders regarding the capital cost of wind power projects for the new control period. In order to arrive at the capital cost benchmark for the new control period starting from the date of this order, the Commission has carried out its own exercise. The Commission has examined the wind power capital cost trends in the national and international markets during the last control period. The commodity (E&M and Steel) prices variation during the last control period was also examined. Under the Regulatory approach, the Commission has studied the capital cost benchmark fixed by CERC and other State Electricity Regulatory Commissions (SERCs) in their recent wind tariff orders. The annual growth rate of the

capital cost fixed by the CERC from 2012 to 2016 has also been considered. The Commission has analyzed the wind power capital cost data of the projects commissioned in Gujarat during the last control period. The analysis was based on the state specific data submitted by IREDA (90.4 MW), and some of the Public Sector Undertakings (PSUs) who have installed wind power projects in the state (149.5 MW). The Commission has also verified the capital cost related data of the wind power project in the state registered with UNFCCC under Clean Development Mechanism (137.7 MW).

The cost incurred by the wind developers /investors for creation of power evacuation line /infrastructure from wind farm sub-station to GETCO sub-station during the last control period has also been examined as per the record provided by GETCO. Accordingly, the normative cost for laying of evacuation infrastructure has been fixed for the new control period.

The Commission has considered the submission of the stakeholders with regard to requirements for F&S and LVRT as per the guideline issued by CERC and CEA. The normative cost for the same has been included in the capital cost. The benchmark capital cost for the entire control period is derived by considering an appropriate escalation factor over the control period on the base cost.

In view of above, the Commission decides to adopt the benchmark capital cost of Rs 6.15 Cr/MW (including the power evacuation cost from wind farm sub-station to GETCO sub-station and the cost of F & S facilities including LVRT) for determination of tariff for the wind power projects to be commissioned in the control period starting from date of this order. The developer of wind power projects shall be responsible to construct the power evacuation line from wind farm switchyard to GETCO sub-station up to 100 km length without any additional cost. The cost on this account is already considered in the capital cost decided above.

#### **b. Capacity Utilization Factor (CUF)**

The Commission has elaborated the rationale for specifying the CUF of 24.5% in the discussion paper. The Commission had noted that the CUF at a given location would depend on (i) site specific parameters like wind velocity, wind density and Weibull parameters as well as (ii) machine specific parameters like hub height, rotor diameter, micro-sitting technique used and power curve of the machine. The state specific parameters and performance of WTG installed during the last control period have been analyzed while specifying the CUF for new control period.

The Commission noted that during the last control period (01.04.2012-31.12.2015), about 67.6% of the wind power projects (i.e. 639.45 MW out of 948.225 MW) commissioned in the state have used MW-class WTGs.

The Commission has examined the actual CUF achieved by the wind power projects installed during FY 2012-2013 to FY 2015-16 which have used MW-class WTGs in the state, and noted that the CUF of the wind power projects having MW class WTG commissioned in FY 2012-13 have achieved CUF in the range of 18.2% to 34.1% during 2013-14 and 2014-15 whereas the wind power projects commissioned in FY 2013-14 have achieved CUF in the range of 9.7% to 28.5% during FY 2014-15 and 2015-16.

The Indian Wind Atlas developed by NIWE in association with Riso DTU National Laboratory for Sustainable Energy (NLSE), Denmark shows most of the wind power potential areas in the state located under 200-350 W/m<sup>2</sup> wind power density zone at 100m hub height. The corresponding CUF, as given in the report, are in the range of 20% to 28%. In a Study Report prepared by Wind Force and CSTEP for Ministry of New and Renewable Energy in July 2015, the CUF of Gujarat State assessed as in between 25% to 40% and wind speeds range from 6 m/s to 9 m/s.

#### ***Suggestions of the Objectors***

Most of the stakeholders suggested to specify the CUF at 24% or reducing it to 23% for the new control period. Inox Renewables Ltd and other few objectors suggested to not to consider the CUF on the basis of wind potential at 100 m height as very few generators are using machines of hub height of 100 m. Wind Independent Power Producers Association mentioned that out of 67 wind mast installed by NIWE in Gujarat, only in 12 locations the wind power density is more than 250 W/m<sup>2</sup> while for the remaining locations the wind power density is less than 250 W/m<sup>2</sup> and therefore the normative CUF could be fixed at 23%.

GUVNL in their submission urged the Commission that the inefficiencies of the WTGs may not be allowed to pass through in the tariff by considering lower CUF in place of achievable CUF. GUVNL suggested to consider CUF of 26% based on a scientific study / analysis, accounting for the wind potential in the state and considering the long coast line in the state.

Some of the stakeholders suggested for specifying zone wise CUF based on average wind speed and zone-based tariff based on the zones as recommended by CERC under RE Tariff Regulations 2012.

#### ***Commission's Decision***

NIWE has conducted the wind resource assessment studies at 81 locations in Gujarat at 20-120 m mast height. The 81 potential locations identified in the State are grouped into the seven groups of the wind power density at 100 m hub height. As evident from the map given in Indian Wind atlas corresponding to Gujarat state, the sites in Gujarat are having WPD of 200 – 350 W/m<sup>2</sup>

and corresponding CUF varies from 20% - 28%. According to the study done by WinDForce and CSTEP, the CUF of Gujarat state ranges from 25% to 40% and wind speeds range from 6 to 9 m/s.

The Wind Power Density at preferred hub height will be a better indicator of CUF. In order to arrive at normative CUF, the Commission extensively studied the machine-specific and site/state specific characteristics for the state of Gujarat. The Commission observed that most of the wind projects commissioned in last control period have used MW scale WTGs. The Commission has analyzed the performance in terms of actual CUF achieved by the wind power projects installed during FY 2012-13 to FY 2015-16, which have used MW-class WTGs in the state.

The Commission has considered the time-span of the new control period starting from date of this order and the fact that with advancement in technology during the new control period the CUF of the new WTGs is bound to increase.

The Commission is of the view that the preferential tariff regime should encourage betterment in efficiency by deployment of better technology and techniques. The Commission has also to ensure that the consumers are not burdened with the tariff. The Commission does not find any reason to consider the suggestion of lowering of CUF, similarly suggestion of GUVNL to raise the CUF to 26% cannot be accepted without detailed reasoning for the same. In view of above the Commission decides to specify a normative CUF of 24.5% for determination of tariff during the new control period starting from date of this order.

