

---

BEFORE  
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY  
(NEPRA)

---

APPLICATION FOR  
A LICENSEE PROPOSED MODIFICATION  
OF  
GENERATION LICENCE

PURSUANT TO  
ENABLING PROVISIONS OF NEPRA ACT 1997, READ WITH ENABLING PROVISIONS OF  
RULES & REGULATIONS MADE THEREUNDER, INCLUDING  
THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY LICENSING (APPLICATION  
& MODIFICATION PROCEDURE) REGULATIONS & THE NATIONAL ELECTRIC POWER  
REGULATORY AUTHORITY LICENSING (GENERATION) RULES 2000

ON BEHALF OF

NASDA GREEN ENERGY (PRIVATE) LIMITED

FOR NEPRA'S APPROVAL OF MODIFICATION OF NASDA GREEN ENERGY (PRIVATE)  
LIMITED'S  
GENERATION LICENCE NO. WPGL/49/2017

RELATING TO A WIND POWER GENERATION FACILITY OF 50 MW  
LOCATED AT  
DEH KOHISTAN 7/3 AND 7/4 TAPO JUNGSHAHI, TALUKA AND DISTRICT THATTA, SINDH,  
PAKISTAN

DATED: 16 OCTOBER 2019

LEGAL & REGULATORY CONSULTANT

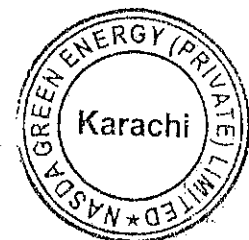
HAIDERMOTA & Co.

KARACHI OFFICE  
D-79, BLOCK 5, KDA SCHEME 5, CLIFTON  
KARACHI, PAKISTAN  
TEL: +92-21-111520000  
FAX: +92-21-35871054  
EMAIL: hmco@hmco.com.pk

APPLICANT / LICENSEE

NASDA GREEN ENERGY (PVT.) LTD.

PRINCIPAL OFFICE  
26-A SINDHI MUSLIM COOPERATIVE HOUSING  
SOCIETY, OFF SHARA-E-FAISAL ROAD  
KARACHI, PAKISTAN  
TEL: 021 34315191 - 4  
FAX: 021 34315129  
EMAIL: [muhammad.abdullah@soorty.com](mailto:muhammad.abdullah@soorty.com)





16 October 2019

**THE REGISTRAR,**  
National Electric Power Regulatory Authority,  
NEPRA Tower, Attaturk Avenue (East),  
G-5/1,  
Islamabad,  
Pakistan.

**SUBJECT: STATEMENTS OF AUTHORIZED REPRESENTATIVE, ON BEHALF OF NASDA GREEN ENERGY (PRIVATE) LIMITED, IN RESPECT OF AN APPLICATION FOR A PROPOSED MODIFICATION OF GENERATION LICENCE NO. WPGL/49/2017 RELATING TO 50 MW WIND POWER PROJECT LOCATED AT DISTRICT THATTA, SINDH, PAKISTAN**

I, SHEIKH MUHAMMAD ABDULLAH, holding C.N.I.C. No. 42401-7631806-1, being:

- (a) the COMPANY SECRETARY of NASDA GREEN ENERGY (PRIVATE) LIMITED (a company duly established and existing under the laws of Pakistan with its Principle Office located at 26-A Sindhi Muslim Cooperative Housing Society, off Sharah-e-Faisal, Karachi, (the Licensee); and
- (b) the duly authorized representative of the Licensee in terms of the authority and powers vested in and conferred on ME, Sheikh Muhammad Abdullah, *vide* the duly passed resolution(s) of the board of directors (the Board) of the dated 01 October 2019;

hereby, pursuant to the applicable laws of Pakistan, including the 'Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997' (the NEPRA Act) and the rules and regulations made thereunder (including regulation 10(2) of the 'National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999' and the 'National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000') (the **Applicable NEPRA Laws**) submit, on behalf of the Licensee, to the NATIONAL ELECTRIC POWER REGULATORY AUTHORITY (the Authority) an application (together with the documents attached thereto) (the **Generation Licence Modification Application**) relating to modification (the **Licensee Proposed Modification**) of the Licensee's generation Licence No. WPGL/49/2017 (the **Generation Licence**) and apply, on behalf of the Licensee, to the Authority for the Licensee Proposed Modification.

I, Sheikh Muhammad Abdullah, certify, on behalf of the Licensee, to the Authority that Generation Licence Modification Application has been prepared and submitted in conformity with the Applicable NEPRA Laws and undertake, on behalf of the Licensee, to the Authority to abide by the terms and provisions of the same. In addition, I, Sheikh Muhammad Abdullah, confirm, on behalf of the Licensee, to the Authority that the information provided in the Generation Licence Modification Application is true and correct to the best of MY, Sheikh Muhammad Abdullah's, knowledge.

5

**NASDA GREEN ENERGY (PVT) LIMITED.**

26-A, S.M.C.H.S. Off, Shahrak-e-Faisal, Karachi, 74400 Pakistan.

UAN: +92 21 111 111 735 T: +92 21 34315191 (4 Lines) F: +92 21 34315129

Email: muhammad.abdullah@soorty.com



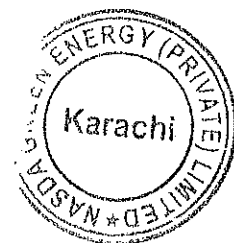
Further, I, Sheikh Muhammad Abdullah, on behalf of the Licensee, confirm to the Authority that the Generation Licence Modification Application is being submitted with the required generation Licence modification fee through a non-refundable bank draft/pay order in the amount of PKR 358,064/- (Pakistani Rupees Three hundred and fifty eight thousand and sixty four only) dated 16 October 2019 drawn in favour of the Authority.

Sincerely,

For and on behalf of:

NASDA GREEN ENERGY (PRIVATE) LIMITED  
Karachi

SHEIKH MUHAMMAD ABDULLAH  
COMPANY SECRETARY & AUTHORIZED REPRESENTATIVE



# NASDA

(A Company of SOORTY Group, Pakistan)

**EXTRACTS OF THE RESOLUTION PASSED BY THE BOARD OF DIRECTORS OF  
NASDA GREEN ENERGY PRIVATE LIMITED ON 01 OCTOBER 2019 AT 26-A,  
SINDHI MUSLIM COOPERATIVE HOUSING SOCIETY, OFF SHAHRAH-E-FAISAL,  
KARACHI**

IT WAS RESOLVED THAT:

Documents signing authorities for correspondence with Government Department / Authorities, Legal Councils, Insurance Brokers, Lenders, Technical Advisors, Financial & Tax Advisors, Auditors etc including but not limited to:

- National Electric Power Regulatory Authority (NEPRA)
- Alternative Energy Development Board (AEDB)
- Central Power Purchasing Agency (Guarantee) Limited (CPPA-G)
- National Transmission and Dispatch Company Limited (NTDCL)
- Energy Department, Government of Sindh (ED GoS)
- Land Utilization Department, Government of Sindh (LUD GoS)
- Taxation Authorities

will be as per following categories:

- o Category - A: All members of Category A are authorized to sign all correspondence with above mentioned parties including but not limited to contracts, agreements, letters, deeds, applications and any other relevant document SINGLY.
- o Category - B: - Both the members from category B are authorized to sign all the documents, contracts, agreements, letters, deeds, applications and any other relevant document JOINTLY.

Category A		
S. No.	Name	CNIC Number
1	Shahid Rashid Soorty - Director	42301-0911370-7
2	Nargis Rashid Soorty- Director	42301-7850250-7
3	Asad Shahid Soorty - Executive Director	42301-8541495-4

**CERTIFY TRUE COPY** For Nasda Green Energy (Pvt) Limited

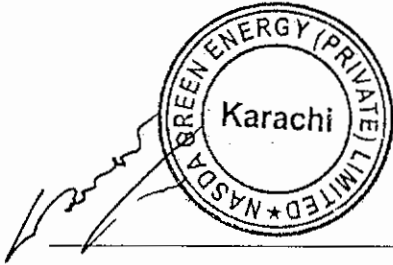
Company Secretary

**NASDA GREEN ENERGY (PVT) LIMITED.**

26-A, S.M.C.H.S. Off. Shahrah-e-Faisal, Karachi, 74400 Pakistan  
UAN: +92 21 111 111 735 T: +92 21 34315191 (4 Lines) F: +92 21 34315129  
Email: muhammad.abdulloh@soorty.com



Categories		
Category A		
S. No.	Name	CNIC Number
4	Abdul Aziz Panjwani	42201-0300853-9
5	Sheikh Muhammad Abdullah	42401-7631806-1
Category B		
1	Syed Ali Rizwan	42000-5084956-1
2	Waqas Ahmed	42101-2065600-9



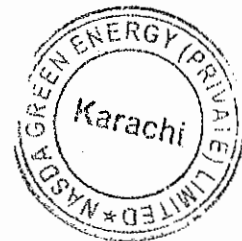
SHAHID RASHID SOORTY  
DIRECTOR

For Nasda Green Energy (Pvt) Limited

Company Secretary

**CERTIFY TRUE COPY**

CTC



---

**COPY OF BANK DRAFT/PAY ORDER**

---



Account Payee only

# HABIB METROPOLITAN BANK LTD.

Sindhi Muslim Society(Sub SQB)

Branch Code : 7

D.D No. 01604847

Stationery/Ref. No. 01604846

Date : 1 7 1 0 1 9

PKR \*\*\*358,064.00\*\*\*

On Demand Pay NATIONAL ELECTRIC POWER REGULATORY AUTHORITY Or Order

Rupees three hundred and fifty eight thousand sixty four only

Drawee Bank/Branch  
Habib Metropolitan Bank Ltd.  
Islamabad Branch (10)  
Islamabad

Please do not write below this line



*Ghaya Ahmed Qureshi*  
Signature  
Ghaya Ahmed Qureshi  
P.A # B-1195  
*MALIK AHMED TIAZ*  
Signature  
MALIK AHMED TIAZ  
P.A. # 516

⑈0 160484 7⑈06400 10⑈000000000 1 14 74 7 7⑈0 10⑈0000 35806400⑈



---

**SECTION 1**  
**INTRODUCTION TO LICENSEE & THE PROJECT**

---





## 1. INTRODUCTION TO LICENSEE & THE PROJECT

### 1.1 THE LICENSEE & PROJECT DEVELOPMENT BACKGROUND

1.1.1 NASDA GREEN ENERGY (PRIVATE) LIMITED (a company duly established and existing under the laws of Pakistan with its principle office located at 26-A Sindhi Muslim Cooperative Housing Society, off Sharah-e-Faisal, Karachi, Pakistan) (the **Licensee**), being the applicant under this application for licensee proposed modification to generation licence (this **Generation Licence Modification Application**), was set up and established in 2015, for the purposes of developing, setting up, implementing, constructing and operating of a 50MW wind power project (the **Project**) located at District Thatta Sindh, Pakistan (the **Site**).

