



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-446/BWEPL-2018/2882-2884
February 20, 2019

Subject: Determination of the National Electric Power Regulatory Authority in the matter of Tariff Petition filed by Burj Wind Energy (Pvt.) Limited for Determination of Reference Generation Tariff in respect of 13.80 MW Wind Power Project [Case # NEPRA/TRF-446/BWEPL-2018]

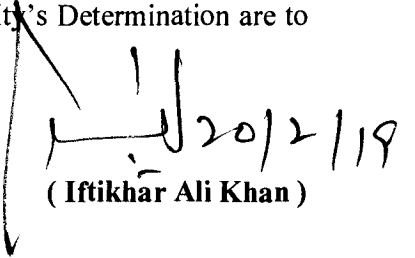
Dear Sir,

Please find enclosed herewith the subject Determination of the Authority along with Annexure-I & II (27 pages) in Case No. NEPRA/TRF-446/BWEPL-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


(Iftikhar Ali Khan)

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 BURJ WIND ENERGY (PVT.) LIMITED FOR
DETERMINATION OF REFERENCE GENERATION TARIFF IN RESPECT OF 13.80 MW WIND
POWER PROJECT**

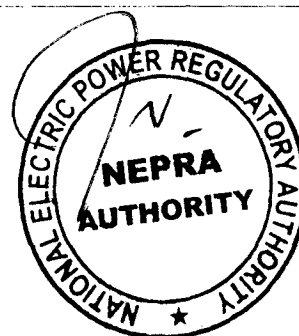
1. Burj Wind Energy (Pvt.) Ltd. ("BWEPL" or "the petitioner" or "the company/project company") vide its letter dated May 31, 2018 filed a tariff petition before National Electric Power Regulatory Authority ("NEPRA" or "the Authority") under the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997 ("NEPRA Act") and NEPRA (Tariff Standards & Procedure) Rules, 1998 for determination of reference generation tariff in respect of its 13.8 MW wind power project ("the project") envisaged to be set up at Gujju, District Thatta, Sindh. The petitioner has requested for the approval of levelized tariff of US Cents 7.7297/kWh (Rs. 8.1161/kWh) over the tariff control period of 25 years.

SUBMISSIONS OF THE PETITIONER

2. The petitioner submitted that it is developing the project on a Build-Own and Operate ("BOO") basis which is owned by Burj Capital. Letter of Intent ("LOI") was issued by Alternative Energy Development Board ("AEDB") for establishing an approximately 14 MW wind power generation project under the applicable Policy for Development of Renewable Energy for Power Generation 2006 (RE Policy, 2006) on October 31, 2012. On April 10, 2018, the validity of the said LOI was extended till July 21, 2018, i.e. LOI was valid at the time of application of tariff. BWEPL informed that it has submitted the feasibility report to AEDB on May 10, 2018; however, the approval in this regard is pending. BWEPL also submitted that it has applied for Generation License to NEPRA vide its letter dated May 2, 2018.
3. Summary of the key information as provided by the petitioner is as follows:

| | |
|------------------|---------------------------------|
| Project company | : Burj Wind Energy (Pvt.) Ltd. |
| Sponsors | : Burj Capital |
| Capacity | : 13.80 MW |
| Project location | : Gujju, District Thatta, Sindh |

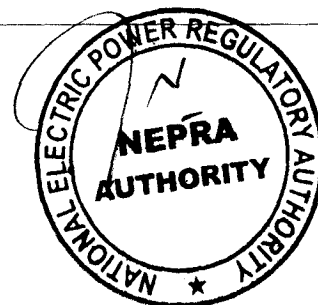
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| Land Area | : | 250 acres |
| Concession period | : | 25 years from COD |
| Power purchaser | : | Central Power Purchasing Agency Guarantee Ltd. |
| Wind turbine | : | General Electric |
| Model | : | GE 2.3-116m |
| Plant capacity factor | : | 41.10% |
| Annual energy generation | : | 49.7 GWh |
| Construction period | : | 18 months |
| Off-shore contractor | : | Powerchina Huadong Engineering Corporation Ltd. |
| On-shore contractor | : | HDEC Engineering (Pvt.) Ltd. |
| O&M contractor | : | HDEC Engineering (Pvt.) Ltd. |
| Project cost: | | (USD in millions) |
| EPC cost | : | 24.310 |
| Project Development Cost | : | 1.950 |
| Insurance during construction | : | 0.121 |
| Financial Charges | : | 0.593 |
| Interest during construction | : | 0.750 |
| Total project cost | : | 27.724 |
| Financing structure | : | Debt 75% : Equity 25% |
| Debt composition | : | 50% Local and 50% foreign loan |
| Interest rate | : | 3 Month KIBOR (6%) + spread 2.5% 3 Month LIBOR (0.6%) + spread 4.5% |
| Debt repayment period | : | 13 years |
| Return on equity | : | 15% IRR based |
| O&M cost | : | USD 0.67 million per annum |
| Insurance cost | : | USD 0.097 million per annum |
| | | PKR/kWh US¢/kWh |
| Levelized Tariff | : | 8.1161 7.7297 |
| Exchange rate | : | 1 USD = PKR 105 |

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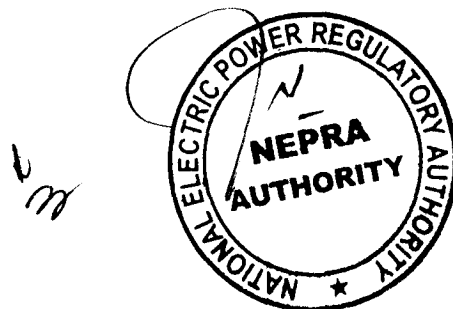