### **c. Debt Equity Ratio**

GERC Multi Year Tariff (MYT) Regulations, 2016 provide for the normative debt-equity ratio of 70:30 for Generating Company/Licensees. Clause 5.11 (b) of the Tariff Policy, 2016 notified by Government of India stipulates a debt-equity ratio of 70:30. Also, the CERC RE Regulations, 2012 have considered the same debt-equity ratio for wind power projects. The Commission proposed the debt equity ratio as 70:30 in the discussion paper as considered in the previous wind tariff orders.

### ***Suggestions of the Objectors***

M/s CLP Wind Farm (India) Pvt. Ltd has proposed that debt-equity ratio should be kept as 60:40.

### ***Commission's Decision***

The Tariff Policy, 2016 formulated by the Ministry of Power, Govt. of India stipulates debt-equity ratio of 70:30 for power projects. GERC Multi Year Tariff (MYT) Regulations, 2016 notified by the Commission also provide that the debt-equity ratio should be kept at 70:30. Hence, the

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***GERC Order No. 2 of 2016.: Determination of tariff for Procurement of Power by the Distribution Licensees and others from Wind Power Projects.***



Commission decides to retain the debt-equity ratio as 70:30 for the new control period starting from date of this order.

**d. Loan Tenure and Rate of Interest on Term Loan**

The Commission in its earlier Wind Tariff Order dated 08 August 2012 stipulated loan tenure of 10 years. While considering the interest rate of loan, the Commission noted the trend of SBI base rate from February 2013 to February 2016 and observed that the current Base Rate of SBI is 9.3%. It has been noted that the base rate has been decreasing from April 2015. In view of this, the Commission had proposed to use the current base rate of SBI with a spread of 300 basis points above the current SBI base rate for fixing the interest on loan for tariff determination purpose.

***Suggestions of the Objectors***

Some of the stakeholders proposed to consider the SBI base rate for first six months plus 300 basis point for specifying interest rate for loan as per CERC regulations. Few stakeholders suggested to consider last one year weighted average base rate with spread of 300 basis point. One of the stakeholders suggested to consider the interest rate as 12.4%. GUVNL requested to consider interest rate at 11.8%, i.e. SBI base rate plus 250 basis point in line with GERC MYT Regulations, 2016.

Some stakeholders requested to consider loan tenure as 12 years in line with CERC regulations. One of the objectors suggested to consider loan tenure as 7 years.

***Commission's Decision***

The Commission has noted that the project financing interest rates are typically indicated by the SBI base rate. The Commission further noted that the SBI base rate has been reducing from April 2015. It has been noted that from October 2015, the SBI base rate is constant at 9.3%. Therefore, the Commission had considered current base rate of 9.3% while fixing the interest on term loan. The Commission decides to use the current base rate of SBI with a spread of 250 basis points above the current SBI base rate for fixing the interest on loan for the purpose of tariff determination. Regarding loan tenure, investors are not facing any problem of getting loan with tenure of 10 years, and the data collected from IREDA also substantiate this fact.

In view of above, the Commission decides to fix the normative interest rate on term loan as 11.8% and the loan tenure as 10 years for repayment of term loan for the purpose of tariff determination for the new control period starting from date of this order.

#### e. Depreciation

CERC (Terms and Conditions for Tariff Determination from Renewable Energy Sources) Regulations, 2012 considers the capital cost of the asset admitted by the Commission as value base for the purpose of determination of depreciation. Further, the salvage value of the asset is considered as 10% and depreciation is allowed up to a maximum of 90% of the capital cost of the asset. Depreciation per annum shall be based on 'Differential Depreciation Approach' over loan tenure. Beyond loan tenure the depreciation is allowed as per 'Straight Line Method' over remaining useful life of plant.

The Commission in its Wind Tariff Order dated 08 August 2012 had considered a higher rate of depreciation than the SLM as a promotional measure during the loan tenure. In view of the above, the Commission had proposed depreciation rate of 6% per annum for the first 10 years, and 2% from 11th year to 25th year for tariff determination purpose.

#### *Suggestions of the Objectors*

Most of the stakeholders suggested that the depreciation rate should be such that the annual depreciation can cover the annual loan repayment. The stakeholders requested to keep depreciation rate of 7% per annum during the first 10 years and the balance depreciation to be spread over the remaining useful life of the project. Some stakeholders suggested that considering 12 years loan tenure, the depreciation rate be considered as 5.83% as per CERC norms.

#### *Commission's Decision*

GERC Multi Year Tariff (MYT) Regulations, 2016 notified by the Commission specifies that depreciation rate should be calculated based on the Straight Line Method. The MYT Regulations further lay down that asset is to be depreciated up to 90% of its initial value (considering residual value as 10% of its initial value) over the entire asset life. As requested by the stakeholders and to facilitate the loan repayment, the Commission has considered depreciation rate at 7% per annum during the loan repayment period of 10 years. The Commission decides to keep the depreciation rate as 7% per annum for the first 10 years and beyond loan tenure, the depreciation is allowed as per 'Straight Line Method' over remaining useful life of plant i.e. depreciation @ 1.33% from 11th year to 25th year for the purpose of tariff determination for new control period starting from date of this order.

#### f. Return on Equity (RoE)

The Commission in the discussion paper proposed 14% RoE. The GERC (Multi Year Tariff) Regulations, 2016, notified by the Commission provide norms for the RoE as 14% per annum. Also the tax payment in the form of MAT at the rate of 21.34% per annum for first 10 years and corporate tax at the rate of 34.61% per annum for the next 15 years has been considered as cost in tariff calculation as per earlier order of the Commission.

### ***Suggestions from Objectors***

Most of the objectors have suggested that the base RoE may be considered as 16%. Orange Renewable Power Pvt. Ltd submitted that the Commission should consider RoE of 17.8% for the first ten years and 21.41% for the next fifteen years. One of the objectors submitted that the RoE of 14% proposed by the Commission is less than that allowed to the thermal generators under CERC Regulations 2014. The CERC in its RE Regulations 2012 has considered pre-tax RoE of 20% for the first 10 years and 24% for the next 15 years. SITAC RE Pvt. Ltd proposed to consider RoE as 5%-6% more than bank's interest rate. Some objectors requested for grossing up of post-tax RoE as per applicable tax rate.