1.1.2 The following supporting documents relating to the Licensee are attached herewith as follows:

- (a) ANNEXURE A (*Shareholding Pattern*);
- (b) ANNEXURE B (*Memorandum and Articles of Association*); and
- (c) ANNEXURE C (*Certificate of Incorporation*).

1.1.3 Key milestones relating to the developmental phase of the Project are noted below:

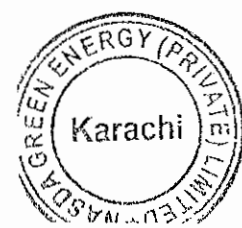
MILESTONE	DATE OF ACHIEVEMENT
Letter of Intent	July 30, 2015
Award of Generation License	August 3, 2017
Tariff Determination	November 19, 2018

### 1.2 THE GENERATION LICENCE

1.2.1 On August 3, 2017, the Licensee obtained a generation licence No. WPGL/49/2017 (the **Generation Licence**). A copy of the Generation Licence is attached herewith at ANNEXURE D1 (*Copy of Generation Licence*) for the Authority's reference.

### 1.3 TARIFF DETERMINATION

1.3.1 The Authority awarded its tariff determination to the Company on November 19, 2018 (Ref No. NEPRA/TRF-432/NGEPL-2018/18028-18030) (the **Tariff**



Determination). A copy of the Tariff Determination is attached herewith at ANNEXURE D2 (*Copy of Tariff Determination*) for the Authority's reference.

---

**SECTION 2**  
**BACKGROUND TO THIS GENERATION LICENCE**  
**MODIFICATION APPLICATION**

---



## 2. BACKGROUND TO THIS GENERATION LICENCE MODIFICATION APPLICATION

---

### 2.1 MISMATCH IN THE GENERATION LICENSE AND TARIFF DETERMINATION

2.1.1 On obtaining the Tariff Determination, it was observed that the following factors were not aligned in the Generation License and Tariff Determination:

- (i) Approved Capacity Factor;
- (ii) Anticipated Commercial Operations Date; and
- (iii) Term of the Generation License.

### 2.2 AVAILABLE CAPACITY FACTOR

2.2.1 It is highlighted that the Generation License states a net capacity factor of thirty-five percent (35%), however the Authority has granted its Tariff Determination to the Company on the basis of the net annual plant capacity factor of thirty-eight point fifty-one percent (38.51%).

### 2.3 ANTICIPATED COMMERCIAL OPERATIONS DATE

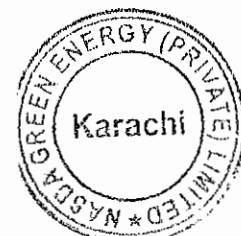
2.3.1 The Licensee has obtained its Generation License wherein the Authority has stated the anticipated Commercial Operations Date to be October 31, 2019. However, the same timeline is not aligned with the Tariff Determination – the Tariff Determination has allowed one (1) year for financial close and a construction period of fifteen (15) months which would result in the Commercial Operations Date to be around February 18, 2021.

### 2.4 TERM OF THE GENERATION LICENSE

2.4.1 It is highlighted that Generation License is for a term of twenty (20) years from Commercial Operations Date, however the Authority has granted its Tariff Determination for a term of twenty-five (25) years from Commercial Operations Date.

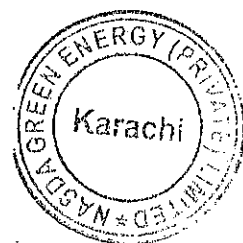
### 2.5 THIS APPLICATION FOR MODIFICATION OF GENERATION LICENCE

2.5.1 Based on the requirement to match the necessary regulatory consents (i.e. generation licence) with the Tariff Determination, the Licensee has prepared and submitted this Generation Licence Modification Application for modification of its Generation Licence to request a modification that aligns the factors stated in Section 2.1.1 – the text of such modification being expressly set out in Section 3 (*Text Of Proposed Generation Licence Modification*) (the **Proposed Generation Licence Modification**).



**2.6 SUBMISSION**

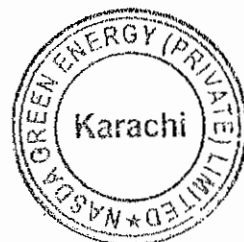
- 2.6.1 PURSUANT TO the applicable laws of Pakistan, including the NEPRA Act and the rules and regulations made thereunder (including regulation 10(2) of the 'National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999' and the 'National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000'): NASDA GREEN ENERGY (PRIVATE) LIMITED HEREBY SUBMITS, for the Authority's kind and gracious consideration, this Generation Licence Modification Application for alignment of terms with the Tariff Determination.
- 2.6.2 This Generation Licence Modification Application is submitted in triplicate.
- 2.6.3 This Generation Licence Modification Application is being submitted with the required generation licence modification fee through a non-refundable bank draft/pay order in the amount of PKR 358,064 (Pakistani Rupees Three hundred and fifty eight thousand and sixty four only), 2019 drawn in favour of the Authority.



---

**SECTION 3**  
**TEXT OF PROPOSED GENERATION LICENCE**  
**MODIFICATION**

---



**3. TEXT OF PROPOSED GENERATION LICENCE MODIFICATION**

**3.1 THE PROPOSED TEXT**

3.1.1 In view of the matters set out in this Generation Licence Modification Application, including, without limitation, to ensure that the terms of the Generation Licence cater to ensure its alignment with the Tariff Determination, the Proposed Generation Licence Modification:

(i) Section E(v) of the Generation Licence should read as follows:

*“ ..... According to the information provided by NGEPL, its generation facility/Wind Power Plant/Wind Farm will achieve COD in fifteen (15) months after its financial close achievement and will have a useful life of more than twenty five (25) years from its COD...NGEPL has requested that the term of the proposed generation license may be fixed as twenty five (25) years...the Authority fixes the term of the generation license to twenty five (25) years from COD of the project.”*

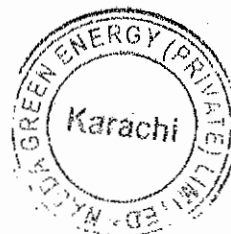
(ii) Under Article 4 of the Generation Licence (*Term of Licence*) the words “twenty (20) years” shall be replaced with the words “twenty-five (25) years”.

(iii) Part (D) (i) of Schedule I to the Generation License should read as follows:

**(D). Other Details**

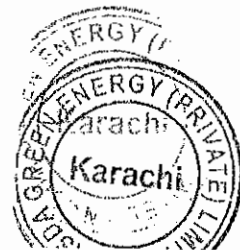
(i).	<i>COD of the generation facility/Wind Power Plan/Wind Farm, fifteen (15) months from financial close achievement</i>	<i>February 18, 2021</i>
------	---	--------------------------

(iv) Schedule II of the Generation Licence shall be replaced with the schedule attached herewith as ANNEXURE D3 (Schedule-II to the Generation License) for the Authority’s reference.



**SECTION 4**  
**A STATEMENT OF THE REASONS IN SUPPORT OF**  
**THE PROPOSED GENERATION LICENCE**  
**MODIFICATION**

---

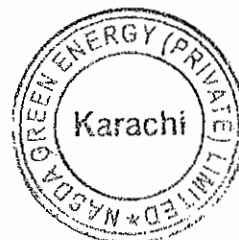




#### 4. A STATEMENT OF THE REASONS IN SUPPORT OF THE PROPOSED GENERATION LICENCE MODIFICATION

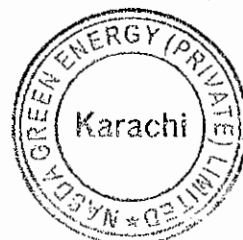
##### 4.1 CONSIDERATIONS IN RESPECT OF MISMATCH OF TERMS OF GENERATION LICENCE AND TARIFF DETERMINATION

- 4.1.1 It is re-emphasized that the modifications requested in this Generation Licence Modification Application are merely to match the terms of the Tariff Determination.



**SECTION 5**  
**A STATEMENT OF IMPACT ON THE TARIFF,**  
**QUALITY OF SERVICE AND PERFORMANCE BY**  
**THE LICENSEE OF ITS OBLIGATIONS UNDER THE**  
**GENERATION LICENCE**

---



**5. A STATEMENT OF IMPACT ON THE TARIFF, QUALITY OF SERVICE AND PERFORMANCE BY THE LICENSEE OF ITS OBLIGATIONS UNDER THE GENERATION LICENCE**

---

**5.1 IMPACT ON TARIFF**

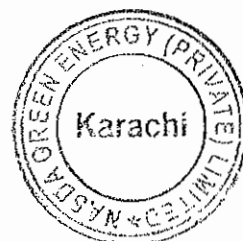
5.1.1 The Authority is highlighted that the Licensee is submitting before the Authority, for its kind consideration and approval, (in accordance with the applicable laws of Pakistan (including the NEPRA Act and the rules and regulations made thereunder) this Modification Application in order to align the terms which the Authority has granted to the Licensee pursuant to the Tariff Determination.

**5.2 IMPACT ON QUALITY OF SERVICE & PERFORMANCE**

5.2.1 The Licensee confirms that the Licensee's quality of service and its performance under the Generation Licence will not be affected due to such application as the same is merely to cater to the misalignment of the terms in the two documents granted by the Authority.

**5.3 IMPACT ON THE OBLIGATIONS OF THE LICENSEE UNDER THE LICENCE**

5.3.1 The approval of the Proposed Generation Licence Modification would enable the Licensee in fulfilling its obligations under the Tariff Determination. The Authority is highlighted that the Licensee has to-date always strictly complied with the terms of the Generation Licence and commits to continue to do the same.