PROCEEDINGS

4. 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 July 25, 2018. Through the said notice, NEPRA invited comments and intervention requests from the interested parties within seven (07) 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 July 30, 2018 for participation in the proceedings.
5. The hearing on the subject matter was held on August 08, 2018 (Wednesday) at 11:00 A.M. at NEPRA Tower, Islamabad, which was attended by a number of participants including the petitioner, representatives of Punjab Power Development Board ("PPDB") Islamabad Electric Supply Co. Ltd. ("IESCO"), etc.
6. In response to Notice of Admission/Hearing, comments were received from Central Power Purchasing Agency (Guarantee) Limited (CPPA-G) dated August 03, 2018 whereas no intervention request was received from any party/stakeholder. The comments of CPPA-G were forwarded to the petitioner for its response which was received on August 16, 2018. The comments of CPPA-G along with petitioner's reply and Authority's decision thereon are discussed in the relevant section of this determination.

ISSUES FRAMED:

7. 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.

8. 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

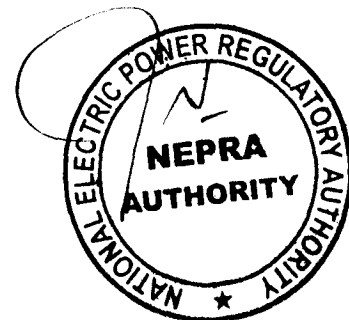
Whether the NEPRA (Selection of EPC Contractor by IPPs) Guidelines, 2017 have been fully complied with?

9. The petitioner has claimed USD 24.310 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 April 23, 2018. The breakup of the EPC cost as provided by the petitioner is given hereunder:

| EPC cost | USD Million |
|-------------------|---------------|
| Offshore contract | 21.670 |
| Onshore contract | 2.640 |
| Total | 24.310 |

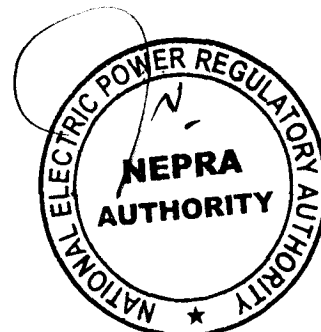
10. The petitioner submitted that it has carried out a competitive bidding process for selection of EPC contractor. Request for Quotations ("RFQ") were sent to the following five leading EPC Contractors on April 30, 2017:

- a. Descon Engineering Limited Pakistan



- b. Huadong Engineering Corporation Limited (Hydro China Corporation Limited)
 - c. Nordex
 - d. Xing Xiang Electric Power Construction Company Limited China (Vestas)
 - e. Orient Power (Gamesa)
11. The bid submission deadline was May 25, 2017 and by that time bids were received from the following three EPC Contractors:
 - a. Descon Engineering Limited Pakistan with GE & Gold Wind Turbines
 - b. Huadong Engineering Corporation Limited (HDEC) with GE & Gold Wind Turbines
 - c. Xing Xiang Electric Power
12. During the process of the bidding, the petitioner submitted that the Authority issued NEPRA (Selection of Engineering, Procurement and Construction Contractor by Independent Power Producers) Guidelines 2017 ("NEPRA EPC Guidelines" or "EPC Guidelines") on May 19, 2017. BWEPL submitted that the company then followed the remaining bidding process i.e. technical and commercial bid evaluation and finalization of EPC Contractor in accordance with EPC Guidelines. It engaged Independent Consultant namely OMS (Pvt.) Ltd. for the evaluation of technical and commercial bids. The Independent Consultant also engaged M/s Wood Group UK (formerly Sgurr Energy Limited) as its sub consultant for the evaluation of the Wind Turbine Generators ("WTGs"). Those consultants held clarification meetings with the bidders to bring them all on same page with respect to identical scope of work as required by the project company. M/s Descon Engineering Limited and Huadong Engineering Corporation were declared technically qualified by Independent Consultant. Then, commercial bids of the two technically qualified EPC bidders were called on November 30, 2017 and the Independent Consultant carried out evaluations as per NEPRA EPC Guidelines. The successful bidder was selected by combining the technical and commercial evaluation numbers and the Independent Consultant recommended M/s HDEC as qualified EPC contractor with GE's 2.3-116m WTGs. The petitioner submitted that HDEC will construct the plant and will also be responsible for O&M of the complete facility for the first two years. Further, the petitioner submitted that HDEC with GE technology is also the contractor in its current Jhampir Power Limited 50 MW wind project which was delivered on scheduled time.