Some objectors requested that tariff is to be determined without considering the incentive under Section 80-IA of Income Tax Act which is valid till 31<sup>st</sup> March 2017. Adani Green Energy Ltd and CLP India submitted that the Commission should consider inclusion of enabling clause to review the post-tax regulated returns (RoE) on account of change in law / change in tax rates in future.

### ***Commission's Decision:***

GERC (Multi Year Tariff) Regulations, 2016 notified by the Commission specify the RoE of 14%; the same was specified by the Commission in its discussion paper. The Commission follows the principle of allowing 14% RoE plus the applicable tax payment for conventional and renewable power projects. The Commission decided to consider RoE of 14% and the tax payment of MAT at the rate of 21.34% per annum for first 10 years and corporate tax at the rate of 34.61% per annum for the next 15 years as a cost for the purpose of computing the tariff for the new control period starting from date of this order. In generic tariff determination approach, it is not possible to evaluate the impact of change in law at the time of tariff determination. In case of any changes in tax regime / rules during the control period, the Commission shall verify the same and take appropriate action.

### **g. Operations & Maintenance Charges**

The Commission had, in its earlier wind tariff order dated 08 August 2012 considered the O&M expenses at Rs 8 Lakh/MW for the year 2012-13 with escalation of 5.72% from the second year

onwards. In the discussion paper, the Commission had proposed the O&M charges of Rs 10.63 Lakh/MW, with annual escalation of 5.72% for the new control period starting from date of this order.

#### ***Suggestions from Objectors***

Some of the objectors have suggested for increasing the base O&M cost to Rs. 10.88 Lakh / MW to Rs 11.24 Lakh/MW as per CERC Regulations. CLP India requested that if any charges have to be paid to GETCO for O&M of the line constructed from pooling sub-station to GETCO sub-station, that should also be added in the O&M cost. GUVNL submitted that considering the O&M cost of Rs 8 Lakh/MW during previous control period with annual escalation of 5.72% per annum, the O&M cost for the base year of new control period comes to Rs. 9.45 Lakh / MW, which should be considered for the purpose of tariff determination for the new control period. Adani Green Energy Pvt. Ltd. has requested to consider the escalation rate as 7%.

Some of the investors requested for considering the impact of change in service tax rate from 12.36% to present 15%.

#### ***Commission's Decision:***

The Commission has carefully gone through the approach followed by the CERC and other SERCs while fixing the O&M cost for the purpose of wind power tariff determination. The O&M cost of Rs. 8 Lakh/MW considered by the Commission in its wind tariff order dated 08 August 2012, if escalated by 5.72% annually, comes to Rs. 9.90 Lakh/MW for FY 2016-17 and accordingly, the Commission decides to fix the O&M cost at Rs. 9.90 Lakh/MW. Further, as per the provisions of the GERC (MYT) Regulations 2016, the Commission decides to fix the annual O&M escalation at the rate of 5.72% over the tariff period in the new control period starting from date of this tariff order.

#### **h. Working Capital and Interest on Working Capital**

The Commission in its Wind Tariff Order dated 08 August 2012, had considered the interest rate on working capital at 12% which was 200 basis points above the prevalent to SBI base rate.

In the discussion paper, the Commission had considered interest on working capital as 200 basis points over the current SBI base equal to 11.30%. Similarly, the Commission has proposed (i) Receivable of one month and (ii) O&M cost for one month as components of working capital.

### **Suggestions from Objectors**

Some objectors have proposed to consider interest on working capital 50 basis point higher than the interest on long term loan. Few objectors suggested to consider the interest on working capital as SBI base rate for first six months of last financial year plus 350 basis point as per CERC Regulations. Some of the objectors suggested interest on working capital in the range of 11.78% - 13.5%.

One of the objectors requested to align the working capital with the conventional generation Tariff Regulations; thereby allowing maintenance spares as part of working capital @ 15% of O&M costs. Ostro Energy Pvt. Ltd suggested to consider 3 months of O&M expenses in the working capital.

### **Commission's Decision**

As per the GERC (MYT) Regulations, 2016 interest on working capital shall be allowed at a rate equal to the SBI Base Rate plus 250 basis points. The Commission noted that the working capital requirement by the project developer would be generally on short term basis which can be managed at lower interest rate.

In view of above, the Commission decides to consider the interest rate on working capital as 11.8% (current SBI base rate of 9.3% + 250 basis point) for the purpose of tariff determination of wind power projects during new control period starting from the date of this order.

The Commission also decides to keep the components of working capital as decided in the previous wind tariff order. Accordingly, the components of working capital would be (i) Receivables of one month and (ii) O&M cost for one month.

#### **i. Discount Rate**

The Commission in the discussion paper had calculated the annual levellized tariff based on the discount rate of 10.29%. As per the standard methodology followed by CERC and other SERCs, the discount rate is proposed as weighted average cost of capital (WACC) for the purpose of levellized tariff calculation.

### ***Suggestions from Objectors:***

One of the objectors requested to consider pre-tax WACC for each year as discount rate for that year.

### ***Commission's Decision***

CERC (terms and conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 has recommended post tax weighted average cost of capital (WACC) as discount rate for determination of levellized tariff. Generally, the developer applies post tax WACC as the discount rate to post tax incremental cash flows to arrive at NPV of the project. WACC is the addition of cost of debt and cost of equity. The cost of debt is calculated based on market interest rate, MAT and corporate tax rate, while the cost of the equity is calculated based on the return on equity. The computation of WACC is given below considering the interest rate finalized in the para 2.4.2 (d).

