LIBERTY WIND POWER 2 (PVT) LTD.

Formerly **Noor Solar Energy (Pvt) Ltd**

December 29, 2017

Ref:- No. LWP2/TP2/N1

The Registrar
NEPRA Tower Attaturk Avenue (East),
Sector G-5/1, Islamabad.

Subject:-Submission of Cost Plus Tariff Petition for Reference Tariff for Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited)

Dear Sir,

Below is the list of documents which we are submitting along with the Cost Plus Tariff Petition for Reference Tariff for Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited).

1. **Tariff Petition for reference tariff**
2. **Board Resolution**
3. **Cheque in name of NEPRA of Rs. 612,128** CHQ#10133908 OF BANK AL HABIB
4. **Affidavit**
5. **Expression of Interest of Faysal Bank Limited**
6. **Expression of Interest of CDC**
7. **Certificate of Incorporation of Change of Name**
8. **Letter of Intent Issued by Energy Department-Govt of Sindh**
9. **Extension in Validity of Letter of Intent Issued by Energy Department-Govt of Sindh**
10. **Power Acquisition Request**
11. **Follow-up letter of Power Acquisition Request**
12. **Minutes of Panel of Experts Meeting regarding Approval of Feasibility Study**
13. **Generation License**
14. **Approval of Environmental Protection Agency**
15. **Agreement of Lease of Land**
16. **Offshore Supply Contract**
17. **Offshore Supply Schedules**
18. **Construction Contract**
19. **Construction Schedules**
20. **WP O&M Contract**
21. **Project Coordination Agreement**

Kindly acknowledge the receipt.

Best regards,

Tanveer Ahmed
Project Director
Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited)
03332145911

Before

The National Electric Power Regulatory Authority

COST PLUS TARIFF APPLICATION

CONTENTS:

FOR 50MW Wind Power Project
AT

JHIMPIR, DISTRICT THATTA, PROVINCE OF SINDH,
PAKISTAN.

JHIMPIR, DISTRICT THATTA, PROVINCE OF SINDH,
PAKISTAN.

Before

The National Electric Power Regulatory Authority

Tariff Petition for Reference Tariff

for

Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited)

FOR 50MW Wind Power Project
AT

JHIMPIR, DISTRICT THATTA, PROVINCE OF SINDH,
PAKISTAN.

DATED: December 28th, 2017

CONTENTS

Section 1. Petitioner's Information

1.1 Name of Petitioner

Name: Liberty Wind Power 2 (Private) Limited ("LWP2L", the "Project Company" or the "Petitioner").

Address: A/51-A, SITE, Karachi.

Email: kashif.hanif@libertymillslimited.com

Company Registration No: 009286

1.2 Project Sponsors

[redacted]	Sponsor

1.3 Representative of the Petitioner

[redacted]	Authorized Representative of LWP2L

1.4 Project Advisors

[redacted]	Technical Advisors

Section 2. Grounds for Petition

2.1 Basis for Petition

This Petition is made to the National Electric Power Regulatory Authority ("NEPRA") under the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of) 1997 (the "NEPRA Act") and the Tariff Standards and Procedure Rules, 1998 (the "NEPRA Rules") made under the NEPRA Act; and other applicable laws.

Under the NEPRA Act, the Authority is responsible for determining tariffs, rates and other terms and conditions for the supply of electric power services by the generation, transmission and distribution companies and recommending them to the Federal Government for notification. NEPRA is also responsible for determining the process and procedures for reviewing and approving tariffs and tariff adjustments.

2.2 About the Petitioner - Brief

Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited) ("LWP2L") ("Project Company") (a company incorporated under the laws of Pakistan), with its office located at A/51-A, SITE, Karachi was incorporated on 8th April 2015 to develop, own and operate an approximately 50 MW wind power project in Jhimpir, Thatta pursuant to a Letter of Intent (LOI) dated 28th August 2015 (Annexure A) issued by the Energy Department Government of Sindh (EDGOS) vide its letter No. DAE/Wind/81/2015, which LOI was issued by the EDGOS to the parent company of the Project Company i.e. Liberty Mills Limited. Subsequent to the incorporation of the Project Company, the EDGOS has recognized that the Project Company will undertake the Project pursuant to the LOI, as evidenced by the EDGOS' letter dated 28th August 2015. The Project is to be developed under the guidelines of "Policy for Development of Renewable Energy Projects 2006" (the "RE Policy") issued by the Government of Pakistan.

2.3 Process Leading to Tariff Petition

Pursuant to the relevant provisions of the Policy for Development of Renewable Energy for Power Generation 2006 (the "RE Policy 2006") and the LOI, LWP2L completed the

detailed technical feasibility study for the project. The following milestones have been achieved leading up to the submission of tariff petition.

- The technical consultants completed the initial environmental examination for the project and was submitted to the Sindh Environmental protection Agency on 17Th March 2016.
- Grid Interconnection Study was conducted by Independent Consultant i.e. M/s Power Planner Internation which was approved by NTDC on 31 May 2017.
- The land for the Project has already been allotted by Government of Sindh (GOS) for a period of 30 years through Land Allotment letter Reference No: 01-63-2015/SO-VI/04 dated 14th January 2016.
- Power Evacuation Certificate (PEC) was issued to LWP2L on 31 May 2017 (Annexure B).
- Generation License (GL) application was submitted to NEPRA on 21st February 2017. NEPRA granted generation license to the Project on 1st August 2017. (Annexure C).
- Request for issuance of Consent of Power Acquisition Request (PAR) has been made to CPPA (G) on 1rd June 2017 (Annexure D).
- EPC and O&M Contracts for the Project has been executed on 15th October 2017 (Annexure E).
- Approval of Feasibility Study from EDGOS Panel of Experts have been granted on 7th November 2017.
- Project debt funding (80% of the project cost) has been arranged from local and foreign banks (Annexure F). Sponsors have arranged the remaining 20% of the project cost as equity investments.

All requisite information required by NEPRA for processing the Petition has been annexed herewith; LWP2L will be pleased to submit any further information as and when required by NEPRA in connection with the determination.

Accordingly, it is submitted that the requirements of the regulatory process for applying to NEPRA for the tariff determination of LWP2L's 50 MW power generation facility to be located at District Thatta, Sindh have been completed.

2.4 Background of filing Cost Plus Tariff

It is very pertinent to present some background that has encouraged the Petitioner to file this Petition. Since the issuance of the LOI, the Petitioner completed the Project Feasibility Study on a very fast track and submitted the same to the EDGOS in first quarter of 2016. Due to the non-issuance of the regulatory approvals required for applying tariff by relevant governmental entities, the wind power projects including the Petitioner was unable to obtain the then prevailing upfront tariff.