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13. During the hearing, the petitioner submitted that the EPC cost in terms of per MW of the project shall be higher than other projects having relatively larger sizes. The petitioner also stated that most of the cost benchmarks for wind technology are available for project size of 50 MW. Application of those assessments of the EPC cost on BWEPL's project can lead to estimation errors. In addition, the project company submitted that compared to Jhimpir area, Gujju (Gharo - Ketibander wind corridor) has higher water table ratio and lower soil bearing capacity due to which pile foundation has been recommended by project consultants. Further, that location has higher humidity indoor owing to which Gas Insulated Substation has been considered.
14. The Authority is of the view that EPC cost of USD 24.310 million as claimed by BWEPL is on the higher side. Although, the petitioner has submitted that transparent and competitive process was adopted for the selection of EPC contractor as per the procedure given in NEPRA EPC Guidelines (evaluation purpose); however, it is viewed that 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 ensuing paragraph.
15. The Authority has noted that it has recently approved tariffs of fifteen wind power projects. The EPC costs for those projects were approved after considering the information from various sources including reports issued by a number of credible organizations as well as after referring the EPC costs approved by the regulatory organizations in different countries. The Authority noted that the size of the BWEPL is fairly small (13.8 MW) than the projects for which aforementioned assessments were made (50-60 MWs). During the hearing, the petitioner also put thrust on the argument that its EPC cost should not be assessed based on project of larger sizes. The Authority is cognizant that per MW cost for BWEPL would be higher than projects having sizes in the range of 50-60 MW. But, it is also concerned that the consumers should not be excessively burdened with the higher cost due to the reason that the project company has decided to build a plant which is smaller than standard size of wind power plants. It is found that the cost of turbine changes fairly in direct proportion to size of the project so this cost portion as approved for bigger projects may be considered for BWEPL also. The civil cost part of turbines may exhibit direct reduction with the change in number of turbines with slight changes due to differences in location, however, cost of civil works related to access roads, staff buildings

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etc. (per MW terms) would be higher for BWEPL than other projects of relatively larger sizes. Further, it is noted that the cost of balance of plant with 132 kV substation will be considerably higher for BWEPL (per MW terms) as compared to the bigger wind power projects. Considering all the factors mentioned above, the Authority has decided to allow the EPC cost of BWEPL as USD 17.866 million.

16. 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.

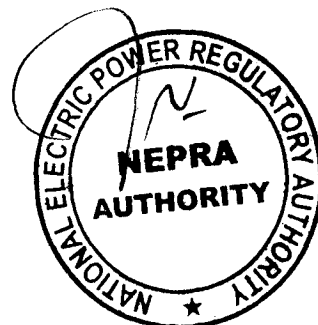
Whether the details provided for Non-EPC cost are sufficient and claimed Non-EPC cost is justified? Also provide justification for land requirement as claimed by the petitioner.

17. The petitioner has claimed USD 3.416 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 | 1.950 |
| Insurance during construction | 0.122 |
| Financial fee and charges | 0.593 |
| Interest during construction | 0.751 |
| Total Non-EPC Cost | 3.416 |

Project Development Cost

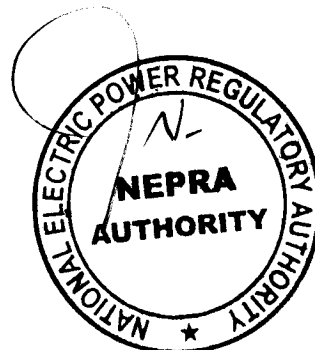
18. The petitioner has claimed Project Development Cost ("PDC") of USD 1.950 million. In its petition and during the hearing, the petitioner submitted that this claim includes the cost of feasibility and related studies, administrative costs, various regulatory fees of NEPRA and other regulatory bodies, travelling and security cost, cost related to power purchaser LC, cost of land and fees in relation to advisors of the project.



19. The petitioner during the hearing has submitted that the project is going to be setup on 250 acres of land. In support of this submission, the petitioner has submitted copy of Memorandum of Understanding (MoU) dated February 15, 2018, Addendum-I of MoU dated September 25, 2018 and Addendum-II of MoU dated December 24, 2018. As per the MoU, 250 acre of land has been leased to the project company by Mr. Saleem uz Zaman (CEO of the project company) for a period of 30 years with effect from July 1, 2012. It has been agreed in the MoU that the project company shall pay Rs. 20,000 per acre per year to lessor for 1st ten years of operation. Afterwards, that amount shall be indexed by 5% for next ten years and then another 5% for last ten years.
20. The Authority noted that in the recent tariff determinations of 50 MW wind power projects, the Authority allowed USD 2.5 million for PDC which includes the land lease cost. The cost of land was allowed to the extent of lease cost that has been paid as per the cost charged by the respective provincial governments i.e. Rs. 3,000 per acre per year is charged for initial ten years, Rs. 5,000 per acre per year for next ten years and Rs. 8,000 per acre per year during last ten years will be charged. For project in Sindh, the lease amount of initial ten years was paid upfront hence same was made part of the approved project cost. The projects were required to manage the cost of land lease for the remaining years from the approved cost of Operation and Maintenance.
21. The Authority understands that a number of items in the PDC such as cost of studies, fees paid to advisors, administration cost, travelling cost etc. do not change in direct proportion with the capacity of the projects. That is, the cost incurred on these items, in absolute terms, for a 50 MW project may be same or slightly less for a 13.80 MW project. However, there are certain costs such as fees paid to different government offices, security cost etc. may reduce in direct proportion with the size of the project.
22. Based on the discussions given in immediately preceding paragraph and considering relatively higher cost of land, the Authority has decided to allow USD 1.20 million on account of PDC 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.