WACC = Cost of Debt + Cost of Equity

Where, Cost of Debt (For first 10 Years) =  $0.70 \times (\text{Market Rate of Interest}) \times (1 - \text{MAT})$

Cost of Debt (11th Year to 25th Year) =  $0.70 \times (\text{Market Rate of Interest}) \times (1 - \text{Corporate tax})$

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

Resulting WACC =  $\{(\text{WACC for first 10 Years} \times 10) + (\text{WACC 11th Year to 25th Year} \times 15)\} / (10 + 15)$

Cost of Debt (For first 10 Years) =  $0.70 \times 11.8\% \times (1 - 21.34\%) = 6.5\%$

Cost of Debt (11th Year to 25th Year) =  $0.70 \times 11.8\% \times (1 - 34.61\%) = 5.4\%$

Cost of Equity =  $0.30 \times 14\% = 4.2\%$

WACC for first 10 Years = 10.70% and WACC 11th Year to 25th Year = 9.6%

Resulting WACC = 10.04%

In view of the above calculation, the Commission decides to specify the discount rate as 10.04% for the purpose of computation of the levellized tariff over the life of 25 years.

### **2.4.3 Subsidy and Incentive by the Central/State Government**

**Benefit due to Accelerated Depreciation:** The Commission noted that the wind power project developers can avail benefit of Accelerated Depreciation as per Section 32 of the Income Tax Act read with the Rules framed there under. In addition to above, the wind power project developers can claim an additional depreciation of 20% during the first year of commissioning of the project as per the Finance Act. In the discussion paper, the Commission has proposed 40% accelerated depreciation as per the announcement in Budget Speech made by Hon Finance Minister. In totality 60% depreciation in the first year of commissioning of project was considered.

### ***Suggestions from Objectors:***

Some of the objectors have suggested that two separate tariffs with and without Accelerated Depreciation benefit may be specified, since the IPPs may not be in a position to avail the

accelerated depreciation benefit. Further the objectors requested Commission to direct GUVNL/ distribution licensee to procure electricity at such tariff specified by the Commission. Few objectors requested to compare the accelerated depreciation (as per IT Act, 1961) with tax depreciation i.e. 7.69% while calculating the impact of accelerated depreciation benefit. ReGen Power Tech Pvt. Ltd suggested to consider the reduced rate of depreciation (40%) from FY 2017-18. Indian Wind Power Association requested that the Commission may incorporate a clause in the Tariff Order which explicitly pronounces that a Distribution Licensee cannot reject the signing of PPA irrespective of developer's stance to avail AD benefit or not, if it is yet to fulfill its RPO targets.

### ***Commission's Decision***

The Commission has noted that the provisions of Accelerated Depreciation are available in the Income Tax Act 1961 and Rules framed there under. A person who qualifies under the above statutory provisions is entitled to get benefit of Accelerated Depreciation. Moreover, that Income Tax Act would not make any discrimination between the tax payers / investors, everyone is allowed to avail the benefit as per provisions under Income Tax Act. Under Cost plus approach the tariff is determined upon normative cost and performance parameters. In view of the fact that the Commission has allowed all reasonable cost and returns to be recovered from the tariff, it is fair that any benefit occurring due to subsidy / accelerated depreciation would be factored in while determining the tariff. Hence the Commission decides to determine a single levellized tariff taking into account the benefit of accelerated depreciation available under Income Tax Act 1961 and Rules framed under it.

The Commission has reviewed the present accelerated depreciation rate under Income Tax Act 1961 and Rules framed under it and an additional depreciation available in the first year of commissioning as per Finance Act. The Commission noted that at present the wind developer /investor can avail 80% depreciation under Income Tax Act 1961 with an additional 20% depreciation as allowed in Finance Act during first year of project commissioning. Following method has been adopted to calculate the per unit benefit available due to accelerated depreciation.

- a. The assessment of benefit shall be based on normative Capital Cost, accelerated and additional depreciation rate as per the relevant provisions of the Income Tax Act and the Corporate Income Tax rate;
- b. Capitalization of RE Projects for the full financial year;
- c. Per unit benefit shall be derived on levellized basis at a discounting rate equivalent to the post-tax weighted average cost of capital as determined above.

In view of above, the Commission decides to specify a single generic levelled tariff after factoring the benefit of accelerated depreciation for the new control period starting from date of this order. In case of any changes in tax regime / rules during the control period, the Commission shall verify the same and determine tariff at appropriate time in accordance with the law.

**Benefit due to Generation based Incentive:** The Commission noted that the Generation based Incentive (GBI) scheme is re-introduced by Ministry of New and Renewable Energy (MNRE), Government of India with effect from 04 September 2013. Under this scheme, a GBI is offered to wind energy generators at Rs 0.50 per kWh of electricity fed into the grid for a period not less than 4 years and a maximum period of 10 years with a cap of Rs 100 Lakh / MW. The total disbursement in a year was limited to one fourth of the maximum limit of the incentive i.e. Rs. 25 Lakh / MW during the first four years. The GBI scheme as per present guidelines will be continued till end of 12<sup>th</sup> Plan period. The Commission in the discussion paper proposed that the GBI incentive which is available to the developer/investor over and above the tariff shall be shared with the distribution licensee / end consumer in equal proportion i.e. 50-50% basis.

#### ***Suggestions from Objectors:***

Most of the objectors suggested to not to share GBI as it is over and above the tariff. The proposal of the MNRE is to promote wind power and hence proposal of sharing of GBI is not in consonance with MNRE objectives. Some of the objectors including GUVNL suggested that some companies which cannot avail accelerated depreciation benefit should be allowed to avail GBI fully and proposal of sharing of the same should be withdrawn. Few objectors suggested that no other states have adopted a strategy to share this incentive. Some objectors opined that GBI is an incentive component for IPPs, whereas levelled tariff, applicable for all projects, is net of AD benefits; hence, sharing of GBI is double deterrent for IPP projects.

#### ***Commission's Decision***

The Commission has noted the concerns of the stakeholders. The Commission noted that the GBI operational guidelines notified by MNRE / IREDA specifies that the GBI incentive is over and above the tariff approved by the SERCs in the various state. The Commission has followed cost plus approach for arriving at tariff for sale of electricity generated from wind power projects to the distribution licensees during the new control period. The single levelled tariff has been specified after taking into account the benefit due to AD available to wind power projects. In view of above, the Commission decides that GBI will not be shared with distribution utilities and end consumers. The wind power developer /investor who are eligible to claim GBI as per MNRE



guidelines can retain the incentive over and above the tariff determined by the Commission in this order.