## 6. CONCLUSION

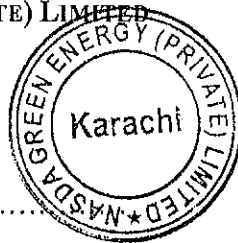
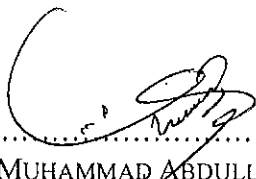
### 6.1 CONCLUSION

- 6.1.1 In light of the submissions, the relevant analysis and information contained in this Generation Licence Modification Application, along with the Annexures attached hereto, this Generation Licence Modification Application is submitted (pursuant to the applicable laws of Pakistan, including the 'Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997' and the rules and regulations made thereunder (including regulation 10(2) of the 'National Electric Power Regulatory Authority Licensing (Application & Modification Procedure) Regulations, 1999' and the 'National Electric Power Regulatory Authority Licensing (Generation) Rules, 2000')) for the Authority's kind consideration and for its approval of the Proposed Generation Licence Modification.

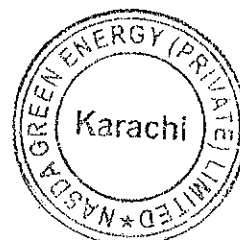
Respectfully submitted,

FOR AND ON BEHALF OF:

**NASDA GREEN ENERGY (PRIVATE) LIMITED**



.....  
SHEIKH MUHAMMAD ABDULLAH  
AUTHORIZED REPRESENTATIVE OF  
NASDA GREEN ENERGY (PRIVATE) LIMITED



## SCHEDULE-II

The Total Installed/Gross ISO Capacity (MW), Total Annual Full Load Hours, Average Wind Turbine Generator (WTG) Availability, Total Gross Generation of the Generation Facility/Wind Farm (in GWh), Array & Miscellaneous Losses (GWh), Availability Losses (GWh), Balance of Plant Losses (GWh) Annual Energy Generation (GWh) and Net Capacity Factor of the Generation Facility /Wind Farm of Licensee are given in this Schedule

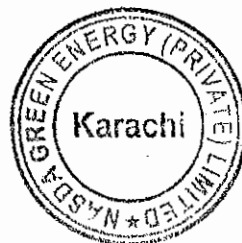


**SCHEDULE-II**

(1).	Total Installed Gross ISO Capacity of the Generation Facility /Wind Farm (MW/GWh)	50.00 MW
(2).	Total Annual Full Load Hours	3066 Hrs
(3).	Average Wind Turbine Generator (WTG) Availability	97.0 %
(4).	Total Gross Generation of the Generation Facility/Wind Farm (in GWh)	190.24
(5).	Array & Miscellaneous Losses (GWh)	12.81
(6).	Availability Losses (GWh)	5.32
(7).	Balance of Plant Losses (GWh)	3.44
(8).	Annual Energy Generation (25 years equivalent Net AEP in GWh)	168.67
(9).	Net Capacity Factor	38.51 %

Note
------

All the above figures are indicative as provided by the Licensee/NGEPL. The net energy available to power purchaser for dispatch will be determined through procedures contained in the energy purchase agreement.



National Electric Power Regulatory Authority  
(NEPRA)  
Islamabad – Pakistan

**GENERATION LICENCE**

**No. WPGL/49/2017**

In exercise of the Powers conferred upon under Section-15 of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, the Authority hereby grants the Generation Licence to:

**NASDA GREEN ENERGY (PVT.) LIMITED**

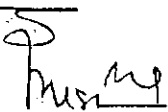
Incorporated Under Section-32 of the Companies Ordinance 1984 (XLVII of 1984) Having Corporate Universal Identification No. 0093926, Dated June 11, 2015

**for its Generation Facility/Wind Farm/Wind Power Plant Located at Deh Kohistan 7/3 & 7/4 Tapo Jungshahi, Taluka & District Thatta in the Province of Sindh**

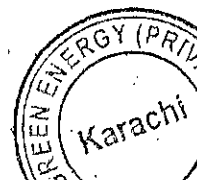
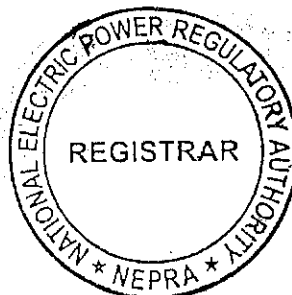
(Total Installed Capacity: 50.00 MW Gross ISO)

to engage in generation business subject to and in accordance with the Articles of this Licence.

Given under my hand this on 03<sup>rd</sup> day of August Two Thousand & Seventeen and expires on 30<sup>th</sup> day of October Two Thousand & Thirty Nine.

  
03 08 17

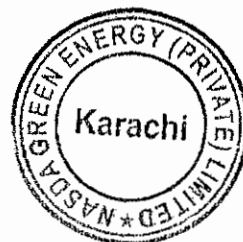
Registrar



---

**ANNEXURE D2**  
**COPY OF TARIFF DETERMINATION**

---







Registrar

**National Electric Power Regulatory Authority**  
**Islamic Republic of Pakistan**

NEPRA Tower, Attaturk Avenue (East), G-5/1, Islamabad.  
Ph: +92-51-9206500, Fax: +92-51-2600026  
Web: www.nepra.org.pk, E-mail: registrar@nepra.org.pk

No. NEPRA/TRF-432/NGEPL-2018/18028-18030  
November 19, 2018

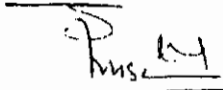
**Subject: Determination of the National Electric Power Regulatory Authority in the matter of Tariff Petition filed by NASDA Green Energy (Pvt.) Limited for Determination of Reference Generation Tariff in respect of 50 MW Wind Power Project [Case # NEPRA/TRF-432/NGEPL-2018]**

Dear Sir,

Please find enclosed herewith the subject Determination of the Authority along with Annexure-I & II (27 pages) in Case No. NEPRA/TRF-432/NGEPL-2018.

2. The Determination is being intimated to the Federal Government for the purpose of notification in the official gazette pursuant to Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.
3. The Order part along with Annexure-I & II of the Authority's Determination are to be notified in the official Gazette.

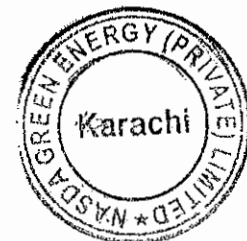
Enclosure: As above

  
19 11 18  
( Syed Safer Hussain )

Secretary  
Ministry of Energy (Power Division)  
'A' Block, Pak Secretariat  
Islamabad

CC:

1. Secretary, Cabinet Division, Cabinet Secretariat, Islamabad.
2. Secretary, Ministry of Finance, 'Q' Block, Pak Secretariat, Islamabad.





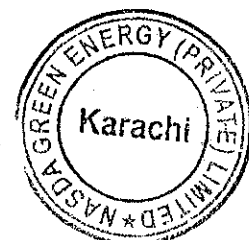
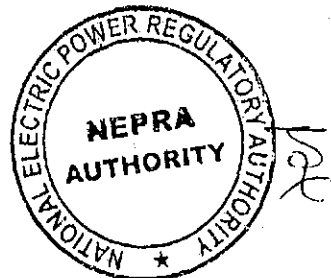
**DETERMINATION OF THE NATIONAL ELECTRIC POWER REGULATORY AUTHORITY IN THE  
MATTER OF TARIFF PETITION FILED BY NASDA GREEN ENERGY (PVT) LIMITED FOR  
DETERMINATION OF REFERENCE GENERATION TARIFF IN RESPECT OF  
50 MW WIND POWER PROJECT**

1. NASDA Green Energy (Pvt.) Limited ("NGEPL" or "the petitioner" or "the company/ project company") vide its letter dated December 27, 2017 filed a tariff petition before National Electric Power Regulatory Authority ("NEPRA" or the Authority") under the Regulation of Generation, Transmission and Distribution of Electric Power Act 1997 ("NEPRA Act") and NEPRA (Tariff Standards & Procedure) Rules, 1998 for determination of reference generation tariff in respect of its 50 MW wind power project ("the project") envisaged to be set up at Jhimpir, District Thatta, Sindh. The petitioner has requested for the approval of levelized tariff of US Cents 6.9056/kWh (Rs. 7.2509/kWh) over the tariff control period of 25 years.

**SUBMISSIONS OF THE PETITIONER**

2. The petitioner submitted that it is a company registered under the laws of Pakistan. Letter of Intent ("LOI") has been issued by Directorate of Alternative Energy, Government of Sindh ("GOS") on July 30, 2015 for establishing a 50 MW wind power generation project. On January 15, 2018, the validity of the said LOI was extended by GOS up to August 18, 2018.
3. NGEPL also submitted the minutes of the meeting of Panel of Experts ("POE") of GOS dated November 7, 2017 which was conducted to review the feasibility study submitted by NGEPL. In that meeting POE approved the feasibility study of the project and advised the project company for further perusal of tariff and generation license. The generation license was issued by NEPRA to NGEPL on August 3, 2017.
4. Summary of the key information provided by the petitioner is as follows:

Project company	:	NASDA Green Energy (Pvt.) Ltd
Sponsors	:	Soorty Enterprises (Pvt.) Ltd. and Individuals of Soorty Family
Capacity	:	50 MW
Project location	:	Jhimpir, District Thatta, Sindh

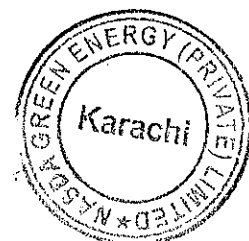
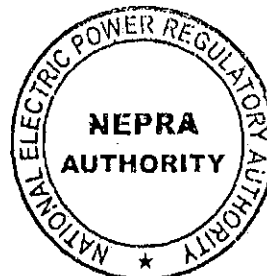




Land area	:	360 acres (allocated by GOS)	
Concession period	:	25 years from Commercial Operations Date	
Power purchaser	:	Central Power Purchasing Agency Guarantee Ltd.	
Wind Turbine	:	Siemens Gamesa Renewable Energy	
Model	:	G 114-2.0	
Plant capacity factor	:	38%	
Annual energy generation	:	166.440 GWh	
EPC contractor	:	Hydrochina Corporation	
<b>Project cost</b>		<b>USD in millions</b>	
EPC cost	:	78.000	
Project Development, Non EPC and Land Cost	:	3.830	
Duties and taxes	:	1.030	
Insurance during construction	:	0.550	
Financial Charges	:	1.760	
Interest during construction	:	2.760	
<b>Total project cost</b>	:	<b>87.930</b>	
Financing structure	:	Debt: 80% : Equity: 20%	
Debt composition	:	50% Local and 50% foreign loan	
Interest rate	:	SBP facility - Fixed rate (2%) + 1.75%	
	:	Foreign Loan- 3 month LIBOR (1.81%) + 4.5%	
Debt repayment period	:	Local loan 10 years and foreign loan 13 years	
Return on equity	:	15% IRR based	
Operations cost	:	USD 1.90 million per annum	
Insurance cost	:	USD 0.39 million per annum	
		<b>PKR/kWh</b>	<b>USD/kWh</b>
<b>Levelized Tariff</b>	:	7.2509	6.9056
Exchange rate	:	1 USD = PKR 105	

**PROCEEDINGS:**

5. The Authority considered the tariff petition and admitted the same for further processing. Notice of Admission/Hearing containing salient features of the petition, hearing schedule and issues framed for hearing was published in two national daily newspapers on March 19, 2018. Through





the said notice, NEPRA invited comments and intervention requests from the interested parties within fourteen (14) days of publication of notice. Tariff petition and Notice of Admission/Hearing were also published on NEPRA's website for information of general public. Individual Notices of hearing were also sent to the stakeholders, considered to be relevant, and the petitioner on March 20, 2018 for participation in the proceedings.