The proceedings for a new upfront tariff started and a hearing was called by NEPRA to discuss the new proposed upfront tariff during mid of 2016. The topic of tariff through reverse bidding was also discussed in the hearing. After approx. six (06) months, a reverse bidding tariff was announced by NEPRA in January 2017 with an instruction to the relevant agencies to conduct a reverse bidding process – an outcome that was completely unexpected.

It has been approx. twelve (12) months since announcement of NEPRA's benchmark tariff and subsequent instruction to relevant agencies to conduct the bidding process, however, no formal tariff bidding has been initiated to date. The only option available, etariff under the NEPRA Rules.

The Petitioner hereby pleads to NEPRA, and through NEPRA to other relevant stakeholders, to take a view on this Project, the viability of which has been discussed in the next sections of the Petition.

2.5 Request for Tariff Determination - Submission

In accordance with the requirements of the NEPRA Act, NEPRA Rules and the Policy for Development of Renewable Energy Project 2006 (RE Policy), Petitioner hereby submits this Petition for determination/approval of the Reference Tariff (Negotiated Tariff under Cost-Plus regime) along with adjustments, pass-through items, indexation mechanisms and other terms and conditions for supply of electric power service to CPPA (G) (the "Power Purchaser") from the Project.

Pursuant to the relevant provisions of the NEPRA Act, NEPRA Rules, the RE Policy 2006, LML submits herewith before NEPRA, this Petition for approval of

(i) the Reference Tariff (Negotiated Tariff under Cost-Plus regime);
(ii) the Indexations, Adjustments and Escalations;
(iii) adjustments at Commercial Operations Date (COD) and
(iv) other matters set out in this Tariff Petition, in each case, for the Project Company's power generation Project to be located at Jhimpir District Thatta, Sindh.

NEPRA (the Authority) is requested to process the Petition at the earliest, thereby enabling the Project Company to proceed further with the development and construction process.

	Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited (LWP2L)		
	Liberty Group / Liberty Mills Limited (LML)		
	50 MW		
	Jhimpir, Nooriabad, District Thatta, , Province of Sindh, Pakistan		
	~~330 acres~~		
	~~Central Power Purchasing Agency Guarantee Limited~~		
	Gamesa G114-2.0		
	166.44 GWh		
	38%		
	15 months		
	25 Years		
	BOO		
	[redacted]		
	EPC Cost		78.00
	Land Cost		0.52
	Insurance during Construction		0.55
	Duties and Taxes		1.03
	Non-EPC Cost		0.79
	Project development cost		2.83
	~~Financial Fee and Charges~~		~~1.41~~
	~~Interest during Construction~~		~~3.08~~
	Total Project Cost		88.21
	[redacted]		
	Equity	20%	17.64
	Debt	80%	70.57
	Total Financing	100%	88.21

Section 3. Executive Summary

Local Financing lead		-	-
SBP RE Refinance Facility by FYBL		50%	35.28
Foreign Financing from CDC		50%	35.29
Total Debt		100%	70.57

Loan Term	-	35.28	35.29
Debt Repayment	-	40 Installments	52 Installments
Mark-up rate	-	fixed rate of 2% + 1.75%.	3-M LIBOR 1.57% + 4.25%.

Operations Cost	O & M	1.9	1.9
	Insurance Cost	0.39	0.39

~~US$ 6.8684 per kWh~~

~~1 US$ = PKR 105~~

Lahmeyer / Renewable Resources (Private) Limited

The Petitioner opted for an International Competitive Bidding Process for selection of the EPC Contractor and the WTG.

- Energy Purchase Agreement
- Implementation Agreement
- Government of Pakistan Guarantee

RE Policy 2006

- Letter of Intent
- Land Allotted

[redacted]	▪ Topographical Study ▪ Transportation Study ▪ Geo-technical Study ▪ Wind Resource Assessment Study ▪ Feasibility Study ▪ Grid Interconnection Study ▪ Initial Environmental Examination ▪ EPC and O&M Agreements ▪ Term sheet / financial arrangements from Project Lenders

Section 4. The Project

4.1 Pakistan's Current Electric Power Shortage

Pakistan currently has around 25.374 GW (State of Industry Report 2016) of installed capacity for electricity generation. Conventional thermal plants (oil, natural gas, coal) account for 65.5% of Pakistan's capacity, with hydroelectricity making up 28%, nuclear 3.1% and Renewable Energy (Wind, Solar & Bagasse) 3.4%.

Pakistan's huge energy crisis is jeopardizing its economic progress and social development. The major reasons for the energy crises are the lack of investment in power sector in the past, non-development of renewable energy sector i.e. hydel, wind and solar etc. and the depleting of oil and gas reserves. It is imperative for Pakistan to look for indigenous/cheap energy resources for sustainable growth through self-reliance.

Pakistan has been facing severe power shortage for the last few years and inclusion of renewable energy in the electrical power system is the optimum solution. Renewable energy is the cheapest form for energy with no environmental impacts. Pakistan has abundant renewable resources which should be utilized to provide affordable electric energy to its people.

4.2 Wind Power Projects – A Natural Choice

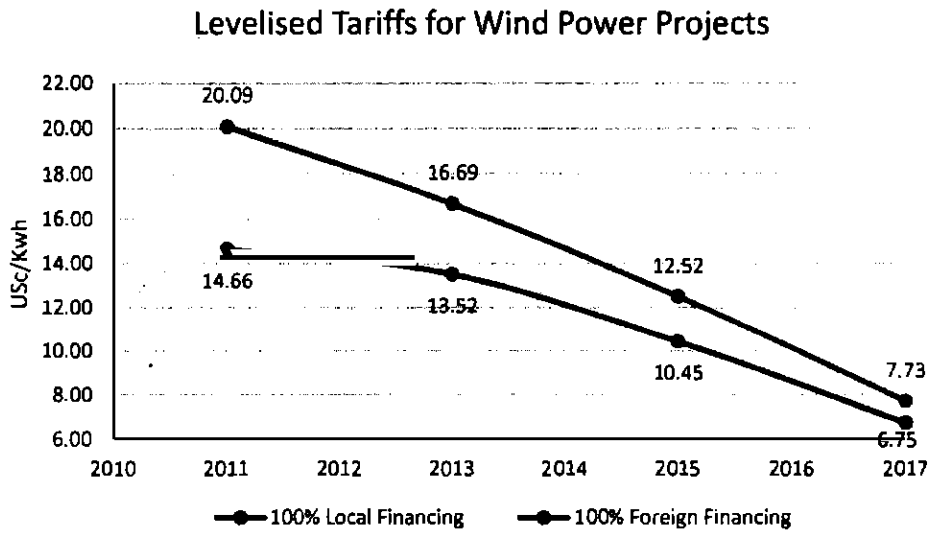
To ensure a sustainable energy future for Pakistan, it is necessary that the energy sector be accorded a high priority. It is considered that wind power generation could become a significant contributor to Pakistan's electricity supply in the near future. The development of wind generation projects supports the environmental objectives of the Government of Pakistan by:

(a) reducing dependence on fossil fuels for thermal power generation;
(b) increasing diversity in Pakistan's electricity generation mix;
(c) reducing greenhouse gas emissions through avoidance of thermal power generation; and
(d) helping in reduction of the exorbitant trade deficit.