### 3. Tariff Determination

Based on the foregoing discussion, various operational and financial parameters considered by the Commission for determination of wind power tariff are given in the table below:

Parameters for the new control period	
Project Cost	
Capital Cost including Land, Plant & Machinery, F & S facilities, LVRT, Erection and evacuation infrastructure cost (Rs Lakh/MW)	615
Normative O&M cost for first year (Rs Lakh/MW)	9.90
Escalation in O & M (per annum from 2nd year)	5.72%
Performance Parameters	
CUF	24.5%
Project life in Years	25
Financial Parameters	
Debt-Equity ratio	70:30
Term of Loan in Years	10
Interest on Term Loan	11.80%
Interest on Working Capital	11.80%
Depreciation	7% (for the first 10 years) 1.33% (from 11 to 25 years)

Parameters for the new control period	
Return on Equity	14%
Minimum Alternate Tax	21.34%
Corporate Income Tax	34.61%
Discount rate	10.04%
Gross Tariff	Rs 4.72 per kWh
Depreciation Benefit	Rs 0.53 per kWh
Net Tariff	Rs 4.19 per kWh

The net tariff determined by the Commission is **Rs 4.19/kWh** payable by the distribution licensees to wind turbine generators which are installed and commissioned during the control period of this order for which the PPAs shall be signed by the distribution licensees with the Wind Turbine Generators.

#### 4. Other Commercial Issues

##### 4.1 Transmission and Wheeling Charges

The Commission in its discussion paper had specified the Open access charges and losses for wheeling wind energy for captive use and third-party sale during the new control period. Wheeling of Power for third-party sale from wind energy generator was proposed on payment of normal open access charges and losses along with payment of 25% of the cross subsidy surcharge as applicable to normal open access consumer. For captive transaction, wheeling of power to consumption site at 66 kV voltage level and above was proposed on payment of normal open access charges and losses, whereas wheeling of power to consumption site below 66 kV voltage level was proposed on the basis of concessional wheeling charges and wheeling losses.

In the discussion paper, it was proposed that wind energy generators, who decide to wheel electricity for captive use / third-party sale, to more than one location, shall pay 5 paisa/kWh on energy fed into the grid to the distribution company concerned in whose area power is consumed in addition to above mentioned transmission charges and losses, as applicable.

### ***Suggestions from Objectors***

Some of the objectors requested to withdraw the proposal of levy of CSS. The objectors further submitted that the Commission has waived levy of CSS on third-party sale in case of Solar power and hence similar dispensation should be allowed to wind energy. One of the objectors suggested that in case of third-party sale wheeling charges shall be allowed at 25% of normal OA charges. One of the objectors suggested to reduce the OA charges to zero. Indian Wind Energy Association requested that as Ministry of Power under Tariff Policy waived off the transmission charges in case of inter-state transaction of RE power, similar relaxation can be given at intra-state level by the GERC. Alternatively, charges may be specified in per kWh basis. One of the objectors requested to exempt wheeling and transmission charges for a period of ten years while another objector requested for exemption as per 2012 wind order.

GUVNL requested to keep OA charges as specified in the Gujarat Solar Policy 2015. Torrent Power Ltd suggested that WEG opting for captive use should be treated at par with other open access consumers. Torrent Power Ltd requested that for third part sale all charges including CSS should be applicable like normal open access transaction as it is a commercial proposition.

### ***Commission's Decision***

The transmission lines are designed so as to carry the rated connected capacity of wind energy generator and therefore cost of transmission / distribution assets created for such projects is required to be recovered through the transmission and wheeling charges.

The third-party sale through open access is a commercial decision of the generator. Whenever any WTG sells the electricity under Third Party Sale, he shall be liable to pay transmission and wheeling charges and other charges as stated below:

- (i) Wheeling of power for third party from Wind Energy Generator shall be allowed on payment of transmission charges, wheeling charges & losses of energy fed to the grid, as applicable to normal open access consumers. Set off of wheeled energy at recipient unit(s) shall be carried out in the same 15-minute time block.
- (ii) Further, Wind Energy Generators who desire to wheel electricity to more than one location, shall pay 5 paise per unit on energy fed in the grid to the Distribution Company concerned in whose areas power is consumed in addition to above mentioned transmission/wheeling charges and losses, as applicable.

- (iii) 50% of Cross Subsidy Surcharge and Additional Surcharge, as applicable to normal open access consumers.

However, in case of the wind energy generators opting for wheeling of power for own use, the Commission decides to allow lower transmission / wheeling charges. Accordingly, the transmission and wheeling charges applicable to the captive consumers shall be as under:

- a) **Wheeling of power to consumption site at 66 kV voltage level and above:** The wheeling of electricity generated from the Wind Energy Generators, to the desired location(s) within the State, shall be allowed on payment of transmission charges and transmission losses applicable to normal Open Access Consumer.
- b) **Wheeling of power to consumption site below 66 KV voltage level:** In case the injection of power is at 66 kV or above and drawl is at below 66 kV , wheeling of electricity generated from wind power projects to the desired location(s) within the State, shall be allowed on payment of transmission charges and transmission losses applicable to normal open access consumers and 50% of wheeling charges and 50% of distribution losses of the energy fed into the grid as applicable to normal open access consumers.
- c) **Wheeling of electricity generated by small investor, having only one WEG in the State,** to the desired location(s), shall be allowed on payment of transmission charges applicable to normal open access consumer, and transmission and wheeling losses @ 10% of the energy fed to the grid. The above losses are to be shared between the transmission and distribution licensee in the ratio of 4:6.

Further, the Commission decides that wind energy generators, who desires to wheel electricity for captive use / third-party sale, to more than one locations, he shall pay 5 Paise per unit on energy fed in the grid to the Distribution Company concerned in whose area power is consumed in addition to the above mentioned transmission charges and losses, as applicable.

#### 4.2 State Energy Metering

In the discussion paper it was proposed to keep the wind energy generators out of the purview of state intra-state ABT. However, for the purpose of energy accounting, such projects will have to provide ABT compliant meters at the interface point. The metering shall conform to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time. The electricity generated from the wind power generator shall be metered and readings shall be taken jointly by the wind power project developer with the Gujarat Energy Development Agency (GEDA), Gujarat Energy Transmission Company Ltd. (GETCO) or Distribution Company at the metering point.