6. The hearing on the subject matter was held on April 10, 2018 (Tuesday) at 11:45 A.M. at NEPRA Tower, Islamabad, which was attended by a large number of participants including the petitioner, representatives of National Transmission & Despatch Co. Ltd. ("NTDCL"), GOS etc.
7. In response to Notice of Admission/Hearing, comments were received from Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) dated March 27, 2018 and Mr. Azhar Azim dated Mar 26, 2018 whereas no intervention request was received from any party. Mr. Azhar Azim in his comments supported the development of the petitioner's project offering lower tariff compared to the average electricity price of Rs.15/kWh (approx.) currently being charged to end electricity consumers. The comments of CPPA-G are discussed in the relevant paragraphs of this determination.

**ISSUES FRAMED:**

8. Following is the list of issues that were framed by the Authority for the hearing:
  - i. Whether the details provided for EPC cost are sufficient and whether the claimed EPC cost is competitive and comparative and based on the firm and final agreement(s)? and
  - ii. Whether the NEPRA (Selection of EPC Contractor by IPPs) Guidelines, 2017 have been fully complied with?
  - iii. Whether the details provided for Non-EPC cost are sufficient and claimed Non-EPC cost is justified? Also provide justification for land requirement as claimed by the petitioner.
  - iv. Whether the claimed annual energy generation and corresponding plant capacity factor are reasonable and justified? And
  - v. Whether the petitioner's proposed wind turbine technology satisfies the international standards of quality and operation?





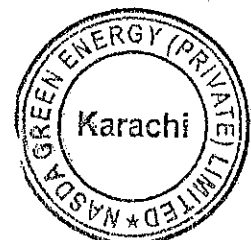
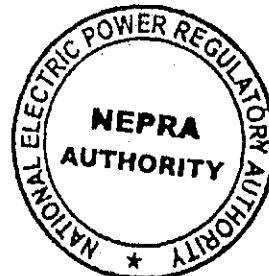
- vi. Whether the claimed O&M costs are justified? Provide rationale of claiming foreign & local O&M cost.
  - vii. Whether the claimed insurance during operation cost is justified?
  - viii. Whether the claimed return on equity is justified?
  - ix. Whether the claimed financing/debt terms are justified?
  - x. Whether the claimed construction period is justified?
  - xi. Any other issue with the approval of the Authority.
9. The issue wise submissions of the petitioner and the Authority's findings and decision thereon are as under:

**Whether the details provided for EPC cost are sufficient and whether the claimed EPC cost is competitive and comparative and based on the firm and final agreement(s)? And Whether the NEPRA (Selection of EPC Contractor by IPPs) Guidelines, 2017 have been fully complied with?**

10. The petitioner has claimed USD 78.000 million on account of Engineering, Procurement and Construction ("EPC") cost in its tariff petition. In this regard the petitioner has submitted copies of EPC contracts signed on December 11, 2017. The breakup of the EPC cost as given in the EPC contract and submitted during the hearing is given hereunder:

EPC cost	USD Million
Offshore contract	67.000
Onshore contract	11.000
<b>Total</b>	<b>78.000</b>

11. In its petition, NGEPL submitted that it adopted an effective and efficient bidding process for procuring the services of EPC contractor at the most competitive prices. The petitioner submitted that based on thorough due diligence and following an intense negotiations process with the EPC contractors, the project company shortlisted Hydrochina International Engineering Company Limited with Gamesa as the technology for the project. NEPRA vide letter dated May 11, 2018 directed NGEPL to submit the complete documents related to bidding process followed by the project company for the selection of the EPC contractor. In response, the petitioner submitted the required documents with respect to the bidding process vide letter dated May



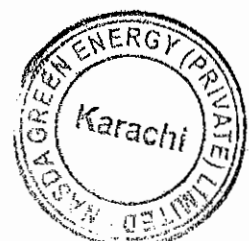


31, 2018. In the said letter the petitioner informed that Request for Proposal ("RFP") was issued to various EPC contractors on April 13, 2016 and the potential bidders were requested to submit their bids by or before May 12, 2016. In response, following EPC contractors submitted their bids:

- a) Nordex Acciona Wind Power
- b) Hydro China International
- c) Sany Heavy Energy Machinery Limited
- d) Shandong Swiss Electric Company Limited
- e) Orient Energy System

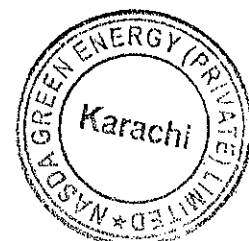
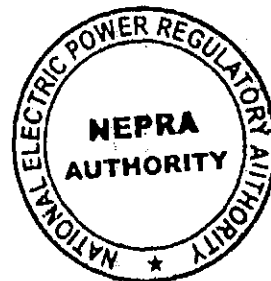
12. The petitioner submitted that the bid evaluation process was conducted by its technical consultant along with project development team of the company. All the received bids were critically evaluated based on various, technical, commercial and financial parameters. According to the evaluation matrix, M/s Hydrochina International was selected as EPC contractor with overall price of USD 84 million. The petitioner further submitted that NEPRA announced benchmark tariff for wind power projects on January 27, 2017. For filing petition under cost plus mode, NGEPL submitted that it renegotiated the EPC price to the level of USD 78 million with the selected EPC contractor to bring that in line with the benchmark tariff. Further, the WTG having hub height of 93m was selected as opposed to previously offered 80m to increase the energy output. In its petition, NGEPL submitted that the Offshore Contract was signed with M/s Power Construction Corporation of China Limited on December 11, 2017 which includes procurement and supply of wind turbine generators, electrical and mechanical equipment outside Pakistan. The Onshore Contract was signed with M/s Hydrochina International Engineering Company Limited on December 11, 2017 which includes civil works, erection, commissioning, testing, etc. The EPC contractor will install 25 x G114-2.0 selected WTGs at 93 meter hub height for the project. The petitioner submitted that since it has already selected EPC contractor for the project in the year 2016, therefore, NEPRA (Selection of Engineering, Procurement and Construction Contractor by Independent Power Producers) Guidelines, 2017 dated May 19, 2017 are not applicable in the instant case.

13. To evaluate the EPC cost claim of NGEPL, the Authority has considered the latest available EPC cost data in different parts of the world. The information given in the reports published by



International Renewable Energy Agency ("IRENA"), Bloomberg and other sources has been relied upon for this purpose. Furthermore, the tariff determinations approved by the regulators of countries in different regions have also been studied. The costs allowed by the Authority in previously determined wind power projects were also examined. After analysing all this information, the Authority is of the view that EPC cost of USD 78.000 million as claimed by NGEPL is on the higher side. The process of selection of contractors followed by the petitioner may have been transparent; however, the same has not yielded prices which can be considered competitive and comparative. The considerations of the Authority for the assessment of the EPC costs to be allowed to the petitioner are given in the following paragraph.

14. It was noted that the average wind turbine prices across most of the countries were below USD 1 million per MW in 2017. The most updated reports provide that average global cost of wind turbines for the contracts signed in 1<sup>st</sup> Half of 2018 have fallen to around USD 0.85 million per MW. Beside turbine cost, the absolute amount and proportion of other components that constitute the total EPC cost as given in the referred reports was also analysed. EPC costs in China and India were also checked and found lowest in the world due to their local manufacturing, low cost of land and labour etc. For instance, there are states in India where the total EPC cost of even less than USD 0.80 million per MW has been currently allowed by their respective regulators. However, the Authority is of the view that the cases of any particular country cannot be made exact reference for Pakistan owing to differences in market conditions, local manufacturing bases, tariff regimes, performance targets and other technological and economic factors. The trend of decrease in EPC prices over last couple of years and reasons thereof were also examined. The competition among WTG suppliers has been reported as the primary factor for the decline in turbine prices and corresponding EPC cost of wind power projects. The variations in the cost of turbine having different hub heights, rotor diameters, nameplate capacity, origin of manufacturing were also analysed. The differences in the civil cost part of the project due to variations in the number and size of the turbines were also considered. The Authority further noted that margins for EPC contractor, transportation costs, level of performance being approved in this determination etc. should also be taken into account to set the EPC cost. After detailed analysis of the available information and factoring in all the aforesaid factors, the Authority has decided to approve the EPC cost of NGEPL as USD 57.940 million.





15. The allowed EPC cost is the maximum limit on overall basis. Applicable foreign portion of this cost shall be allowed variations at Commercial Operations Date ("COD") due to change in PKR/USD parity during the allowed construction period, on production of authentic documentary evidence to the satisfaction of the Authority.

**Whether the details provided for Non-EPC cost are sufficient and claimed Non-EPC cost is justified? Also provide justification for land requirement as claimed by the petitioner.**

16. The petitioner has claimed USD 9.930 million on account of non-EPC cost. Detail of non-EPC cost provided by the petitioner is hereunder:

Non-EPC Cost	(USD million )
Project development Cost, Non-EPC & land cost	3.830
Duties and taxes	1.030
Insurance during construction	0.550
Financial fee and charges	1.760
Interest during construction	2.760
<b>Total Non-EPC Cost</b>	<b>9.930</b>

**Project Development Cost, Non-EPC & Land Cost**

17. The petitioner has claimed Project Development Cost ("PDC") of USD 1.740 million. In its petition and during the hearing, the petitioner submitted that this claim includes the cost of feasibility and other studies, project management expenses, fees in relation to advisors of the project and contingencies. Non-EPC cost of USD 1.390 million has been claimed which includes cost of met mast and its O&M, administrative costs, fixed assets and office expenses, funding cost of Sindh Sales Tax etc. Land lease and its development cost of USD 0.7 million has been claimed for 360 acres of land. The petitioner submitted that claimed land development cost includes the expenses of housing colony which shall accommodate approximately 25 employees / personnel of owner's engineer.
18. The petitioner submitted that the land lease for 360 acres has been signed with GOS on June 05, 2017. The petitioner has submitted the agreement of lease as per which it has already paid an amount of Rs. 10.8 million for the first 10 years lease.