Insurance During Construction

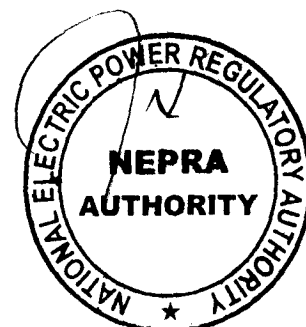
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23. The petitioner has claimed USD 0.1215 million on account of insurance cost of the project's assets during construction and requested to adjust this component at actual subject to a cap of 1% of claimed EPC cost at COD. The petitioner submitted that in view of the practices set by other independent power projects in Pakistan and as per the requirements of lenders, the project intends to procure following insurance coverage 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
24. The Authority has noted that in the recent tariff cases of wind and 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 0.089 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

25. The petitioner has claimed USD 0.593 million on account of financing fee and charges. BWEP submitted that the claimed amount includes fees and charges related to lenders up-front fee, lenders advisors & agent's charges, commitment fee, management fee, charges related to various Letter of Credit ("LC") to be established in favour of various contracting parties and stamp duty applicable on the financing documents, agency fee, security trustee fee and other financing fees and charges. The petitioner further submitted that due to foreign financing, there will not be requirement of opening LC in favour of EPC contractor. However, in case the company is required to provide LC confirmation cost for base equity LC and other LC's related to securing the sponsors obligations under the financing agreements, then such costs shall be claimed at true-up on the basis of actual

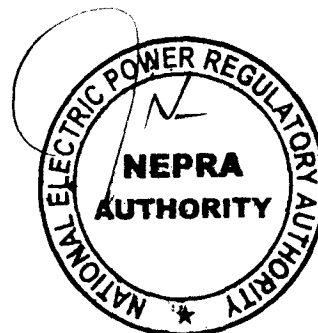
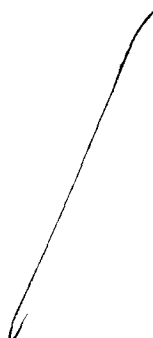


cost incurred. The petitioner has claimed financial fees & charges at 3% of the debt amount of the capital expenditure.

26. It was noted that in recent tariff determinations for wind power projects, the Authority had allowed financial fee & charges at the rate of 2.5% of the debt portion of capital expenditures (EPC, PDC, pre-COD insurance). 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 to BWEPL. Accordingly, the allowed amount under this head works out to be around USD 0.383 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)

27. The petitioner has claimed Interest During Construction ("IDC") of USD 0.750 million for the claimed construction period which has been calculated on the basis of 3-month KIBOR (6%) plus a spread of 2.5% and at 3-month LIBOR (0.6%) plus a spread of 4.5%. The petitioner submitted that actual IDC, however, shall be subject to change depending on the fluctuations 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 thirteen years 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 25% in each quarter, the IDC works out to be USD 0.365 million which is hereby approved.
28. Recapitulating the above, the approved project cost under various heads is given herunder:



| Project Cost | (USD million) |
|-------------------------------|---------------|
| EPC Cost | 17.866 |
| Project Development Cost | 1.200 |
| Insurance during construction | 0.089 |
| Financing Fee & Charges | 0.383 |
| Interest During Construction | 0.365 |
| Total | 19.903 |

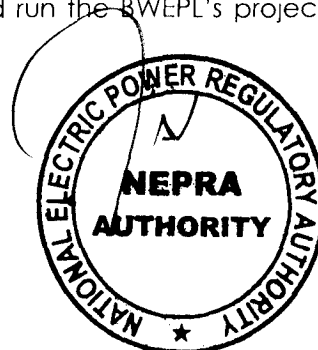
Whether the claimed annual energy generation and corresponding plant capacity factor are reasonable and justified? And whether the petitioner's proposed wind turbine technology satisfies the international standards of quality and operation?

29. The petitioner submitted the following technical details/parameters in this regard:

| | |
|------------------------------------|------------|
| Project capacity | 13.8 MW |
| Annual power generation | 49,685 MWh |
| Net capacity factor | 41.1% |
| Hub Height | 94 m |
| Rotor Diameter | 116 m |
| Name plate capacity (Each Turbine) | 2.3 MW |

30. The petitioner has claimed annual energy production of 49,685 MWh and corresponding net plant capacity factor of 41.1%. The petitioner submitted Wind Resource and Energy Yield Assessment Report ("Energy Report") conducted by its technical consultant. The claimed figure of 41.1% corresponds to energy number at P75 level given in the aforesaid Energy Report

31. The petitioner submitted that HDEC and GE are top-rated global powerhouses in wind sector (technically and financially) and have the largest market share in Pakistan of installed wind projects (in their respective areas). BWEPL further stated that HDEC with GE technology is also the contractor in its current Jhampir Power 50 MW wind project which was delivered on scheduled time. The combination of HDEC and GE global capability as well as experience in Pakistan will help to develop and run the BWEPL's project on time

and within specifications. The petitioner also submitted the type certificate issued by TUV Nord for the proposed WTG. Further, it has also provided a letter dated July 14, 2018 written by General Electric to AEDB stating that GE, China will provide brand new WTGs and that will be reliable, efficient and of highest international standards with proven technology.

32. The Authority in the recent tariff determinations of wind power projects has approved the capacity factor based on the results of Energy Reports as submitted by those project companies while maintaining certain thresholds. On that basis, the Authority understands that the net annual plant capacity factor as claimed by the petitioner is reasonable and decided to approve the same. Further, the Authority has decided to approve the following sharing mechanism for the energy production beyond the set net annual plant capacity factor:

| <u>Net annual plant capacity factor</u> | <u>% of prevalent tariff allowed to power producer</u> |
|---|--|
| Above 41.10% up to 43.10% | 5% |
| Above 43.10% up to 45.10% | 10% |
| Above 45.10% up to 47.10% | 20% |
| Above 47.10% up to 49.10% | 40% |
| Above 49.10% up to 51.10% | 80% |
| Above 51.10% | 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 0.675 million per annum i.e. USD 48,913 per MW per annum for project operation period. The petitioner submitted the O&M contract for the initial 2 years (i.e. warranty period) has been signed with HDEC Engineering (Pvt.) Ltd. on April 23, 2018 for a contract price of USD 0.675 million. The petitioner submitted that O&M cost component caters for the cost of services rendered by the O&M operator. In addition this component also includes cost expected to be incurred by the project locally such as local staff, administrative expenses, corporate fees, audit fees, advisory fees etc. and replacement of parts necessitated due to regular operation/normal wear and tear.