### ***Suggestions from Objectors***

GETCO suggested that interface point for metering with GETCO is the HV side of the transformer or outgoing line from pooling sub-station. GETCO and GEDA will jointly take the reading. However, below 66 kV, i.e. when meters are installed at each WTG, the reading from such individual meters will be through remote access and will be received at SLDC/ ALDC/ DISCOM / GEDA. Joint meter reading will not be required for such individual meters.

### ***Commission's Decision:***

The Commission has defined the interconnection point and metering point in para 2.4.1 (g) of this order. The Commission directs that wind power project developers should install ABT compliant meters at the pooling substation. The ABT meter shall conform to the Central Electricity Authority (Installation and Operation of Meters) Regulations, 2006, as amended from time to time. The project developers will have to install Remote Terminal Unit (RTU) for transferring the real time data to SLDC for its monitoring purpose. Further, the Commission has clarified through its order dated 07.01.2013 that installation of ABT compliant energy meter at each WTG is necessary so as to evaluate the generation of each WTG on real time basis.

The electricity generated from the wind power generator shall be metered and readings shall be taken jointly by the wind power project developer with the Gujarat Energy Development Agency (GEDA), Gujarat Energy Transmission Company Ltd. (GETCO) or Distribution Company at the metering point.

### **4.3 Pricing of Reactive Power**

Some of the wind energy generators require reactive power during initial start-up and their station transformers also continuously require reactive power from the grid. Hence, in order to maintain grid stability, it is necessary to limit such reactive power consumption from the grid by installation of suitable compensation devices. In order to restrain the wind power projects from consuming more reactive power from the grid and to encourage them to install suitable compensation devices to limit such reactive power consumption, the Commission in its discussion paper had proposed to continue the levy of reactive power charges as specified in its Wind Tariff Order dated 08.08.2012.

### ***Suggestions from Objectors***

GETCO suggested to revise the rate of reactive energy charges and proposed the rate as 25 paisa /kVARh for drawl of reactive energy at 10% or less of the net energy exported and 50 paisa /kVARh for drawl of reactive energy at more than 10% of the net active energy exported.

#### ***Commission's Decision***

The Commission has noted that due to its inherent characteristics the Wind Energy Generators are prone to draw reactive power from the grid. In order to ensure that only a minimum reactive energy is drawn by WTGs from the grid the Commission decides the rate of the reactive energy charges for wind power projects as follows:

*"10 paise/kVARh – For the drawl of reactive energy at 10% or less of the net energy exported.*

*50 paise/kVARh – For the drawl of reactive energy at more than 10% of the net active energy exported".*

Any change in the reactive energy charges for wind power projects if addressed in the Commission's transmission tariff order effective from time to time shall be made applicable to wind power projects

#### **4.4 Sharing of Clean Development Mechanism (CDM) Benefits**

In the discussion paper, it was proposed to retain the provisions for sharing of CDM benefits as specified in Commission's Wind Tariff Order dated 08.08.2012 as per the provisions given in the CERC (Terms and Conditions for Tariff determination from Renewable Energy Sources) Regulations, 2012 dated 6th February 2012 for the next control period. The provisions proposed as follows:

*"100% of net proceeds through sale of CER generated from the energy generation in the first year after the date of commercial operation of the wind power project shall be retained by the wind power generating company.*

*In the second year, the share of the beneficiary shall be 10% which shall be progressively increased by 10% every year till it reaches 50% in the sixth year; thereafter the proceeds shall be shared in equal proportion by the wind power generating company and the beneficiary"*

#### ***Suggestions from Objectors***

Some of the objectors had proposed that the investors should be allowed to retain 100% CDM benefits considering the huge risks and upfront expenditure involved. It was also pointed out that

there is a wide gap in the date of project commissioning, date of CDM project registration with UNFCCC, issuance of CER and the actual receipt of money after trading of CERs due to the various processes involved in the CDM project registration. The objectors proposed that the sharing of net CDM revenue should be allowed after CDM project registration and payable after realization.

#### ***Commission's Decision***

Considering the high initial cost of registering CDM projects, and the long time taken to realize the CDM benefits and the operational issues, the Commission decides that the sharing of net proceeds on account of CDM benefits realized through sale of CER generated from corresponding annual energy generation should be as follows:

- 100% of net proceeds through sale of CER generated from the energy generation in the first year after the date of commercial operation of the wind power project shall be retained by the wind power generating company.
- In the second year, the share of the beneficiary shall be 10% which shall be progressively increased by 10% every year till it reaches 50% in the sixth year; thereafter the proceeds shall be shared in equal proportion by the wind power generating company and the beneficiary.

Wind power projects availing CDM benefit shall share the net CDM proceeds annually as per above, by 31 March of every year with affidavit stating the annual energy generation (date of commissioning as starting point of the first year), CER generated, gross receipts, and net receipts, etc.

#### **4.5 Banking of Surplus Wind Energy**

In the discussion paper, considering the infirm nature of wind, as well as seeing the possible risk to utilities in changing electricity rates throughout the year in the intra-state ABT regime provision of one-month banking was proposed for captive wind power projects not registered under REC mechanism. The captive wind energy projects were allowed to set off captive consumption against the monthly energy generated during peak and normal hours. However, considering the fact that the intra-state ABT and DSM mechanism has been adopted in the state, banking of energy for limited period also have financial implication on utility. To protect the interest of utility, it was proposed to levy Banking charges in kind at 2% of energy banked. Banking facility was not proposed in the discussion paper for third-party sale of wind energy.

### ***Suggestions from Objectors***

Some of the objectors have proposed to allow the banking facility for third-party sale also. Some of the objectors requested that for encouraging sale of captive power duration of banking period may be increased to 3 - 12 months. One of the objectors requested for clarity on applicability of banking charges in existing wind farms. Few objectors requested to remove banking charges on energy banked as there will be additional burden over 13 paisa per unit on the wind energy generated.

Torrent Power Ltd requested the Commission to discontinue the banking facility for captive wind power projects as this is a commercial proposition and requested to treat them at par with other open access consumers in order to reduce the burden on the other consumers.