Pakistan has a huge wind potential which can be effectively and efficiently utilized for the economical generation of Power. The coastal belt of Pakistan is blessed with a wind corridor that is 60 km wide (Gharo -Kati Bandar) and 180 km long (up to Hyderabad). This corridor has potential of 50,000 MW of electricity generation through wind energy that is ready to be exploited. Currently fifteen (15) wind energy projects having a combined capacity of 788.5 MW are operational and 9 wind energy projects having a combined capacity of 445.8 MW are at different stages of construction.

Wind Tariff is at an all-time low

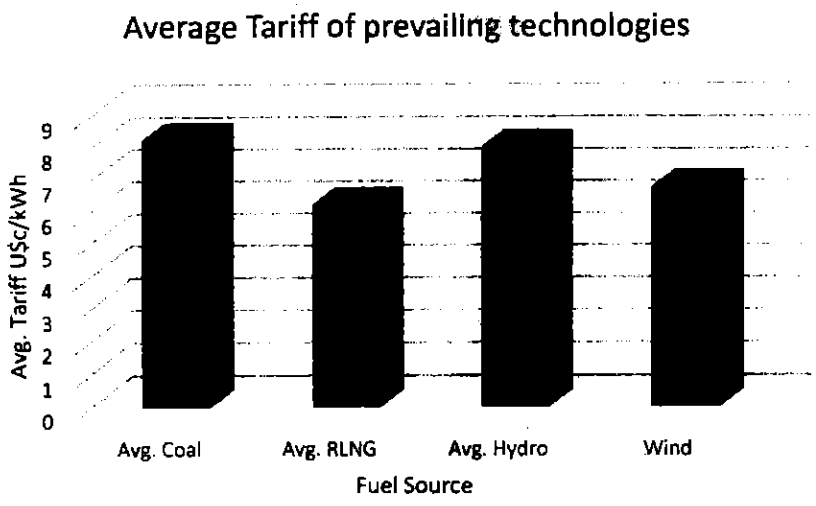
The current tariffs of wind power are at an all-time low in Pakistan. The graph below shows the history of wind power tariffs since the start of the upfront tariff regime:



Wind Tariff is cheaper than other technologies

The wind tariffs are even lower than each of the newly constructed / under construction / under pipeline projects of Hydro and Coal. Moreover, the Coal and LNG tariffs are not expected to come down in future due to fuel charge whereas the wind power tariff does not have a fuel charge at all. With regards to the emerging LNG, the tariffs are cosmetically low at the moment but these are subject to escalations on the LNG price in future, which is definitely expected to rise.

The following computation is of the technology wise average tariffs lately determined by NEPRA:



Wind Power has more usefulness when Base Load is secured

The Petitioner is hopeful that the country will overcome the power shortfalls faced in recent years and achieve security of base load soon. It is pertinent to note that wind power generation becomes even more useful in cases where secure base load is available. **The cheaper electricity offered by wind projects can be utilized as much as possible when available and demand in low wind period can be supplemented through base load plants.**

The tariff of wind is in one part and is continuously decreasing over the life cycle. The tariff of thermal plants is in two parts, wherein 70%-80% of the total tariff goes in fuel cost – a component that is expected to rise in future.

Most of the base load plants have an energy component (excluding capacity charge) higher than the total wind tariff. The Power Purchaser (and as a result the consumers) can realize significant savings by replacing expensive base load plants with wind power generation in high wind periods wherein the high wind periods in Pakistan coincide with the high demand periods (summer months).

Sustainability of Power Sector – Need to look back in history

The presumption that Pakistan will overcome its electricity shortfall due to current pipeline projects, therefore no further expansion in generation capacity is required, can prove to be fatal in the years to come. A similar situation existed after the Thermal IPPs

were constructed under the Power Policy of 2002. It was expected that Pakistan will generate surplus electricity by 2005-06 and the Planning Commission of Pakistan was eying to export electricity to our neighbors. No material generation plans were developed during that time period and the country's generation mix became heavily dependent on imported fuel based thermal power plants. As a result, Pakistan was one of the few developing countries during last one decade that experienced crippling electricity shortfalls of as much as 8-10 hours per day in urban areas and 15-18 hours per day in rural areas. The main reasons for the energy crisis are briefly summarized below:

- The heavily imported fuel-dependent energy mix collapsed on a huge scale when (1) oil prices across the world jumped, and (2) the PKR-USD parity went high. Generation of electricity from thermal sources became extremely unviable and the country was unable to operate its existing thermal plants at full capacity due to lack of capacity to purchase imported fuel.

- Local gas reserves were over-exploited and failed to meet demand requirements, especially during the winter months. Either gas power plants were required to be shut down or supply of gas to other sectors (industry, transport, domestic) suffered.

- There were no power projects in the pipeline that could start contributing on short notice and replace the then expensive thermal sources – the key for continuity of power sector.

Due to the aforementioned lack of perception, the reaction to the energy crisis could only begin once the country was already in a state of emergency. After more than a decade of crippling shortfalls, we are finally at a point where the shortfalls can be overcome. A conservative approach toward setting up of new projects from now onwards is completely contrary to the lessons learnt from the past. This applies to wind power projects as well.

The dynamics of the power sector are such that new power projects cannot be planned and implemented overnight. Typically, development of a batch of projects from the LOI stage till commencement of commercial operations, takes approximately five (05) years; for large hydro projects this period may stretch to up to ten (10) years. These timings are evident in each development era of the power sector in Pakistan.