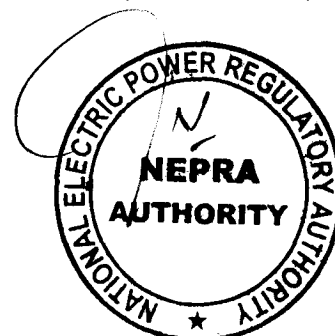


The petitioner submitted that local O&M component is 50% and foreign component is 50%.

34. The Authority has recently determined tariffs of fifteen wind power projects (having size of 50-60 MW each) wherein the Authority approved USD 23,000/MW per year while considering the latest available O&M cost data in different parts of the world. However, the Authority has noted that O&M cost in terms of per MW for BWEPL is supposed to be higher than projects having comparatively bigger sizes. Nevertheless, it is reiterated that the Authority is of the view that consumers should not be burdened with the higher cost due to the reason that the project company has decided to build a plant which is smaller than standard size of wind power plants. The Authority also noted that the petitioner has submitted (multiple times) that it is the second wind power project being developed by the project's sponsors. In relation to that, it was found that the Authority while evaluating cost of three solar power projects of 50 MW each, which are being developed by one sponsor, considered them as one project of 150 MW and approved its O&M cost accordingly. On the same basis, the Authority has decided to maintain the O&M cost of USD 23,000 per MW per annum for BWEPL as approved for other wind power projects. The approved O&M cost has been divided into local and foreign components in the ratio of 50:50.

Whether the claimed insurance during operation cost is justified?

35. The petitioner has claimed USD 0.097 million per annum based on 0.4% of claimed EPC cost on account of insurance during operation. The petitioner submitted that the insurance cost consists of operations all risk insurance for the project as well as business-interruption insurance. The petitioner submitted that these 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/Reinsurance 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 risks to be covered through insurance will include machinery breakdown, natural calamities (like earthquake, floods, etc.), sabotage and consequential business interruption, etc.
36. The Authority has allowed insurance during operation at the rate of 0.4% of the EPC cost in the most recent determination of wind power projects. Similarly, the Authority has decided



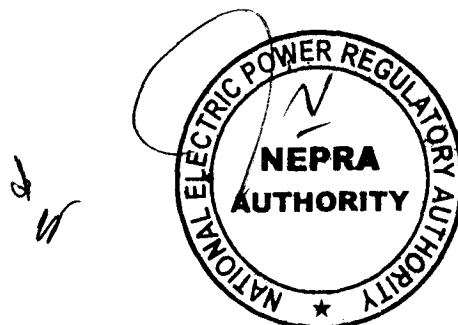
To allow insurance during operation at maximum limit of 0.4% of the approved EPC cost to BWEPL. This cost shall be allowed adjustment on annual basis as per the mechanism given in the order part of this determination.

Whether the claimed return on equity is justified?

37. The petitioner claimed return on equity (ROE) and Return on Equity During Construction (ROEDC) of 15% (IRR basis) separately on invested equity net of withholding tax. The petitioner further submitted that the withholding tax component has not been identified as a separate line item in the tariff as the same is assumed to be paid on all equity components i.e. ROE and ROEDC, at actual as a pass-through item under the tariff.
38. The Authority noted that it has allowed ROE of 14% in all the recent tariff determination for wind power projects. Hence, the Authority has decided to approve the ROE at the rate of 14% for the petitioner also. 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?

39. The petitioner has submitted that 50% foreign loan and 50% local loan shall be secured for the project based on assumed debt to equity ratio of 75:25. The interest rate of LIBOR (0.6%) plus 4.50% and KIBOR (6%) plus 2.5% for foreign and local loans respectively has been claimed in the petition for the debt servicing period of thirteen years. The petitioner has submitted indicative term sheet signed with the lenders (Meezan Bank Ltd) with the petition.
40. The Authority has considered the terms of financing being claimed by the petitioner. The Authority has noted that the State Bank of Pakistan ("SBP") has issued concessionary financing scheme in June, 2016. Under the said scheme, renewable energy projects having capacity of up to 50 MW can secure loan up to the limit of Rs. 6 billion at the rate of 6% for the minimum debt servicing tenor of ten years. The size of the project being setup by the petitioner is 13.8 MW which makes it eligible to avail financing under SBP scheme. The Authority has therefore decided to approve the reference tariff of BWEPL on the terms of financing scheme issued by SBP and hereby direct the petitioner to approach SBP for this purpose.



41. In case the petitioner is not able to secure financing under SBP scheme then the tariff of BWEPL 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.
42. The Authority has decided to approve the tariff of BWEPL on the basis of debt to equity ratio of 80:20 which shall remain same regardless of any form of financing secured by the petitioner.

Whether the claimed construction period is justified?

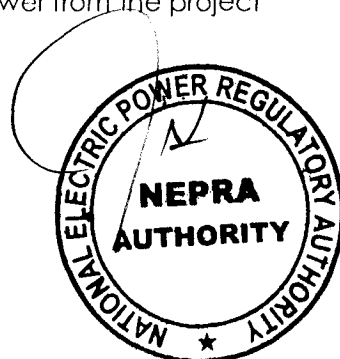
43. The petitioner during the hearing apprised the Authority that it has mistakenly mentioned construction period of eighteen (18) months in the tariff petition whereas the construction period be considered as 14 months. The Authority noted that it has approved construction period of fifteen months (from the date of financial close) in the recently approved tariff cases of wind power projects (50-60 MW). However, the size of BWEPL is considerably smaller than those projects. In view thereof, the Authority has decided to approve construction period of 10 months for BWEPL.