### ***Commission's Decision***

Considering the intermittent generation pattern of wind power projects and as a promotional measure the Commission decides to continue the present practice of settlement of excess generation after set off during one billing cycle in case of captive wind power projects in the state. With intra-state ABT mechanism in place in the state, increase in time period for banking will have adverse financial impact on utilities. As a promotional measure, the captive WEGs not registered under REC are eligible for one month banking for the electricity generated during the same calendar month. The Commission decides to continue the present practice of settlement on the basis of peak and normal hours as specified in Commission's order. However, they are eligible to utilize the same during the billing cycle (1 month) in the proportion to the energy generated during peak and normal hour period. The Commission decides that the banking facility shall not be available for third-party sale of wind energy and set off will be done in the 15 minute time block with open access consumer's consumption.

Considering the fact that the intra-State ABT and DSM mechanism has been adopted in the State, banking of energy for limited period also have financial impact on utility. Therefore, the Commission decides to levy banking charges in kind. Banking charges shall be adjusted in kind at 2% of energy banked.

#### **4.6 Purchase of Surplus Power from Wind Power Projects opting for Captive use and Third Party Sale under Open Access.**

In the discussion paper, it was proposed that in case of captive use of wind power (non-REC projects), the surplus power after one month's banking be purchased by the distribution licensee at the rate of 85% of the feed-in tariff declared by the Commission. Also, in case of third-party



sale of wind power (non-REC projects), the surplus power available after set off with open access consumer's consumption in the same 15 minute time block was proposed to be sold to the distribution licensee concerned at the rate of 85% of the feed-in tariff declared by the Commission.

#### ***Suggestions from Objectors***

GUVNL submitted to purchase surplus power at APPC only and can be considered for fulfilling the RPO.

#### ***Commission's Decision***

Quantum of surplus power available after setting off under captive use or third-party sale is uncertain and this could lead to uncertainty in planning for utilities for utilization of the same. Further, linking the tariff for purchase of surplus power with the fulfilment of utilities RPO will lead to implementation issues, and hence, the Commission decides not to link the same with the RPO.

The Commission clarifies that in case of wind power projects availing OA for captive use / third-party sale but not opting for REC, the surplus power after set off will be purchased by the distribution licensee at the rate of the Average Pooled Power Purchase Cost (APPC) of the year of the commissioning of the project as determined by the Commission.

### **4.7 Renewable Energy Certificates for Third-Party Sale and Captive Use of Wind Energy**

In the discussion paper, it was proposed that the power generated from wind power projects if wheeled to third-party or for captive use will be eligible for availing the Renewable Energy Certificates as per the qualifications criteria given in CERC (REC) Regulations and its subsequent amendments. Further, for such projects surplus power available after set off will be purchased by the distribution licensee at APPC applicable for that year.

#### ***Suggestions from Objectors***

GUVNL has submitted that CERC has modified the eligibility criteria through amendment dated 30.03.2016 and hence captive generators are not eligible for RECs. Another utility requested to

specify the APPC rate and sought clarification whether applicable rate would be APPC rate of that particular year in which the project is commissioned.

#### ***Commission's Decision***

The Commission has specified the concessional treatment available to the captive and third-party wind power projects. However, the captive and third-party wind energy projects for registering under the REC mechanism, in case they avail any concessional benefits are governed by the CERC REC Regulations and its amendments thereof and the same shall also be applicable to the wind projects commissioned in Gujarat.

Regarding banking for captive projects registered under REC, the Commission had clarified the issue through its order dated 07.01.2013. Under the Intra-State ABT implemented in the State of Gujarat from 05.04.2010, banking facility is not permissible to the CPP holders who set up the WTG under REC schemes. The WTGs registered under REC are entitled to set-off in 15 minutes' time block only.

In case of wind power projects availing OA for captive use / third-party sale and opting for REC, the surplus power after set off will be purchased by the distribution licensee at 85% of Average power procurement cost (APPC) of the year of commissioning of the project as determined by the Commission, which will remain unchanged throughout the life of plant. The APPC rate for the state will be determined by the Commission separately after receiving the data from utilities in this regard. The present practice of settlement of excess generation after set off in case of wind power projects availing OA for captive use / third- party sale will remain unchanged. The CGP set-up under REC mode and energy generated from it for sell to third party shall be liable to pay cross- subsidy surcharge of relevant year as decided by the Commission. Further such consumer shall also be liable to pay the additional surcharge over and above cross-subsidy surcharge.

#### **4.8 Security Deposit**

In order to assure GETCO about seriousness of project developer towards commissioning of the wind projects, the project developers are required to furnish bank guarantee of Rs 5 Lakh/MW as a security deposit to GETCO. In the discussion paper, it was proposed that, the time period for completion of the project capacities will be as recommended by the Commission in the earlier wind tariff order dated 08.08.2012. In case of delay in project commissioning beyond the prescribed period due to unforeseen reasons, GETCO may issue extensions on case-to-case basis.

### ***Suggestions from Objectors***

GUVNL requested to incorporate a provision of submission of bank guarantee / security deposit of Rs. 25 Lakh/MW at the time of signing of PPA with distribution licensee to demonstrate the sincerity in development of power project and to deliver power to power procurer as per the terms and conditions of PPA.

### ***Commission's Decision***

The Commission recognizes the fact that the wind energy generators have to show their commitments for utilization of infrastructure created by GETCO. As such, the Commission decides to retain the provision regarding furnishing of Bank Guarantee of Rs 5 Lakh/MW by the project developers to GETCO. With regard to submission of GUVNL, the Commission feels that it will result into increase in the expenses and hence GUVNL's request is not considered. Time periods allowed to the developers to complete their projects will be as under:

<b>MW</b>	<b>Period for commissioning the entire capacity</b>
1 MW to 100 MW	1.5 years from the date of allotment of transmission capacity
101 MW to 200 MW	2 years from the date of allotment of transmission capacity
201 MW to 400 MW	2.5 years from the date of allotment of transmission capacity
401 MW to 600 MW	3.5 years from the date of allotment of transmission capacity

The bank guarantee shall be encashed by GETCO if the project is not commissioned within a specified time period as given above,

Provided further that the developer shall commission at least 10% of the allotted capacity within one month of charging of the evacuation line. Failing this, the developer shall be liable to pay long term transmission charges for 10% of allotted capacity till such 10% of allotted capacity is commissioned.