19. The Authority has noted that PDC (inclusive of non-EPC and land cost) of around USD 3.5 million had been allowed in the earlier tariff cases of wind power projects. The Authority also referred the recent tariff cases of solar power projects of comparable size where the maximum PDC to the tune of USD 1.782 million has been allowed. Considering these details while accounting for the difference in construction period between solar and wind power projects, the Authority has decided to allow USD 2.5 million on account of PDC (inclusive of Non EPC and Land cost) to the petitioner. This cost shall be adjusted at actual, up to the maximum allowed cost, based on production of verifiable documents at the time of COD.

#### Duties and Taxes

20. The petitioner has claimed taxes & duties of USD 1.034 million. The petitioner submitted that Sindh Infrastructure Development Surcharge @ 1.15% of the imports for the project has been assumed. The petitioner further submitted that custom duty, sales tax and advance income tax have not been assumed in the petition and requested to allow/adjust at actual at COD.

21. The Authority noted that it has been allowing only those duties and taxes which are directly imposed on the petitioner and not on the third party, being non-transferable and non-reimbursable nature up to commencement of operation at COD stage on actual upon production of verifiable documentary evidences to the satisfaction of the Authority. The same treatment is allowed for NGEPL also. Doing so, impact of such duties/taxes has not been taken into account in the reference tariff and the same shall be adjusted at the time of COD.

#### Insurance During Construction

22. The petitioner has claimed USD 0.550 million on account of insurance during construction cost based on 0.70% of EPC cost plus custom duties. Following insurance coverage has been indicated by the petitioner as required by the lenders during the construction period:

- a. Construction all risk insurances (CAR)
- b. CAR delay in start-up insurance
- c. Terrorism insurance
- d. Marine and inland transit insurance
- e. Marine – delay-in start-up insurance





f. Comprehensive general liability

23. The Authority has analysed the available data with respect to during construction insurance incurred by a number of wind power projects that have achieved COD. It has also been noted that in the recent tariff cases of solar power projects, the Authority has allowed pre-COD insurance at the maximum rate of 0.50% of the approved EPC cost. Based on these considerations, the Authority has decided to allow insurance during construction to the maximum of 0.5% of the approved EPC cost for the project as well which works out to be around USD 0.290 million. Insurance during construction shall be adjusted at actual, subject to allowed amount as maximum limit, at the time of COD on production of authentic documentary evidence to the satisfaction of the Authority.

**Financial Fee & Charges**

24. The petitioner has claimed USD 1.760 million on account of financial charges and submitted that the claimed amount includes lenders up-front fee, lenders advisors & agents charges, commitment fee, management fee, charges related to various Letter of Credit ("LC") to be established in favour of various contracting parties, fees payable and stamp duty applicable on the financing documents, agency fee, security trustee fee, LC commitment fee/charges for EPC, commitment fee and other financing fees cost and charges. The petitioner submitted that keeping in view the deteriorating country risk profile of the country and prevailing circular debt issue, higher financing cost is required to be incurred for obtaining financing for the project.

25. It was noted that in earlier tariff determinations for wind power projects, the Authority had allowed financial fee & charges at the rate of 3% of the debt portion of capital expenditures (EPC, PDC, pre-COD insurance). In recent cost plus tariff determinations of solar power projects, financial fee & charges at the rate of 2.5% of the debt portion of capital expenditures has been allowed. Considering the recent standards, the Authority has decided to approve financing fee and charges with the cap of 2.5% of the allowed debt portion of the approved capital cost as claimed by NGEPL. Accordingly, the allowed amount under this head works out to be around USD 1.215 million. Financing charges shall be adjusted at actual, subject to allowed amount as maximum limit, at the time of COD on production of authentic documentary evidences to the satisfaction of the Authority.



**Interest During Construction (IDC)**

26. The petitioner has claimed interest during construction of USD 2.760 million for 16 month construction period which has been calculated at State Bank of Pakistan ("SBP") financing rate of 2% plus a spread of 1.75% for local financing and at 3-month LIBOR (1.81%) plus a spread of 4.5% for foreign loan. The petitioner submitted that actual IDC, however, shall be subject to change in base rate, funding requirement (drawdowns) of the project during the construction period, changes in project cost including changes due to taxes and duties, and variations in PKR/USD exchange rate. The loan repayment period of ten years for local loan and thirteen years for foreign loan has been claimed by the petitioner. The terms of financing as well as period for construction being approved in this determination are discussed in the ensuing relevant sections. Based on the approved financing terms, construction period, capital cost including financing fee and charges while considering notional drawdowns of 20% in each quarter, the IDC works out to be USD 1.961 million which is hereby approved.

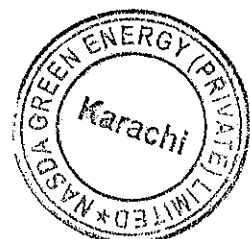
27. Recapitulating the above, the approved project cost under various heads is given hereunder:

Project Cost	(USD million)
EPC Cost	57.940
Project Development Cost	2.500
Insurance during construction	0.290
Financing Fee & Charges	1.215
Interest During Construction	1.961
<b>Total</b>	<b>63.906</b>

**Whether the claimed annual energy generation and corresponding plant capacity factor are reasonable and justified? And whether the petitioner's proposed wind turbine technology satisfies the international standards of quality and operation?**

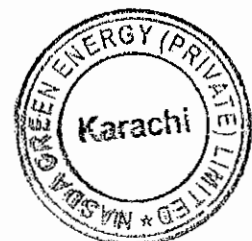
28. The petitioner submitted the following technical parameters in this regard:

Project capacity	50 MW
Annual power generation	166,440 MWh
Net capacity factor	38%
Hub Height	93m
Rotor Diameter	114m
Name plate capacity (Each Turbine)	2 MW





29. The petitioner has claimed annual energy production of 166.440 GWh and corresponding net plant capacity factor of 38%. The petitioner submitted Wind Resource and Energy Yield Assessment Report ("Energy Report") conducted by the technical consultant hired by NGEPL. During the hearing, the petitioner submitted that the project has collected wind climate data from a Ground Measuring Station installed at the project site according to international standards. The petitioner further submitted that the selected WTG is type certified by accredited agency namely Det Norske Veritas (DNV) laboratory against the site conditions and EBOP is IEC certified against relevant standards and conforms to NTDC specifications.
30. To assess this parameter of tariff, the Authority has analysed the data of energy yields of currently operational wind power plants in the country. The data of energy yields in different regions of the world and their trend in last couple of years has also been reviewed. It has been noted that worldwide, the capacity factors have improved as new machines are yielding better energy output within a given wind resource regime. These improvements have also been noted while comparing the energy production of old and newly commissioned wind power projects in Jhimpir region. It is found that the primary reason of these better results has been the change in turbine design through improvement in hub height, nameplate capacity and especially the enhancement in rotor diameters. For NGEPL also, it has been found that the mentioned three parameters are better than the turbines installed by the earlier wind power projects which are under operation in the country. Keeping in view these considerations while comprehensively analysing the information with respect to wind resource, location, technology etc. the Authority understands that the net annual plant capacity factor as claimed by the petitioner is quite on the lower side. The Authority is of the view that the energy numbers provided in the Energy Report at each probability level are quite conservative. As per the analysis of the Authority, it is considered that there exists high likelihood that the project can comfortably achieve yield better than given in the Energy Report even when compared with energy numbers at P50 level.
31. The Authority also noted the recent tariffs of three wind power projects were approved based on capacity factor results as assessed by the Authority. However, those project companies filed review motions primarily objecting the capacity factor approved in those determinations. In addition, the financiers such as Asian Development Bank and International Finance Corporation approached the Authority stating that it may not be viable for them to finance wind power



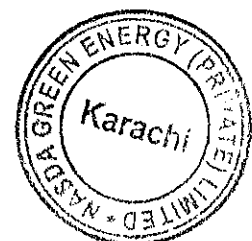
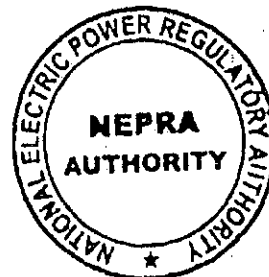
projects on the basis as adopted by NEPRA to assess capacity factor. They requested the Authority that tariff of wind power projects should be set on a good probability level, preferably as given in their Energy Reports. They further submitted that the tariffs of wind power projects throughout the world are set on energy yield having higher possibility, mainly for financing purpose.

32. In view of these considerations and primarily to ensure the bankability of the project, the Authority has decided to set the tariff of NGEPL at net annual plant capacity factor of 38.51%. However, keeping in view the assessed potential of higher generation, the Authority has decided to approve the following sharing mechanism:

<u>Net annual plant capacity factor</u>	<u>% of prevalent tariff allowed to power producer</u>
Above 38.51% up to 40.51%	5%
Above 40.51% up to 42.51%	10%
Above 42.51% up to 44.51%	20%
Above 44.51% up to 46.51%	40%
Above 46.51% up to 48.51%	80%
Above 48.51%	100%

**Whether the claimed O&M costs are justified? Provide rationale of claiming foreign & local O&M cost.**

33. The petitioner has claimed O&M cost of USD 1.90 million per annum i.e. USD 38,000 per MW per annum. The petitioner submitted the O&M contract for the initial 2 years (i.e. warranty period) signed with Hydrochina International Engineering Company Ltd. on December 11, 2017. In its petition and during the hearing, NGEL submitted that the claimed O&M includes cost of services rendered by the O&M operator, spare parts and related cost for routine maintenance. It also includes cost of administrative expense, security expenses, human resources, local general stores, utilities, land lease, corporate, audit & advisory fees, etc. The petitioner submitted that local portion of O&M cost is 45.75% and foreign portion is 54.25%.
34. To evaluate the O&M cost claim of NGEPL, the Authority has considered the latest available O&M cost data in different parts of the world. The information given in the reports published by IRENA, Bloomberg and other sources has been relied upon. Furthermore, the tariff determinations approved by the regulators of countries in different regions have also been

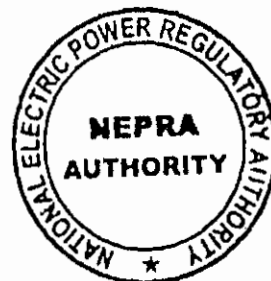


studied. The costs allowed by the Authority in previously determined wind power projects were also examined. Analysing all this data and particularly the trend of decrease in this cost component, the Authority is of the view that O&M cost of USD 1.9 million as claimed by NGEPL is not reasonable. The considerations made by the Authority for the assessment of the O&M costs to be allowed to the petitioner are given in the following paragraph.