Another factor that must be highlighted is that demand for electricity is constantly expected to increase. Current demand forecasts for Pakistan are based on the suppressed demand that exists during a power crisis. Future demand forecasting should not merely account for the increase in demand from existing consumers; rather, it should also account for consumption of electricity from other sources (like electric trains, electric

buses, public infrastructure, rural electrification, electrical heating etc.), which have contributed to the accelerated development of western nations when they had more electricity than they require.

Wind Power has no technical challenges on the Grid System

NTDC has granted Grid Interconnection Study approval to wind power projects totaling 1224 MW; thereby establishing the technical capacity of the grid to sustain these projects. There is no instability caused by integration of these power plants in the national grid. The timing of these plants to come into operations is also in-line with NTDC's plans to make the required infrastructure for them.

It is worth recognizing the handsome effort made to undertake a wider study, funded by USAID and conducted by renowned international consultant Intec Gopa of Germany, in order to verify the technical viability of additional wind and solar capacity in Pakistan. The study concluded that 1731 MW of wind power capacity could be installed by 2016-2017; of which a total of 500 MW is yet to be installed. Moreover, the same study also concluded that a cumulative 5455MW of wind (3724 MW in addition to the 1731 MW) can be integrated into the grid system by the year 2019-20 or later, without destabilizing the national grid system. For a clear understanding, 1224 MW approved by NTDC in the form of grid studies is 500 MW out of the 1731 MW (Spot Year 1 – 2016-17) and remainder 724 MW out of 3724 MW (Spot Year 2 (2019-20) or later), if read in the context of Gopa report.

In view of the above, it is a very irrational to ignore these efforts and under-utilize the potential available for wind projects. The 1224 MW plan should be put up right away as there is no technical challenge, it is well within the studies & plans and wind power is cheaper than other available option. **The debates on policy level topics like quota etc must not become harmful for the pipeline projects that have already made significant progress before the eyes of policy makers.**

There is no reason to say NO to Wind Power

There is no doubt regarding the benefits of adding wind power capacity to the energy mix of Pakistan, as summarized in the preceding sections. It will be extremely detrimental for Pakistan as a whole to lose out on the benefits of wind power while debating issues such as the quota of wind power, commenting on the wind tariff values (which are at an all-time low) etc. The potential of wind resource in Pakistan, the lower tariff for wind power projects and the short construction period all make this technology a strong candidate for promotion and inclusion in the energy mix. **Every single unit of electricity generated by a wind power project will reduce the burden faced by the**

national exchequer from generation through other foreign fuel dependent sources.

The International Statistics of Wind Power1

In order to further understand where wind power can extend itself, it is very important to observe the growth trends of wind power in the world and the massive deployment taking place every year all across the globe, while we are still struggling against barriers.

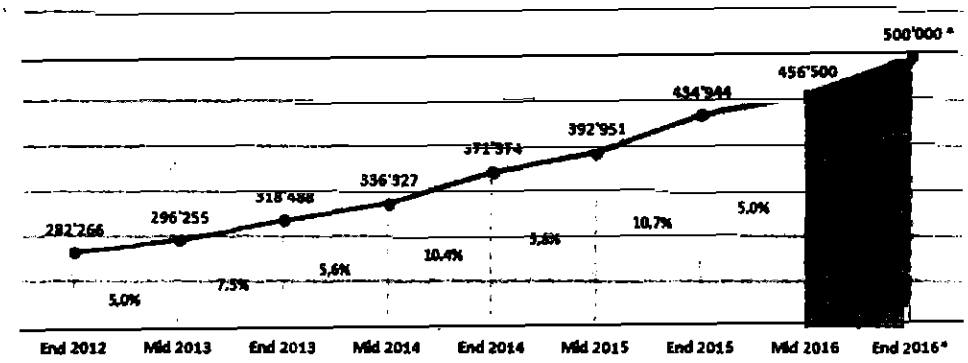
The worldwide wind capacity reached 456,486 MW by the end of June 2016, out of which 21,714 MW were added in the first six months of 2016. This increase is similar like in the first half of 2015, when 21.6 GW were added. All wind turbines installed worldwide by mid 2016 can generate around 4.7 % of the world's electricity demand.

The global wind capacity grew by 5% within six months (after 5.8 % in the same period in 2015 and 5.6 % in 2014) and by 16.1 % on an annual basis (mid 2016 compared with mid 2015).

In the second half of 2016, an additional capacity of over 40 GW was installed worldwide, which brought new annual installations to at least 65 GW, adding just 1.5 GW more than in the previous year. The total installed capacity of wind globally was 456,486 MW by June 2016.

The following figure shows the trend in increase in global capacity in last years.

Total Installed Capacity 2012-2016 [MW]



* Prognosis
Total installed capacity: includes all installed wind capacity, connected and not-connected to the grid.

© WWEA

The Country wise Installation of Wind Power till June 2016 is shown in figure below:

[1] Source: Stats of World Wind Energy Association

Position	Country /Region	Total Capacity June 2016 [MW]	Added Capacity 2016 [MW]	Total capacity end 2015 [MW]	Added Capacity 2015 [MW]	Total capacity end 2014 [MW]	Added Capacity 2014 [MW]	Total capacity end 2013 [MW]	Added Capacity 2013 [MW]
1.	China	158,000	10,000	148,000	10,101	114,763	7,175	91,324	80,827
2.	United States	74,696	830	73,867	1,994	65,754	835	61,108	59,884
3.	Germany	47,420	2,389	45,192	1,991	40,468	1,830	34,660	32,458
4.	India	27,151	2,392	24,759	1,297	22,465	1,112	20,150	19,564
5.	Spain	22,967	-	22,987	-	22,987	-	22,959	22,918
6.	United Kingdom	13,940	320	13,614	872	12,440	649	10,711	9,776
7.	Canada	11,296	109	11,205	510	9,694	723	7,698	6,578
8.	France	10,861	568	10,293	523	9,296	338	8,254	7,697
9.	Brazil	9,810	1,095	8,715	838	5,962	1,301	3,466	2,788
10.	Italy	9,101	143	8,958	124	8,663	30	8,551	8,417
11.	Sweden	6,338	309	6.029	157	5,425	354	4,470	4,271
12.	Poland	5,300	200	5,100	283	3,834	337	3,390	2,798
13.	Turkey	5,146	428	4,718	431	3,763	486	2,959	2,619
14.	Denmark	5,089	25	5,064	76	4,883	83	4,772	45,78
15.	Portugal	5,040	6	5,034	-	4,953	105	4,724	4,547
	Rest of World	**44,309**	**2900**	**41,409**	**2,800**	**35,968**	**2,275**	**29,718**	**26,861**
	Total	**456,488**	**21,714**	**434,944**	**21,878**	**371,317**	**17,813**	**318,914**	**296,581**

4.3 About the Sponsors – Liberty Mills Limited (LML)

Liberty Mills Limited (The Project Sponsor) is the Sponsor of the Project Company with 100% shareholding in the Project Company. Brief profile of the Project Sponsor is given below:

4.3.1 Liberty Mills Limited **(LML):**

Liberty Mills Limited ("LML"), established in the year 1962 by Mr. Salim N. Mukaty, enjoys leading positions in textile sector of Pakistan for more than 5 decades. LML is now one of largest manufacturers and exporters of textile goods in the country having state of the art processing unit producing 66 million meters fabric annually.