Any other issue with the approval of the Authority.

Comments of CPPA-G

44. CPPA-G submitted that NEPRA may consider the Planning Code PC-4 of Grid Code which provides that NTDCL shall prepare to deliver to NEPRA a ten year Indicative Generation Capacity Expansion Plan ("IGCEP") covering 0-10 year timeframe. Further, CPPA-G submitted that the quantum specifically in the case of renewable energy from 2017-18 has not been approved/finalized by the Grid Code Review Panel ("GCRP"). Furthermore, CPPA-G has not given any consent to purchase power from the project

5
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45. The petitioner responded to CPPA-G comments vide letter dated August 16, 2018 wherein it submitted that BWEPL has been granted grid connectivity approval by NTDCL through letter dated April 7, 2017 after considering all the requirements for IGCEP in grid study. The petitioner also submitted that NTDCL has considered the project in its expansion plan for the year ending June 2019 as mentioned in NTDCL's letter dated December 15, 2016. Further, the petitioner submitted that the renewable energy quantum for 2017-18 by NTDCL is of no consequence for our project which will start generating electricity by 2020. Furthermore, the petitioner submitted that there is no such requirement to have the consent of the power purchaser for tariff application under NEPRA Tariff Rules, 1998.
46. It has been noted that as per approved Grid Code Addendum No. 1 (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. Further, it was observed that NTDCL vide its letter dated June 23, 2017 submitted Power Balance up to 2025 under section PC-4 of NEPRA Grid Code as per which NTDCL plans to evacuate 600 MW additional power from wind power projects in 2019-20 through competitive bidding and further 500 MW collectively from wind and solar power projects in 2020-21. The Authority also noted that NTDCL vide its letter dated April 7, 2017 has approved the grid study of the project for power evacuation/interconnection. Furthermore, the Authority noted that power purchaser's consent is not required to be obtained under Tariff Rule, 1998.

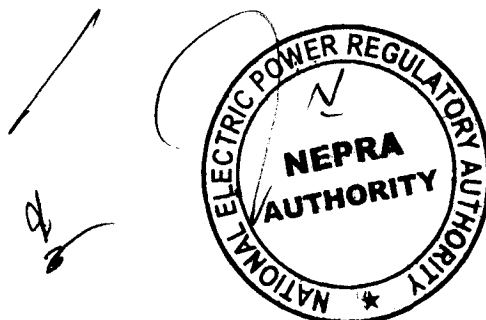
47. **ORDER**

In pursuance of section 7(3) (a) read with section 31 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 Burj Wind Energy (Pvt.) Limited for its 13.8 MW wind power project for delivery of electricity to the power purchaser:



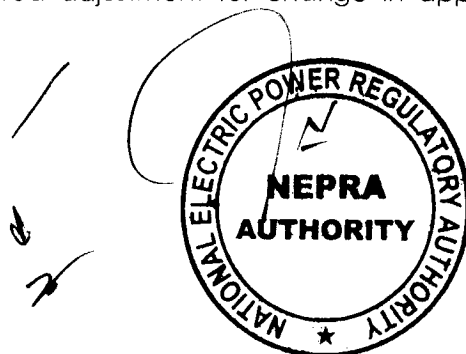
| Tariff Component | Rs./kWh | |
|---------------------------------|---------------|---------------|
| | Year 1-10 | Year 11-25 |
| Operations and Maintenance Cost | 0.7666 | 0.7666 |
| Insurance during Operation | 0.1726 | 0.1726 |
| Return on Equity | 1.4261 | 1.4261 |
| Debt Servicing | 5.1419 | - |
| Total | 7.5071 | 2.3653 |

- Levelized tariff works out to be US Cents 4.8717/kWh.
- EPC cost of USD 17.866 million has been considered.
- PDC cost of USD 1.200 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 41.10% 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 ten (10) 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.
- The petitioner has submitted M/s TUV Nord certification No. 4422016672205-TC-IEC, Rev. 2 dated June 23, 2017 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.
- 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.
- 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 ten 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.



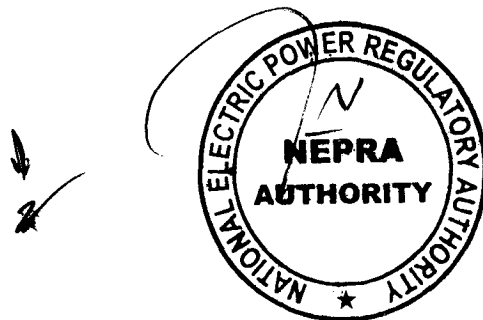
- The tariff has been determined on debt: equity ratio of 80:20. The tariff shall be adjusted on actual debt: equity mix at the time of COD, subject to equity share of not more than 20%. For equity share of more than 20%, allowed IRR shall be neutralized for the additional cost of debt: equity ratio.
- 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 ten 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 1st January or 1st 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:



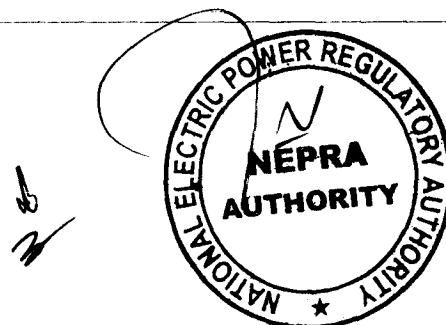
| | | |
|-------------------|---|---|
| $F. O\&M_{(REV)}$ | = | $F. O\&M_{(REF)} * US CPI_{(REV)} / US CPI_{(REF)} * ER_{(REV)} / ER_{(REF)}$ |
| $L. O\&M_{(REV)}$ | = | $L. O\&M_{(REF)} * CPI_{(REV)} / CPI_{(REF)}$ |
| Where; | | |
| $F. O\&M_{(REV)}$ | = | The revised O&M Foreign Component of Tariff |
| $L. O\&M_{(REV)}$ | = | 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 252.038 for the month of November, 2018 |
| $CPI_{(REV)}$ | = | The revised CPI (General) |
| $CPI_{(REF)}$ | = | The reference CPI (General) of 234.75 for the month of November, 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 principal 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.