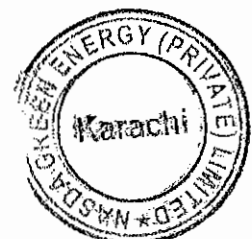
35. The referred reports provide that the O&M cost has decreased sharply over the last couple of years and forecast further decrease in the upcoming years. The O&M cost of as low as USD 15,000 per MW per annum has been found in the referred sources for the initial term contracts. However, these sources qualify that O&M cost increases reasonably with turbines age as component failure becomes more common and manufacturer warranties expire. It has also been found that wind power projects being setup with larger turbines and more sophisticated design will have relatively lower overall O&M cost. The reported impact of size of project and turbines on the annual cost of O&M and differentials with their varying sizes was also analysed. O&M cost in India and China have also been checked and found to be lowest across different countries. Particularly in India, the O&M cost has been found in range of USD 10,000 per MW to USD 14,000 per MW in different states. Nevertheless, the Authority is cognizant of the fact that the costs of India and China cannot be replicated in Pakistan due to advanced development stage of wind industry in those countries and consequent available expertise in terms of manpower and required equipment as well as due to difference in tariff regimes. In addition, the Authority also noted that the level of performance being approved in this determination is relatively higher as compared to what is allowed in India and China which shall require more robust warranties from the O&M contractor that shall also result in comparatively higher O&M cost. Considering all these factors, the Authority has decided to approve O&M cost of USD 23,000 per MW per annum for NGEPL. In view of the claim of the petitioner and other project companies, the Authority has decided to share the approved O&M cost into local and foreign components in the ratio of 50:50.

**Whether the claimed insurance during operation cost is justified?**

36. The petitioner has claimed USD 0.39 million insurance during operation per annum based on 0.5% of the claimed EPC cost. The petitioner submitted that insurance cost includes all-risk insurance, business interruption insurance for the project. The petitioner submitted that these



13



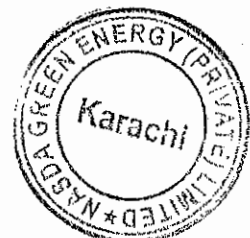


are standard insurances required by all lenders and also set out under the Energy Purchase Agreement ("EPA"). The petitioner submitted that since the Pakistan insurance/re-insurance industry does not have sufficient capacity and expertise to manage such huge risks entirely, therefore, this risk is required to be insured/reinsured internationally. The risk to be covered under these insurance includes machinery breakdown, natural calamities (earthquake, floods, etc.), sabotage and consequential business interruption, etc.

37. The Authority has allowed insurance during operation at the rate of 0.4% of the EPC cost in the most recent determination of solar energy projects. The data of actual insurance of operational wind power projects has also been analysed for this purpose which shows that insurance during operation has been secured at the rate of even less than 0.4%. In view thereof, the Authority has decided to allow insurance during operation at maximum limit of 0.4% of the approved EPC cost to NGEPL. This cost shall be allowed adjustment on annual basis as per the mechanism given in the order part of this determination.

**Whether the claimed return on equity is justified?**

38. The petitioner claimed return on equity (ROE) and return on equity during construction (ROEDC) of 15% (IRR basis) net of withholding tax. The petitioner has requested that the withholding tax has not been identified as a separate line item in the tariff as the same is assumed to be pass through item under the tariff.
39. It was noted that over the passage of time, the Authority has revised the equity returns downward for a number of generation technologies keeping in view the developments in those sectors. The Authority has noted that nearly 1200 MWs of wind power projects are operational. Further, it has been learnt that wind power projects having capacity of more than 2,000 MWs to be setup in Sindh have obtained LOIs from different facilitating agencies. This makes it quite clear that risk profile for developing wind projects especially in Sindh province has reduced considerably. Moreover, the Authority noted that a number of under process wind power companies have claimed ROE of even less than 14%. In view thereof, the Authority has decided to approve the ROE for the petitioner at the rate of 14%. Regarding the petitioner's claim of withholding tax on dividend, the Authority noted that it has principally decided not to allow this tax as pass through in any of the tariff cases.





**Whether the claimed financing/debt terms are justified?**

40. The petitioner has submitted that 50% foreign loan and 50% local loan shall be secured for the project based on debt to equity ratio of 80:20. For foreign financing, the interest rate of LIBOR (1.81%) plus 4.50% with debt repayment period of 13 years has been claimed. For local financing, the petitioner submitted that debt under SBP financing scheme shall be availed with a fixed rate of 2% plus 1.75% with debt repayment period of ten years. The petitioner has submitted indicative term sheet signed with the lenders (Faisal Bank Ltd. and FMO Entrepreneurial Development Bank with United Bank Ltd).
41. The Authority has considered the terms of financing being claimed by the petitioner. The Authority has noted that the SBP has issued concessionary financing scheme in June, 2016. Under the said scheme, renewable energy projects having capacity up to 50 MW can secure loan up to the limit of Rs. 6 billion at the rate of 6% for the debt servicing tenor of ten years. The size of the project being setup by the petitioner is 50 MW which makes it eligible to avail financing under SBP scheme. The Authority has therefore decided to approve the reference tariff of NGEPL on the terms of financing scheme issued by SBP and hereby direct the petitioner to approach SBP for this purpose.
42. In case the petitioner is not able to secure financing under SBP scheme then the tariff of NGEPL shall be adjusted on conventional local/foreign financing, or a mix of both, at the time of its COD. However, the petitioner shall have to prove through documentary evidence issued by SBP/commercial bank that it exhausted the option of availing 100% financing under SBP scheme before availing part/full of conventional local/foreign loan. For conventional full/part of local loan, if any, the tariff of the petitioner shall be approved on applicable KIBOR plus spread of 2.25% and foreign loan on applicable LIBOR plus spread of 4.25%. For conventional loans, the term of debt servicing shall not be lesser than thirteen years. As the reference tariff has been computed using 100% loan under SBP scheme as against the claim of 50% of that loan, therefore, the rate of 6%, as given in the said scheme, has been taken into account. The savings in the cost of the financing (i.e. if the cost is less than 6%), if negotiated/availed by the company, shall be shared in accordance with the mechanism given in the Order part of this determination.







43. The Authority has decided to approve the tariff of NGEPL on the basis of debt to equity ratio of 80:20 as claimed which shall remain same regardless of any form of financing secured by the petitioner.

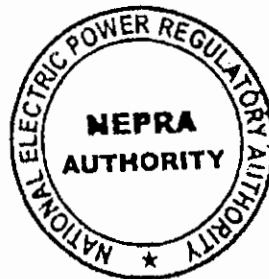
**Whether the claimed construction period is justified?**

44. The petitioner has claimed sixteen months' time for the construction of the project. The Authority has noted that there are a number of under process wind power projects which are claiming construction period of fifteen months. In addition, it has also been seen that there are a number of operational wind projects that have been able to complete construction in fifteen month time. In view thereof, the Authority has decided to approve the construction period of fifteen months for the petitioner as well.

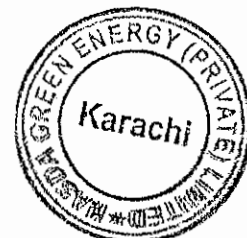
**Any other issue with the approval of the Authority.**

**Comments of CPPA-G**

45. CPPA-G submitted that NEPRA should review the proposal in the context of demand vs supply situation coupled with the quantum of renewable energy to be inducted in Grid according to the recommendations of Grid Code Review Panel ("GCRP") duly approved by NEPRA from time to time. CPPA-G also submitted that all the projects based on wind, solar, small hydel and bagasse energy will be awarded through competitive bidding as per Cabinet Committee on Energy ("CCE") decision.
46. Regarding the submission of CPPA-G with respect to demand and supply position, it has been noted that NTDCL vide its letter dated June 23, 2017 submitted tentative demand supply analysis with the report namely Power Balance up to 2025. In that document, NTDCL submitted that it plans to evacuate 600 MW additional power from wind power projects in 2019-20 and further 500MW collectively from wind and solar power projects in 2020-21.
47. Regarding quantum of renewable energy induction in the Grid, the Authority has noted that as per approved Grid Code Addendum No. I (Revision-I) for Grid Integration of Wind Power Plants, the upper limit equal to 5% of the total installed grid-connected power capacity has been set for the integration of wind power plants. The Authority also noted that NTDCL has issued



16





certificate of approval of the system studies of the project company on May 05, 2017. NTDCL in its approval letter also certified that the power to be generated by the project company will be evacuated in accordance with the study assumptions and will not have any adverse effect on the national grid as required under the grid code. On the basis of that approval, the Authority has issued generation license to NGEPL on August 03, 2017.

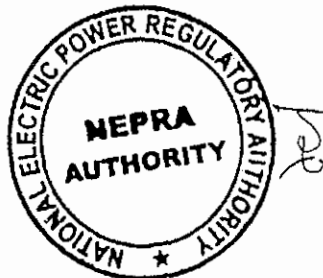
48. Regarding award of tariff of renewable energy projects through competitive bidding, it was noted that vide its decision dated January 27, 2017 in the matter of Wind Power Generation Tariff, the Authority decided to allow induction of wind energy through competitive bidding and directed the relevant agencies to develop RFP for that purpose. Due to non-finalization of RFP by any agency after the lapse of considerable time period, the process of competitive bidding has not taken place. Further, the Authority through decision dated May 30, 2017 passed in the Review Motions of GOS clarified that submission of tariff petitions under the Tariff Rules, 1998 is permissible. Therefore, it may not be considered appropriate to stop entertaining applications under Tariff Rules, 1998 merely on the basis of the decision of CCE.