Located in the industrial heart of Karachi, it is today one of the largest textile processing unit in Pakistan with a production capacity of 500,000 square meters of fabric per day. The whole production is exported directly and indirectly to customers who include vendors of internationally recognized brands and departmental stores. Its substantial

foreign remittance through export business has been greatly contributing towards national exchequer.

Liberty Mills Limited is an ISO 9001-2008, OCS 100/OCS Blended Standards, Oeko - Tex Standard 100 and SA 8000:2008 Certified company

4.3.2 Liberty Power Tech Limited:

Liberty Power Tech Limited ("the company") was incorporated in September-2007. The core idea behind the incorporation was to contribute and add the values in energy sector of the country considering dire demand of electricity. The company was formed under Power Policy 2002 as an Independent Power Producer (IPP) to build, own, operate and maintain RFO based combined cycle power complex having gross capacity of 200 MW. The company has most efficient and advanced technology 11 Engines having generation capacity of 16.911MW each and 1 Steam Turbine 13.979 MW imported directly from Wartsiala, Finlad who is the leading and global supplier of power plants. The total project cost amounting to USD 240.239 million was sponsored as 25% from Equity and 75% from Debt.

The company got approved tariff on cost plus basis from National Electric Power Regulatory Authority ("NEPRA") in Feb-2008 and formally obtained generation license from NEPRA in April-2008. The company signed Implementation Agreement (IA) with Islamic Republic of Pakistan ("GOP") in Jun-2008 which acts as sovereign guarantee for the debt and equity investors of the project and guarantees the obligation of NTDC (company owned by WAPDA) under the Power Purchase Agreement.

Power Purchase Agreement ("PPA") was signed between the company and National Transmission & Dispatch Company Limited (NTDCL) in July-2008. Under the PPA, NTDCL had contracted to purchase total net generation capacity of 196.139 MW from the company for a period of 25 years against the pre-determined tariff already approved by the NEPRA. Fuel component of the tariff is entirely Pass Through based on monthly prevailing price of RFO under the head of Energy Purchase Price. However, other components like O&M, ROE, Insurance, Working Capital and debt component are indexed to various factors i.e. international and local CPI, devaluation of PKR to USD and variation in interest rate on quarterly basis. Under the Power Policy – 2002, the company is guaranteed return of 15% IRR in USD.

The company achieved financial close in Mar-2009 in accordance with the plan despite the severe economic meltdown of year 2008 when the lenders were reluctant to finance such a mega power projects. The sponsors of the company were only able to accomplish said essential and near to impossible milestone because of carrying good standing and reputation with the bankers and financial institutions. It is the matter of great honor that the company had issued largest SUKUK ever in the history of the country. The project was successfully completed and finally commissioned in Jan-2011. Alhamdulillah, it was an immense pleasure that the company had achieved the entire milestone within the

timeline as already determined in the PPA and the said accomplishment made us distinguished among the other IPPs.

The plant is being operated and maintained by the world class O&M operator i.e. Wartsila Pakistan (Subsidiary of Wartsila, Finland) which has further strengthen our generation capability. Since the commissioning, the plant is generating and supplying uninterruptedly electricity to NTDC at around 88% plant factor with the annual turnover of Rs. 28.697 billion. The availability of plant invariably remained greater than the required i.e. 88%.

4.4 About the Project

The 50 MW (gross) Wind Project is located at Jhimpir, District Thatta, Sindh. The development of the Project is being undertaken on a Build-Own and Operate (BOO) basis by LWP2L which is owned 100% by Liberty Mills Limited. The Project is being implemented on fast track basis.

An efficient and dynamic professional team has been appointed to assist in the implementation of the Project. Renewable Resources (RE2) has been selected as Technical Advisor for advice on all technical matter.

4.5 Project Location

The proposed Project site is located at Jhimpir, District Thatta, Province of Sindh, Pakistan (the "Site"). The Site proposed for the implementation of the Project has been selected by considering the following:

(i) location in the wind corridor,
(ii) wind conditions at the site,
(iii) topographic conditions,
(iv) site accessibility, and
(v) location of the grid with reference to the site for interconnection.

The Site is located within the wind corridor identified by DAE, GOS. As already mentioned above the Site is located in Jhimpir, District Thatta, Sindh, which is one of the most promising areas where wind power projects can be viably installed. The Project's wind farm site is located 74 KM from Port Qasim Karachi in the East direction with easy road access. Nooriabad Industrial Estate (situated on the M9 motorway connecting Karachi and Hyderabad) is 28 KM from the wind farm.

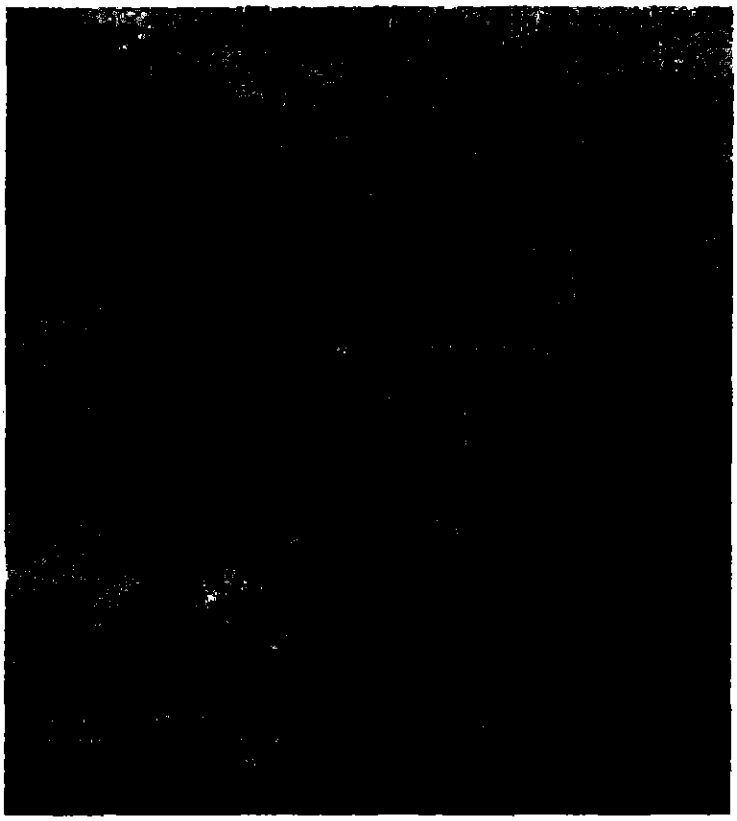
The major track from Karachi to Nooriabad is via the Karachi-Hyderabad Motorway, and another access to the Project site is through Jhimpir. When travelling via the Karachi-Hyderabad Motorway the access from Nooriabad to the site is a single track which turns toward the site.