↓
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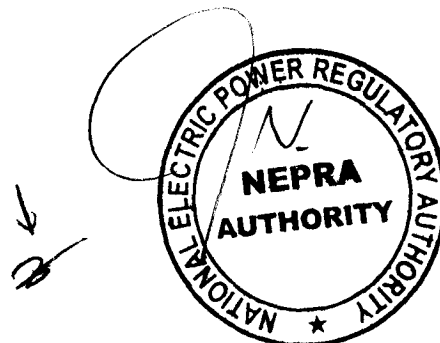
C. Terms and Conditions

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

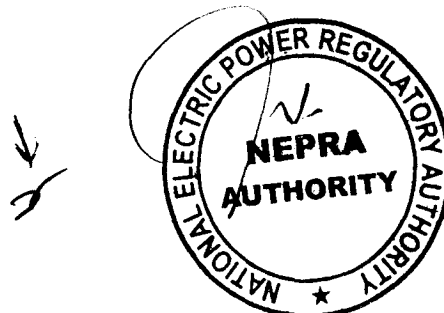
- All plant and equipment shall be new and of acceptable standards. The verification of the plant and equipment will be done by the independent engineer at the time of the commissioning of the plant duly appointed by the power purchaser.
- The Authority may consider revising approved O&M cost after the completion of debt servicing period. For that purpose, the Authority may require the project company to carry out competitive bidding while considering the approved cost as ceiling.
- This tariff will be limited to the extent of net annual energy generation supplied to the power purchaser up to 41.10% net annual plant capacity factor. Net annual energy generation supplied to the power purchaser in a year, in excess of 41.10% 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 41.10% up to 43.10% | 5% |
| Above 43.10% up to 45.10% | 10% |
| Above 45.10% up to 47.10% | 20% |
| Above 47.10% up to 49.10% | 40% |
| Above 49.10% up to 51.10% | 80% |
| Above 51.10% | 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

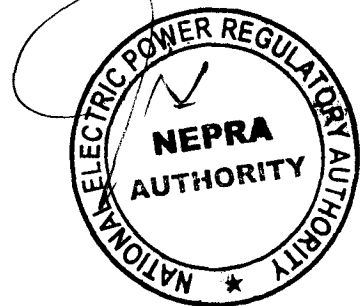


- operational record/log of all the wind turbines on quarterly basis to verify output/capacity of the power plant.
- The risk of wind resource shall be borne by the power producer.
 - In the tabulated above tariff no adjustment for certified emission reductions has been accounted for. However, upon actual 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 (Sinosure 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.

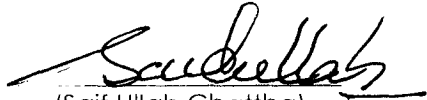
- The targeted maximum construction period after financial close is ten months. No adjustment will be allowed in this tariff to account for financial impact of any delay in project construction. However, the failure of the company to complete construction within ten months will not invalidate the tariff 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 a pass through item.
- 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.






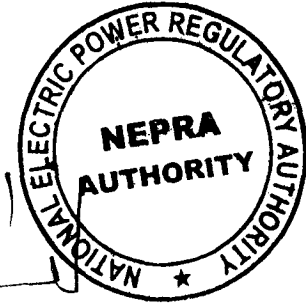
48. The Order part along with two Annexures is recommended for notification by the Federal Government in the official gazette in accordance with Section 31(7) of the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997.