49. **ORDER**

In pursuance of section 7(3) (a) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 read with NEPRA (Tariff Standards & Procedure) Rules, 1998, the Authority hereby determines and approves the following generation tariff along with terms and conditions for NASDA Green Energy (Pvt) Limited for its 50 MW wind power project for delivery of electricity to the power purchaser:

Tariff Component	Rs./kWh	
	Year 1-10	Year 11-25
Operations and Maintenance Cost	0.8181	0.8181
Insurance during Operation	0.1649	0.1649
Return on Equity	1.3877	1.3877
Debt Servicing	4.8632	-
<b>Total</b>	<b>7.2340</b>	<b>2.3708</b>

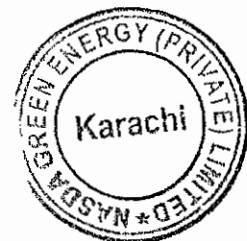
- Levelized tariff works out to be US Cents 4.7190/kWh.
- EPC cost of USD 57.940 million has been considered.



- PDC cost of USD 2,500 million has been taken into account.
- Insurance during construction at the rate of 0.5% of the EPC cost has been approved.
- Financing charges at the rate of 2.5% of the debt portion of the capital cost has been approved.
- Net Annual Plant Capacity Factor of 38.51% has been approved.
- O&M Cost of USD 23,000 per MW per year has been approved.
- Debt to Equity of 80:20 has been used.
- Debt Repayment period of 10 years has been taken into account.
- The cost of financing of 6% for construction and operation has been used.
- Return on Equity of 14% has been allowed.
- Construction period of fifteen (15) months has been used for the workings of ROEDC and IDC.
- Insurance during Operation has been calculated as 0.4% of the allowed EPC Cost.
- Reference Exchange Rates of 120 PKR/USD has been used.
- The aforementioned tariff is applicable for twenty five (25) years from COD
- Detailed component wise tariff is attached as **Annex-I** of this decision.
- Debt Servicing Schedule is attached as **Annex-II** of this decision.

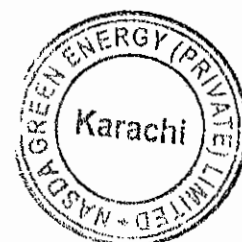
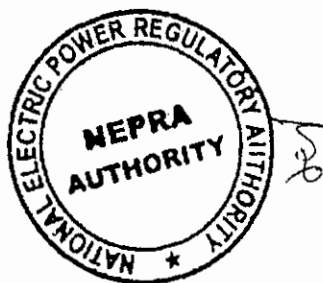
**A. One Time Adjustments at COD**

- The EPC cost shall be adjusted at actual considering the approved amount as the maximum limit. Applicable foreign portion of the EPC cost will be adjusted at COD on account of variation in PKR/USD parity, on production of authentic documentary evidence to the satisfaction of the Authority. The adjustment in approved EPC cost shall be made only for the currency fluctuation against the reference parity values.
- PDC, Insurance during construction and Financing Fee and Charges shall be adjusted at actual at the time of COD considering the approved amount as the maximum limit. The amounts allowed on these accounts in USD will be converted in PKR using the reference PKR/USD rate of 120 to calculate the maximum limit of the amount to be allowed at COD.





- The petitioner has submitted M/s DNV-GL certification No. TC-236603-A-2 date May 29, 2015 about the design, specification and country of origin of various component of the wind turbine to be installed for this project. At the time of COD stage tariff adjustments, the petitioner will have to provide a confirmation from the EPC contractor as to the fullest compliance of the equipment having same design and origin of manufacture as given in the type certificate. Where needed, the bill of lading and other support documents will also have to be submitted.
- Duties and/or taxes, not being of refundable nature, relating to the construction period directly imposed on the company up to COD will be allowed at actual upon production of verifiable documentary evidence to the satisfaction of the Authority.
- IDC will be recomputed at COD on the basis of actual timing of debt draw downs (for the overall debt allowed by the Authority at COD) for the project construction period of fifteen months allowed by the Authority.
- For full/part of conventional local or foreign loans or a mix of both, if availed by the company, the IDC shall also be allowed adjustment for change in applicable KIBOR/LIBOR.
- The tariff has been determined on debt: equity ratio of 80:20. The tariff shall be adjusted on actual debt: equity mix at the time of COD, subject to equity share of not more than 20%. For equity share of more than 20%, allowed IRR shall be neutralized for the additional cost of debt: equity ratio.
- The reference tariff has been worked out on the basis of cost of 6% offered under SBP financing scheme. In case cost negotiated by the company under SBP scheme is less than the said limit of 6%, the savings in that cost shall be shared between the power purchaser and the power producer in the ratio of 60:40 respectively.
- For full or part of local or foreign loan, if any, the savings in the approved spreads shall be shared between the power purchaser and power producer in the ratio of 60:40.
- ROEDC will be adjusted at COD on the basis of actual equity injections (within the overall equity allowed by the Authority at COD) for the project construction period of fifteen months allowed by the Authority.





**B. Indexations**

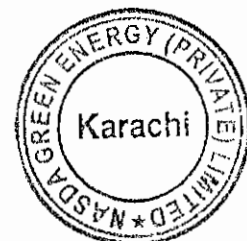
Adjustment of O&M, return on equity, return on equity during construction shall be made on quarterly basis for the quarters starting from 1st July, 1st October, 1st January and 1st April based on latest available information. Adjustment of Debt Servicing Component (if any) shall be made either quarterly or bi-annually depending upon the final terms approved by the Authority. For bi-annual adjustments, the periods shall start from 1st July and 1st January. Insurance component shall be adjusted on annual basis starting from either 1<sup>st</sup> January or 1<sup>st</sup> July. The indexation mechanisms are given hereunder:

**i) Operation and Maintenance Costs**

O&M components of tariff shall be adjusted based on revised rates of local Inflation (CPI) as notified by Pakistan Bureau of Statistics, foreign inflation (US CPI) as notified by US Bureau of Labour Statistics and TT&OD selling rate of US Dollar as notified by National Bank of Pakistan according to the following formula;

$F. O\&M_{(REV)}$	=	$F. O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$
$L. O\&M_{(REV)}$	=	$L. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$
Where;		
$F. O\&M_{(REV)}$	=	The revised O&M Foreign Component of Tariff
$L. O\&M_{(REV)}$	=	The revised O&M Local Component of Tariff
$F. O\&M_{(REF)}$	=	The reference O&M Foreign Component of Tariff
$L. O\&M_{(REF)}$	=	The reference O&M Local Component of Tariff
$US CPI_{(REV)}$	=	The revised US CPI (All Urban Consumers)
$US CPI_{(REF)}$	=	The reference US CPI (All Urban Consumers) of 252.146 of August, 2018
$CPI_{(REV)}$	=	The revised CPI (General)
$CPI_{(REF)}$	=	The reference CPI (General) of 229.27 for the month of August, 2018
$ER_{(REV)}$	=	The revised TT & OD selling rate of US dollar
$ER_{(REF)}$	=	The reference TT & OD selling rate of RS. 120/USD

Note: The reference indexes shall be revised after making the required adjustments in tariff components at the time of COD.



ii) **Insurance during Operation**

The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser, not exceeding 0.4% of the approved EPC cost, will be treated as pass through. Insurance component of reference tariff shall be adjusted annually as per actual upon production of authentic documentary evidence according to the following formula:

AIC	=	$Ins_{(Ref)} / P_{(Ref)} * P_{(Act)}$
Where;		
AIC	=	Adjusted insurance component of tariff
$Ins_{(Ref)}$	=	Reference insurance component of tariff
$P_{(Ref)}$	=	Reference premium @ 0.4% of approved EPC Cost at Rs. 120
$P_{(Act)}$	=	Actual premium or 0.4% of the approved EPC Cost converted into Pak Rupees on exchange rate prevailing at the time of insurance premium payment of the insurance coverage period whichever is lower

iii) **Return on Equity**

The total ROE (ROE + ROEDC) component of the tariff will be adjusted on quarterly basis on account of change in USD/PKR parity. The variation relating to these components shall be worked out according to the following formula;

$ROE_{(Rev)}$	=	$ROE_{(Ref)} * ER_{(Rev)} / ER_{(Ref)}$
Where;		
$ROE_{(Rev)}$	=	Revised ROE Component of Tariff
$ROE_{(Ref)}$	=	Reference ROE Component of Tariff
$ER_{(Rev)}$	=	The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan
$ER_{(Ref)}$	=	The reference TT & OD selling rate of Rs. 120/USD

Note: The reference tariff component shall be revised after making the required adjustments at the time of COD.

iv) **Indexations applicable to debt**

For full or part of conventional foreign debt, if any, respective principle and interest components will be adjusted on quarterly/bi-annual basis, on account of revised TT & OD





selling rate of US Dollar, as notified by the National Bank of Pakistan as at the last day of the preceding quarter, over the applicable reference exchange rate. The interest part of the foreign loan shall be allowed adjustment with respect to change in the applicable LIBOR. For full or part of conventional local loan, if any, the interest component shall be allowed adjustment with respect to change in applicable KIBOR.

**C. Terms and Conditions**

The following terms and conditions shall apply to the determined tariff:

- All plant and equipment shall be new and of acceptable standards. The verification of the plant and equipment will be done by the independent engineer at the time of the commissioning of the plant duly appointed by the power purchaser.
- This tariff will be limited to the extent of net annual energy generation supplied to the power purchaser up to 38.51% net annual plant capacity factor. Net annual energy generation supplied to the power purchaser in a year, in excess of 38.51% net annual plant capacity factor will be charged at the following tariffs:

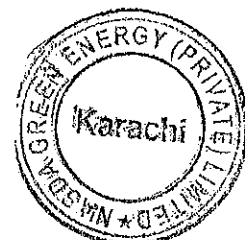
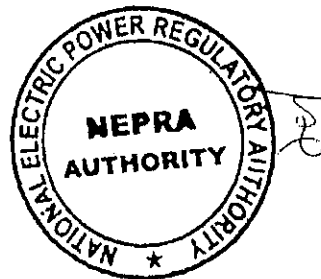
<u>Net annual plant capacity factor</u>	<u>% of prevalent tariff allowed to power producer</u>
Above 38.51% up to 40.51%	5%
Above 40.51% up to 42.51%	10%
Above 42.51% up to 44.51%	20%
Above 44.51% up to 46.51%	40%
Above 46.51% up to 48.51%	80%
Above 48.51%	100%

- The petitioner is required to ensure that all the equipment is installed as per the details/specifications provided in the determination. Any change in the power curve of the turbines as provided in studies along with the petition and the relevant assumptions contained therein shall not be allowed.