However, the terrain is flat and long and heavy vehicles can easily navigate through this road. There are number of neighboring wind farms in the surrounding area of Jhimpir. There is no requirement to establish roads or tracks for movement of traffic. The total distance from Karachi to the site is approximately 132 km.

The proposed site is located about 74 km from Port Qasim Karachi. Karachi borders on the Arabian Sea and the weather belongs to tropical monsoon climate. Rainfall is scarce with about 200 mm for a whole year and most of this is concentrated in July and August. The temperature in winter from November to February is temperate, but it is hot with high temperature in summer from April to August as the highest temperature has reached 44.02 degree Celcius.

The general layout of 50 MW NSEPL and neighboring wind farms is shown in figure below:

The micrositing of 25 turbines with 2 MW capacity each is shown in figure below:



The Project Site is exposed to very strong westerly winds, wind data analysis of the area suggests that, 80% wind blows from the south west direction. The terrain of the area is flat with small change in altitude. The proposed site lies under roughness class 1.5 as there is low vegetation. The site is easily accessible through metallic roads. The ground is hard and rocky; the subsurface soil also includes clay and silt.

The proposed wind farms lies on a flat inland area with hard and rocky ground conditions. The site would be categorized as inland wind development as opposed to offshore/coastal wind project development (which is more difficult to develop due to tides and soft subsoil clay). The general terrain at the site can be described as simple and flat terrain. Internal access roads are the roads connecting the single wind turbine locations with each other and the external access roads and grid station would be constructed during the civil works of the wind farm.

The proposed site area lies in an arid zone with very little annual precipitation. The result is that there is hardly any natural vegetation in the area. Some hard tree species are visible scattered far and wide in the area. The area is rocky with some rock outcrops towards the Super Highway. There are small rock outcrops and hillocks left over by the wind and

flash flood erosions in the middle of the project land. The terrain at the site and surrounding area is generally flat with elevations varying between 32m to 98m.

The coordinates of Wind farm are given in Table below:

	Longitude	Latitude
1	67°47'35.53"E	24°54'2.94"N
2	67°47'38.32"E	24°54'7.08"N
3	67°43'6.65"E	24°56'35.92"N
4	67°43'9.45"E	24°56'39.95"N

4.6 Wind Farms Layout at Project Site

The wind farms site is in long and narrow in shape, the topography is relatively flat and the elevation above sea level is approximately 25-100. There is little vegetation at the wind farm site.

4.7 Topographical and Geological Conditions at project Site

4.7.1 Topographical Conditions:

The Site is on a plain area at an elevation of 25-100m, which is generally flat, but a bit higher on the west and lower on the east. The landform at wind farm sites is mainly of pediment and the vegetation there is less developed.

4.7.2 Geological Conditions:

The planned wind farm sites are covered mainly by marine alluvium of Holocene and recent weathered deposit, and underlain mainly by Tertiary limestone. The bedrock in the site is generally outcropped. As the WTG is a high-rise structure, it has a high gravity center and should sustain high loads, large horizontal wind force and overturning moments. WTGs are designed to withstand these forces.

4.7.3 Hydrology:

According to the regional hydrological data available, the Project site is in a dry area, where the water table is deeply underground, and the surface water and water in the shallow surface layers is weakly to slightly corrosive to the concrete and is corrosive to the rebars in the concrete which has been immerged in water for a long-time or alternatively in wet and dry conditions. Corrosion prevention measures will be adopted in the design and implementation of the wind farm.

4.8 Grid Connectivity

The Project would be connected by a double circuit of 132kV looping in-out with a sub cluster also connecting nearby WPPs to Jhimpir New 220 kV grid station.

4.9 Annual Energy Production

The wind studies have been carried out using wind data from a regional mast met mast that was installed in May 2012. Ten (10) minute interval data from 30.05.2012 to 17.12.2015 having duration of 44 months has been used in the analysis.

Out of the available data, a measurement period of 12 months from 01.04.2014 to 31.03.2015 was selected for the annual average wind speed and wind direction having highest data coverage period with good quality data, which is considered as a bankable time series. Analyzed average wind speed for the selected period is calculated as at 80 m height. For the assessment of long-term wind speed, reference data set of EMD-Global Wind Data based on ERA-Interim (EmdERA MERRA2 have been considered and resulted in the coefficient of determination of (R^2) > [80]%.

Twenty-five (25) Gamesa wind turbines (G114-2.0) at 93 m hub height have been used for the Project. The micro-siting was performed based on site-specific topographic map.

The WindPRO (ver.2.9) / WAsP (ver.11) software is used to estimate the wind conditions at each turbine location within the wind farm area based on the measured input wind data at a height of [80] m. The potential influence by all surrounding wind farms has been taken into account for the wake analysis. Losses are occurring along the whole energetic transformation chain from the rotor (kinetic energy) to the substation's delivery point (electricity) and has been considered on basis of turbine specifications and prudent assumptions.

Following losses have been considered to arrive at net energy number from the total gross:

- Wake Effects - 12%
- Availability - 2.0%
- Turbine Performance - 0.5%
- Electrical - 2.5%
- Environmental - 0.5%

Additionally, an uncertainty assessment was also carried out. Uncertainty sources are associated to measuring equipment, data acquisition, data processing, energy model development, turbine parameters and energy estimation.

The expected energy output of the Project is determined as 166,440 MWh per annum, which translates into a 38% annual capacity factor, and is considered very attractive for wind generation given the precedent cases in the sector and the expectations of NEPRA.