AUTHORITY


(Saif Ullah Chattha)
Member 20.2.2019


(Rafique Ahmed Shaikh)
Member

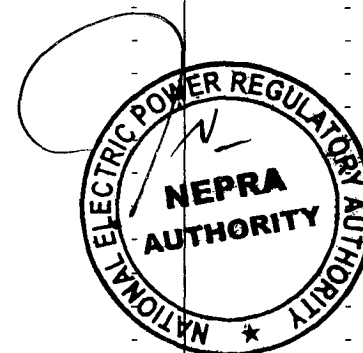

(Rehmatullah Baloch)
Vice Chairman




20-2-19

BURJ WIND ENERGY (PVT.) LIMITED
REFERENCE TARIFF TABLE

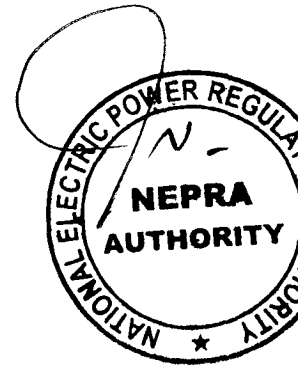
| Year | Foreign O&M | Local O&M | Insurance | Return on Equity | ROEDC | Loan Repayment | Interest Charges | Tariff |
|-------------------------|---------------|---------------|---------------|------------------|---------------|----------------|------------------|---------------|
| | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh | Rs. / kWh |
| 1 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 2.8989 | 2.2429 | 7.5071 |
| 2 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 3.0768 | 2.0651 | 7.5071 |
| 3 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 3.2656 | 1.8762 | 7.5071 |
| 4 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 3.4660 | 1.6759 | 7.5071 |
| 5 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 3.6787 | 1.4632 | 7.5071 |
| 6 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 3.9045 | 1.2374 | 7.5071 |
| 7 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 4.1441 | 0.9978 | 7.5071 |
| 8 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 4.3984 | 0.7435 | 7.5071 |
| 9 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 4.6682 | 0.4736 | 7.5071 |
| 10 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 4.9547 | 0.1872 | 7.5071 |
| 11 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 12 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 13 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 14 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 15 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 16 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 17 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 18 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 19 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 20 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 21 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 22 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 23 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 24 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| 25 | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | - | - | 2.3653 |
| Levelized Tariff | 0.3833 | 0.3833 | 0.1726 | 1.3460 | 0.0801 | 2.4849 | 0.9958 | 5.8460 |



BURJ WIND ENERGY (PVT.) LIMITED
DEBT SERVICING SCHEDULE

Annex-II

| 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 | 15,922,387 | 293,403 | 238,836 | 15,628,984 | 532,239 | 2.8989 | 2.2429 |
| 2 | 15,628,984 | 297,805 | 234,435 | 15,331,180 | 532,239 | | |
| 3 | 15,331,180 | 302,272 | 229,968 | 15,028,908 | 532,239 | | |
| 4 | 15,028,908 | 306,806 | 225,434 | 14,722,102 | 532,239 | | |
| 5 | 14,722,102 | 311,408 | 220,832 | 14,410,695 | 532,239 | | |
| 6 | 14,410,695 | 316,079 | 216,160 | 14,094,616 | 532,239 | 3.0768 | 2.0651 |
| 7 | 14,094,616 | 320,820 | 211,419 | 13,773,796 | 532,239 | | |
| 8 | 13,773,796 | 325,632 | 206,607 | 13,448,163 | 532,239 | | |
| 9 | 13,448,163 | 330,517 | 201,722 | 13,117,647 | 532,239 | | |
| 10 | 13,117,647 | 335,475 | 196,765 | 12,782,172 | 532,239 | | |
| 11 | 12,782,172 | 340,507 | 191,733 | 12,441,665 | 532,239 | 3.2656 | 1.8762 |
| 12 | 12,441,665 | 345,614 | 186,625 | 12,096,051 | 532,239 | | |
| 13 | 12,096,051 | 350,799 | 181,441 | 11,745,252 | 532,239 | | |
| 14 | 11,745,252 | 356,060 | 176,179 | 11,389,192 | 532,239 | | |
| 15 | 11,389,192 | 361,401 | 170,838 | 11,027,791 | 532,239 | | |
| 16 | 11,027,791 | 366,822 | 165,417 | 10,660,968 | 532,239 | 3.4660 | 1.6759 |
| 17 | 10,660,968 | 372,325 | 159,915 | 10,288,643 | 532,239 | | |
| 18 | 10,288,643 | 377,910 | 154,330 | 9,910,734 | 532,239 | | |
| 19 | 9,910,734 | 383,578 | 148,661 | 9,527,156 | 532,239 | | |
| 20 | 9,527,156 | 389,332 | 142,907 | 9,137,824 | 532,239 | | |
| 21 | 9,137,824 | 395,172 | 137,067 | 8,742,652 | 532,239 | 3.6787 | 1.4632 |
| 22 | 8,742,652 | 401,099 | 131,140 | 8,341,552 | 532,239 | | |
| 23 | 8,341,552 | 407,116 | 125,123 | 7,934,436 | 532,239 | | |
| 24 | 7,934,436 | 413,223 | 119,017 | 7,521,214 | 532,239 | | |
| 25 | 7,521,214 | 419,421 | 112,818 | 7,101,793 | 532,239 | | |
| 26 | 7,101,793 | 425,712 | 106,527 | 6,676,080 | 532,239 | 3.9045 | 1.2374 |
| 27 | 6,676,080 | 432,098 | 100,141 | 6,243,982 | 532,239 | | |
| 28 | 6,243,982 | 438,580 | 93,660 | 5,805,403 | 532,239 | | |
| 29 | 5,805,403 | 445,158 | 87,081 | 5,360,244 | 532,239 | | |
| 30 | 5,360,244 | 451,836 | 80,404 | 4,908,409 | 532,239 | | |
| 31 | 4,908,409 | 458,613 | 73,626 | 4,449,796 | 532,239 | 4.1441 | 0.9978 |
| 32 | 4,449,796 | 465,492 | 66,747 | 3,984,303 | 532,239 | | |
| 33 | 3,984,303 | 472,475 | 59,765 | 3,511,829 | 532,239 | | |
| 34 | 3,511,829 | 479,562 | 52,677 | 3,032,267 | 532,239 | | |
| 35 | 3,032,267 | 486,755 | 45,484 | 2,545,511 | 532,239 | | |
| 36 | 2,545,511 | 494,057 | 38,183 | 2,051,455 | 532,239 | 4.3984 | 0.7435 |
| 37 | 2,051,455 | 501,467 | 30,772 | 1,549,987 | 532,239 | | |
| 38 | 1,549,987 | 508,989 | 23,250 | 1,040,998 | 532,239 | | |
| 39 | 1,040,998 | 516,624 | 15,615 | 524,374 | 532,239 | | |
| 40 | 524,374 | 524,374 | 7,866 | (0) | 532,239 | | |



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