In case of delay in commissioning of the project beyond the prescribed time period due to unforeseen reasons beyond the control of the project developer, the developer may approach GETCO for time limit extension approval.

#### 4.9 Other Issues

##### (i) Energy Accounting of Renewable Energy Attribute by the Wind Turbine Generators:

- a) In case the consumer does not take renewable attribute for meeting its RPO, energy generated by wind power project shall be set off against the consumption during the consumers billing cycle. Surplus power after giving set off shall be purchased by DISCOM at APPC of the year of commissioning of project and entire generation shall be credited to DISCOM's account for meeting RPO.
- b) In case the consumer takes renewable attribute of wind energy for meeting its RPO, energy accounting shall be based on 15 minutes' time block. Surplus power after giving set off shall be purchased by DISCOM at APPC of the year of commissioning of project. Surplus wind energy purchased by DISCOM shall be considered for meeting RPO of DISCOM.

##### (ii) Commissioning of WTG

Commissioning of WTG shall be done by the WTG owners in the presence of the representatives of the WTG, GEDA and the concerned distribution licensee in whose area the power is purchased by the licensee. Same procedure is applicable for WTGs set up for captive use and third party sale. The Commissioning certificate containing a confirmation about installation of ABT complaint meter must be signed by GEDA, DISCOM and WTG representatives. GEDA shall confirm that WTG owner has installed necessary equipments for scheduling and forecasting of the wind energy at WTG.

#### 5. Applicability of the Order

##### *Suggestions from Objectors*

GUVNL requested that the Commission may specifically mention that the new tariff and terms & conditions shall be applicable to those projects for which PPA will be signed and project will be commissioned subsequent to the effective date of new tariff order.

***Commission's Decision***

The Commission decides that this order shall come into force from the date of issue of this order. Therefore, the tariff and other commercial terms as determined by the Commission in this order shall be applicable to all such wind energy generators for which the PPAs would be signed in respect of WTGs to be installed and commissioned on or after the date of this order.

Sd/-  
[P.J. THAKKAR]  
MEMBER

Sd/-  
[K.M. SHRINGARPURE]  
MEMBER

Sd/-  
[ANAND KUMAR]  
CHAIRMAN

Place: Gandhinagar  
Date: 30/08/2016

## Annexure I

List of Stakeholders who have submitted written suggestions/objections on the Discussion Paper.

Sr. No	Name of Stakeholder
1	Adani Green Energy Limited
2	Powerica Limited
3	Wind Independent Power Producers Association (WIPPA)
4	Sembcorp Green Infra Limited
5	INOX Renewables Limited
6	GUVNL
7	SITAC
8	Re-Gen Power Tec Limited
9	Indian Wind Energy Association
10	Surat Municipal Corporation
11	Indian Wind Power Association
12	Ostro Energy Private Limited
13	BLP Energy Private Limited
14	GETCO
15	IL&FS energy development company Ltd.
16	Torrent Power Ltd.
17	Orange Renewable Power Pvt. Ltd.
18	CLP Wind Farms (India) Pvt. Ltd.
19	Gujarat Flurochemicals Limited
20	Indian Wind Turbine Manufacturers Association
21	Gujarat Wind Farms Limited
22	Energy & Petrochemicals Department
23	General Electric
24	Gujarat Industries Power Companies Ltd.

## Annexure II

List of stakeholders, who have attended the public hearing on 20 June 2016.

Sr. No	Name of Stakeholder
1	Adani Green Energy Limited
2	Powerica Limited
3	Wind Independent Power Producers Association (WIPPA)
4	Sembcorp Green Infra Limited
5	INOX Renewables Limited
6	GUVNL
7	SITAC
8	Re-Gen Power Tec Limited
9	Indian Wind Energy Association
10	Surat Municipal Corporation
11	Indian Wind Power Association
12	GETCO
13	Torrent Power Ltd.
14	Orange Renewable Power Pvt. Ltd.
15	Gujarat Energy Development Agency
16	Madhya Gujarat Vij Company Limited
17	Continuum Wind

Annexure III

Tariff Sheet

Tariff Calculations																										
Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Net Energy sold (lakh kWhs)	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	
Costs																										
O&M	9.90	10.47	11.06	11.70	12.37	13.07	13.82	14.61	15.45	16.33	17.27	18.25	19.30	20.40	21.57	22.80	24.11	25.49	26.94	28.49	30.11	31.84	33.66	35.58	37.62	
Depreciation (SLM)	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	43.05	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	
Interest on term loan	48.26	43.18	38.10	33.02	27.94	22.86	17.78	12.70	7.62	2.54	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Interest on working capital	1.42	1.38	1.34	1.31	1.27	1.23	1.20	1.16	1.13	1.10	0.78	0.80	0.82	0.84	0.86	0.89	0.91	0.94	0.97	1.00	1.03	1.07	1.10	1.14	1.18	
Return on Equity	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	
Tax on equity	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	5.51	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	8.94	
Total Cost (Rs lakh)	133.97	129.42	124.90	120.42	115.97	111.56	107.19	102.87	98.59	94.36	61.01	62.02	63.08	64.21	65.40	66.66	67.99	69.40	70.88	72.46	74.12	75.87	77.73	79.70	81.77	
Tariff (Rs/kWh)	6.24	6.03	5.82	5.61	5.40	5.20	4.99	4.79	4.59	4.40	2.84	2.89	2.94	2.99	3.05	3.11	3.17	3.23	3.30	3.38	3.45	3.54	3.62	3.71	3.81	
Levelized Fixed Tariff Calculations																										
Discount Rate	10.04%																									
Levelized Fixed Tariff (Rs / kWh)	4.72																									



Depreciation Benefit Calculations

Year	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Amount of book depreciation (Rs lakh)	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	32.47	1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Amount of accelerated depreciation (Rs lakh)	615.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net depreciation benefit (Rs lakh)	582.53	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-32.47	-1.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tax Benefit (Rs lakh)	201.61	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-11.24	-0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net energy Generation (lakh Units)	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46	21.46
Accelerated depreciation benefit per unit (Rs / kWh)	9.39	-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	-0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Levelised benefit of accelerated depreciation (Rs / kWh)	0.53																								