Section 5. EPC – Process & Selection

5.1 WTG Technology & EPC Selection

In order to select EPC and O&M contractors for the Project, the Project Company carried out a bidding process by circulating RFPs to the EPC contractors for awarding the turnkey EPC contracts for the development of the Project. All such EPC contractors and WTG manufacturers were invited who had a bankable international footprint and who were willing to work in Pakistan. The following submitted the bids:

- Gamesa Tenjian, China offering Gamesa WTG.
- Descon Engineering Limited offering GE WTG.
- Nordex Energy GmbH, Germany offering Nordex and Acconia WTG.
- Huadong Engineering Corporation Limited, China offering Gamesa, Goldwind and GE WTGs.
- Vestas Asia pacific Wind Technology Ltd, Australia offering Vestas WTG.
- CMEC, China offering GE WTG.
- HydroChina Corporation, China offering Gamesa, Goldwind and GE WTGs.
- TBEA, China offering Nordex and Acconia WTGs.

The Consultants of the Project Company developed prequalification criteria for this purpose, which included the following:

- Machines should be available in hot climate versions
- Machines should be capable of generating electricity at most suitable cost of energy.
- Should not be in litigation over completion liability issues in the region
- Should have been viable financial entity for at least last three years.
- Should have successfully completed works of similar sizes in last three years.
- Suitable population of the proposed machines installed and working.

Based on the pre-qualification attributes set aside by the Project Company's Technical

Management and its follow up with the EPC vendors, the RFPs were sent out to vendors fulfilling the criteria.

The Project Company received interest from various international WTG suppliers and EPC contractors. After considerable efforts and receipt of proposals from many suppliers, the Project Company took this input as a starting point and started negotiations with the vendors for the EPC proposals.

Based on its thorough due diligence and following an intense negotiations process with the various suppliers and contractors, the Project Company has shortlisted **"HydroChina Corporation Huadong"** and **"Gamesa"** as the technology for its Project with a fixed price and fixed Commercial Operations Date.

5.2 Gamesa – The WTG Manufacturer /

GAMESA Corporation is a Multi-national company, with head office in Spain, involved in Design, Manufacturing, Engineering, Erection & Commissioning, Operations and Maintenance of Wind Turbines and Wind Farms around the world.

With a total of 21 years of experience and more than 31,900 MW installed in 5 continents and in more than 50 countries around the globe, Gamesa is world's 4th Largest WTG supplier. The annual equivalent of its 31,900 MW installed amounts to more than 6.75 million tons of petroleum (TEP) per year and prevents the emission into the atmosphere of more than 46 million tons of CO2 per year.

Gamesa has a wide range of technology and services with an aim to meet the needs of all client segments in the wind energy sector. Gamesa is a global technological leader in the wind industry. The company has production centers in the main wind markets: Spain and China, as the global production and supply hubs, while maintaining its local production capacity in India, US, and Brazil.

Gamesa is involved in 3 business segments dedicated to wind power; Wind Turbine Manufacturing with a total track record of more than 31.9 GW manufactured capacity, Wind Farms Development with a developed capacity more than 7 GW developed) and Operation & Maintenance with a total capacity of 21.2 GW under Operation and Maintenance. Additionally, Gamesa Corporation invests in Research and Development (R&D), with over 6 R&D centers in Spain, India, US and Brazil.

Gamesa has wide experience of EPC Wind Farm Construction with more than 313 Wind Farms (Total Capacity: 9052 MW) Worldwide already constructed and more than 30 Wind Farms worldwide (Total Capacity: 1,238 MW) are under construction. In addition to wind turbine supply, Gamesa has been involved in construction of 82 overhead lines (more than 1,371 km) from 45 kV to 400 kV and 138 substations from 45 kV to 345 kV.

Gamesa has a wide product range with a power capacity from 660kW per WTG to 5MW per WTG. Out of the total 21.9 GW manufactured, 19.3 GW belongs to Gamesa 2.0-2.5 MW platform. With a proved availability number higher than 98% worldwide, GAMESA 2.0-2.5 MW platform has been selected by 10 out of 15 top wind farm developers around the globe in 2014. As part of the evolutionary development process of the Gamesa 2.0-2.5 MW platform, the G114-2.0 MW turbine inherits the technologies, components, and subsystems previously deployed and proven through the reliable operation of 15,000 MW of Gamesa's high-performing 2.0 MW turbines.

The specifications of G114-2.0 MW turbine are as follows:

1	Wind Turbine Type, Make & Model	Gamesa G114-2.0MW
2	Installed Capacity of Wind Farm (MW)	50 MW
3	Number of Wind Turbine Units/Size of each Unit (KW)	25 x 2000 KW
4	Number of blades	3
5	Rotor diameter	114m
6	Hub Height	80m

5.3 EPC Contractual Arrangement

Based on Bid evaluation and subsequent negotiations, LML on 13 November 2017 entered into the EPC and O&M Contract(s) with the preferred bidder's lead EPC Contractor, which comprised of two (2) separate contracts in accordance with practice in Pakistan, namely:

a) The Engineering and Construction Contract (the "Onshore Contract"); and
b) The Equipment Supply Contract (the "Offshore Contract")

Distribution of responsibilities between the contracts is briefly described below:

The Onshore Contract is signed with M/s Hydrochina International Engineering Company Limited, which includes design, engineering, construction, erection, testing, commissioning and all other works for completion of the Project inside Pakistan.

The Offshore Contract is signed with M/s Power Construction Corporation of China, Ltd, which includes but not limited to supplying imported equipment and materials for the Project outside Pakistan. All equipment supplied under the Offshore Contract will be warranted by the Offshore Contractor.

EPC contract provides a lump-sum price, as provided in the below table:

Equipment Supply Contract	-	67,000,000	67,000,000
Construction Contract	577,500,000	5,500,000	11,000,000
Total Contract Price	**577,500,000**	**72,500,000**	**78,000,000**

5.4 The EPC Contractor–Hydrochina International Engineering Company Limited

POWERCHINA HUADONG ENGINEERING CORPORATION LIMITED (hereinafter referred to as "POWERCHINA HUADONG"), founded in 1954, is a state-owned key enterprise affiliated to the world's Top 500 enterprises, Power Construction Corporation of China (POWERCHINA). Headquartered in Hangzhou, POWERCHINA HUADONG has its branches in Sichuan,Chongqing, Yunnan, Fujian and Anhui, and overseas offices in Vietnam, Turkey, Nigeria, Kenya and Ethiopia.

After years of transformation and diversified development, POWERCHINA HUADONG has established the "233" Development Strategy, namely, focusing on two target markets at home and abroad, specializing in three major fields of hydropower and new energy, urban construction and environment development, dam and engineering safety, and building up business structure of international engineering company with three key business of survey and design, EPC project contracting and investment. POWERCHINA HUADONG is capable of providing solutions to the whole industry chain and system of resources identification, planning and design, investment and financing, procurement management, construction management, and operation management, and has established the matching modern management structures.