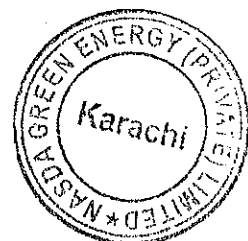
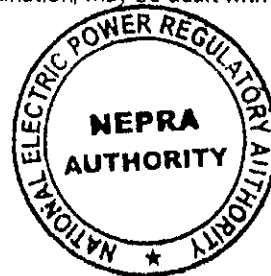
- The petitioner is required to maintain the availability levels as declared in the Tariff Petition and the studies provided therein. Necessary clauses shall be included in the EPA so that the power producer cannot intentionally suppress the capacity factors. NPCC shall conduct detailed monitoring/audit of the operational record/log of all the wind turbines on quarterly basis to verify output/capacity of the power plant.
- The risk of wind resource shall be borne by the power producer.
- In the tabulated above tariff no adjustment for certified emission reductions has been accounted for. However, upon actual realization of carbon credits, the same shall be distributed between the power purchaser and the power producer in accordance with the applicable GOP Policy, amended from time to time.
- The savings in the cost under SBP scheme during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40.
- In case the company shall secure full or part of local conventional loan then the tariff of company shall be adjusted at the time of COD at applicable KIBOR + spread of 2.25%. The savings in the approved spreads during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40. The tenor of the debt servicing shall not be less than thirteen years for this loan.
- In case the company shall secure full or part of foreign conventional loan then the tariff of company shall be adjusted at the time of COD at applicable LIBOR + spread of 4.25%. The savings in the approved spreads during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40. The tenor of the debt servicing shall not be less than thirteen years for this loan.
- In case the company shall secure foreign loan under any credit insurance (Sinasure etc.) then the cost of that insurance shall be allowed to the maximum limit of 0.6% of the yearly outstanding principal and interest amounts. For that purpose, the spread over that full/part of loan shall be considered as 3.5% as the maximum limit. The savings in the spread during the loan tenor shall be shared between the power purchaser and power producer in the ratio of 60:40.







- The company will have to achieve financial close within one year from the date of issuance of this determination. The tariff granted to the company will no longer remain applicable/valid, if financial close is not achieved by the company in the abovementioned timeline or its generation license is declined/revoked by NEPRA.
- The targeted maximum construction period after financial close is fifteen months. No adjustment will be allowed in this tariff to account for financial impact of any delay in project construction. However, the failure of the company to complete construction within fifteen months will not invalidate the tariff granted to it.
- Pre COD sale of electricity is allowed to the project company, subject to the terms and conditions of Energy Purchase Agreement, at the applicable tariff excluding principal repayment of debt component and interest component. However, pre COD sale will not alter the required commercial operations date stipulated by the Energy Purchase Agreement in any manner.
- In case the company is obligated to pay any tax on its income from generation of electricity, or any duties and/or taxes, not being of refundable nature, are imposed on the company, the exact amount paid by the company on these accounts shall be reimbursed on production of original receipts. This payment shall be considered as a pass-through payment. However, withholding tax on dividend shall not be passed through.
- No provision for the payment of Workers Welfare Fund and Workers Profit Participation has been made in the tariff. In case, the company has to pay any such fund, that will be treated as pass through item in the EPA.
- The approved tariff along with terms & conditions shall be made part of the EPA. General assumptions, which are not covered in this determination, may be dealt with as per the standard terms of the EPA.

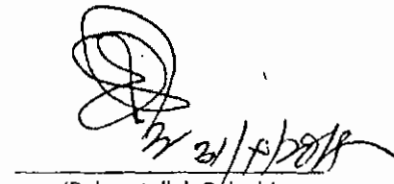





50. The Order part along with two Annexures is recommended for notification by the Federal Government in the official gazette in accordance with Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

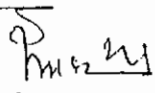
**AUTHORITY**

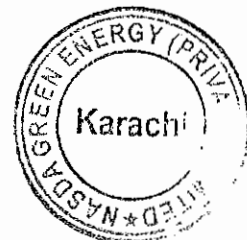
  
(Saif Ullah Chattha)  
Member 31.10.2018

  
(Rehmattullah Baloch)  
Vice Chairman

  
(Brig (R) Tariq Saddozai)  
Chairman



  
19 11 18



**NASDA GREEN ENERGY (PVT.) LIMITED**  
**REFERENCE TARIFF TABLE**

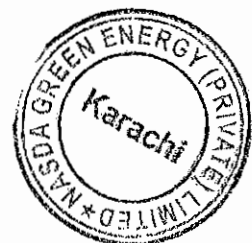
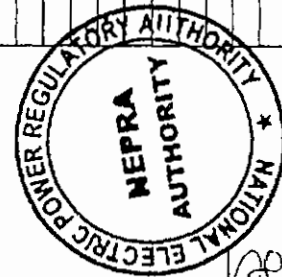
Year	Foreign O&M		Local O&M		Insurance		Return on Equity		ROEDC		Loan Repayment		Interest Charges		Tariff	
	Rs. / kWh		Rs. / kWh		Rs. / kWh		Rs. / kWh		Rs. / kWh		Rs. / kWh		Rs. / kWh		Rs. / kWh	
1	0.4091		0.4091		0.1649		1.2730		0.1147		2.7418		2.1214		7.2340	
2	0.4091		0.4091		0.1649		1.2730		0.1147		2.9101		1.9531		7.2340	
3	0.4091		0.4091		0.1649		1.2730		0.1147		3.0887		1.7746		7.2340	
4	0.4091		0.4091		0.1649		1.2730		0.1147		3.2782		1.5850		7.2340	
5	0.4091		0.4091		0.1649		1.2730		0.1147		3.4793		1.3839		7.2340	
6	0.4091		0.4091		0.1649		1.2730		0.1147		3.6929		1.1704		7.2340	
7	0.4091		0.4091		0.1649		1.2730		0.1147		3.9195		0.9438		7.2340	
8	0.4091		0.4091		0.1649		1.2730		0.1147		4.1600		0.7032		7.2340	
9	0.4091		0.4091		0.1649		1.2730		0.1147		4.4152		0.4480		7.2340	
10	0.4091		0.4091		0.1649		1.2730		0.1147		4.6862		0.1770		7.2340	
11	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
12	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
13	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
14	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
15	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
16	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
17	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
18	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
19	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
20	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
21	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
22	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
23	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
24	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
25	0.4091		0.4091		0.1649		1.2730		0.1147		-		-		2.3708	
<b>Levelized Tariff</b>	<b>0.4091</b>		<b>0.4091</b>		<b>0.1649</b>		<b>1.2730</b>		<b>0.1147</b>		<b>2.3502</b>		<b>0.9418</b>		<b>5.6628</b>	



26

**NASDA GREEN ENERGY (PVT.) LIMITED**  
**DEBT SERVICING SCHEDULE**

Relevant Quarters	Base amount (USD)	Principal Repayment (USD)	Interest (USD)	Balance Principal (USD)	Total Debt Service (Million USD)	Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh
1	51,124,729	942,081	766,871	50,182,649	1,708,952		
2	50,182,649	956,212	752,740	49,226,437	1,708,952	2,7418	2,1214
3	49,226,437	970,555	738,397	48,255,882	1,708,952		
4	48,255,882	985,113	723,838	47,270,769	1,708,952		
5	47,270,769	999,890	709,062	46,270,879	1,708,952		
6	46,270,879	1,014,888	694,063	45,255,990	1,708,952	2,9101	1,9531
7	45,255,990	1,030,112	678,840	44,225,879	1,708,952		
8	44,225,879	1,045,563	663,388	43,180,315	1,708,952		
9	43,180,315	1,061,247	647,705	42,119,069	1,708,952		
10	42,119,069	1,077,166	631,786	41,041,903	1,708,952		
11	41,041,903	1,093,323	615,629	39,948,580	1,708,952	3,0887	1,7746
12	39,948,580	1,109,723	599,229	38,838,857	1,708,952		
13	38,838,857	1,126,369	582,583	37,712,489	1,708,952		
14	37,712,489	1,143,264	565,687	36,569,224	1,708,952	3,2782	1,5850
15	36,569,224	1,160,413	548,538	35,408,811	1,708,952		
16	35,408,811	1,177,819	531,132	34,230,992	1,708,952		
17	34,230,992	1,195,487	513,465	33,035,505	1,708,952		
18	33,035,505	1,213,419	495,533	31,822,086	1,708,952	3,4793	1,3839
19	31,822,086	1,231,620	477,331	30,590,466	1,708,952		
20	30,590,466	1,250,095	458,857	29,340,372	1,708,952		
21	29,340,372	1,268,846	440,106	28,071,526	1,708,952		
22	28,071,526	1,287,879	421,073	26,783,647	1,708,952	3,6929	1,1704
23	26,783,647	1,307,197	401,755	25,476,450	1,708,952		
24	25,476,450	1,326,805	382,147	24,149,645	1,708,952		
25	24,149,645	1,346,707	362,245	22,802,938	1,708,952		
26	22,802,938	1,366,907	342,044	21,436,031	1,708,952	3,9195	0,9438
27	21,436,031	1,387,411	321,540	20,048,620	1,708,952		
28	20,048,620	1,408,222	300,729	18,640,398	1,708,952		
29	18,640,398	1,429,346	279,606	17,211,052	1,708,952		
30	17,211,052	1,450,786	258,166	15,760,266	1,708,952	4,1600	0,7032
31	15,760,266	1,472,548	236,404	14,287,719	1,708,952		
32	14,287,719	1,494,636	214,316	12,793,083	1,708,952		
33	12,793,083	1,517,055	191,896	11,276,028	1,708,952	4,4152	0,4480
34	11,276,028	1,539,811	169,140	9,736,217	1,708,952		
35	9,736,217	1,562,908	146,043	8,173,308	1,708,952		
36	8,173,308	1,586,352	122,600	6,586,957	1,708,952		
37	6,586,957	1,610,147	98,804	4,976,809	1,708,952		
38	4,976,809	1,634,299	74,652	3,342,510	1,708,952	4,6862	0,1770
39	3,342,510	1,658,814	50,138	1,683,696	1,708,952		
40	1,683,696	1,683,696	25,255	(0)	1,708,952		



---

**ANNEXURE D3**  
**SCHEDULE-II TO THE GENERATION LICENSE**

---