POWERCHINA HUADONG is committed to the construction of technological innovation platform, constantly enhances the scientific and technological innovation, upgrades scientific and technological capability and leads the development of POWERCHINA HUADONG through the scientific and technology platform. Subject to application, the following centers were approved for establishment: Pumped Storage Engineering Center of Zhejiang Province, East China Offshore Wind Power Provincial High-tech Enterprise Research and Development Center, Zhejiang Province Engineering Digital Technology Research Center, State Energy and Hydropower Engineering Technology Research Center -Pumped Storage Engineering Branch Center, ECIDI-BENTLEY China Engineering Design Software Research Center established in association with America famous software company BENTLEY SYSTEMS, INCORPORATED, Zhejiang Province (city) Academician Workstation and Postdoctoral Scientific Research Workstation, and University/Enterprise Joint Training Base. POWERCHINA HUADONG's scientific and technological platform construction and the achievements obtained take the lead in the industry.

Section 6. Project Cost

The Project Cost is based on the firm EPC Contract comprising of the Offshore Contract and the Onshore Contract. The reference exchange rate used to convert the PKR denominated costs into United States Dollars is US $ 1 = PKR 105.

A summary of the Project Cost is given below:

EPC Cost	78.00
Land Cost	0.52
Insurance during Construction	0.55
Duties and Taxes	1.03
Non-EPC Cost	0.79
Project development cost	2.83
Financial Fee and Charges	1.41
Interest during Construction	3.08
Total Project Cost	**88.21**

6.1 EPC Cost

The scope of work to be carried out by the EPC contractor has been split into two parts, namely, onshore works and offshore works; where offshore works primarily relate to procurement and supply of electrical and mechanical equipment outside Pakistan and onshore works comprise of civil works, erection, commissioning, testing, etc.

Total EPC cost for the project is US $ 88.21 Million. As identified above, LWP2L adopted an effective and efficient bidding process for procuring the services of EPC Contractor at the most competitive prices. Bidding process allows each bidder to submit its own project layout and design, based on the project topography, geology, and other basic information combined with site visits, so as to provide the most optimized and effective technical scheme for construction and implementation of the project. The bidders submitted different technical schemes and the most robust and cost effective

solution was selected through the bidding process. LWP2L believes that the price as contracted with the EPC Contractor is reasonable under the prevailing market conditions.

6.2 Project Development Cost

This head includes the cost for development of Project and includes all costs, fees and expenses incurred or to be incurred for such purpose. A total of US$ 2.83 million has been estimated under this head. These costs include costs of:

- Feasibility study costs including cost for Topographical survey of land, Geological and geotechnical study, Project layout study, Dam design study, and electrical study; and Transportation study etc.
- Costs related to the performance guarantee to be furnished to EDGOS / AEDB;
- Costs related to the Power Purchaser letter of credit to be furnished to the Power Purchaser pursuant to the provisions of the EPA;
- Various regulatory fees to be paid to NEPRA;
- Costs incurred during Project Company formation;
- Project Company staff salaries, allowances and other benefits;
- Project Company head office – development and running expenses during construction period;
- Travelling costs of Project Company staff;
- Cost of security arrangement for the Project;
- Costs relating to various permits for the Project; and
- Project advisors, including cost of Local and Foreign Financial Advisors, Insurance Advisor, Audit and Tax Advisors, Security Advisors, Carbon Credit Advisors etc.

6.3 Duties and Taxes

Taxes and Customs Duty have been calculated at US$ 1.03 Million by the Project Company, summarized as follows:

a) Custom Duty

The amount of customs duty to be paid on renewable energy projects is to be calculated based on Section 18(1A) of the Customs Act 1969 read with Serial 11 to the Part I of Fifth Schedule of the Customs Act 1969 (the Schedule), which allows Customs Duty at a rate of Zero% for the following items;

"Machinery equipment and spares meant for initial installation, balancing modernization, replacement or expansion of projects for power generation through nuclear and renewable energy sources like solar, wind, micro-hydel bio-energy, ocean, waste-to-energy and hydrogen cell etc."

Accordingly, LWP2L has assumed Zero% customs duty regarding imported plant, equipment, machinery etc. in accordance with the above.

However, in case of applicability of any duty, LWP2L prays NEPRA to allow adjustment of capital cost of the project and tariff at COD, for actual customs duties paid.

b) Special Excise Duty

Special Excise Duty is assumed at Zero%, as the same is correlated with the rate of customs duty (discussed above - Zero Rated). In case the Project has to pay customs duty then the Special Excise Duty at 1% is levied LWP2L, requests NEPRA to kindly allow adjustment in capital cost of the Project and the tariff at COD, for actual special excise duty paid.

c) Sales Tax

No Sales Tax is assumed on import and local supply of the imported plant, equipment, and machinery etc., as per Sixth Schedule (the Schedule) to the Sales Tax Act 1990 read with Section 13 (1) of the Sales Tax Act 1990 wherein exemption from applicability of sales tax is provided. Serial 7 of the Schedule cites following items which are exempt from sales tax;

"Machinery equipment and spares meant for initial installation, balancing modernization, replacement or expansion of projects for power generation through nuclear and renewable energy sources like solar, wind, micro-hydel bio-energy, ocean, waste-to-energy and hydrogen cell etc."

Furthermore, for the purpose of this Tariff Petition, LWP2L, has not taken into account the impact (if any) of the Sindh Sales Tax on Services Act, 2012. The true implications and procedures with regard applicability of the 'Sindh Sales Tax of Services Act, 2012' are not clear at this time, however, in case the said Sales Tax on services become applicable on the Onshore Agreement, then the related impact will be adjusted against output sales tax on electricity sales receipts. (post COD) and there will be no impact on the Project Cost because of provincial sales tax on services.

However, in case of change in laws by virtue of which if either (a) federal sales tax applicable on procurement of plant, machinery and equipment becomes applicable, or (b) provincial sales tax on services does not remain adjustable against sales tax charged on sale of electricity, the same is requested to be adjusted in Project Cost and Tariff allowed at COD / Tariff true-up stage.

d) Advance Income Tax:

Advance Income Tax @ 0.00% (Zero Percent) has been assumed at the time of import of machinery, equipment, goods, spares and materials for the Project in line with exemption provided under Section 53 of the Income tax Ordinance 2001, read with clause 77 to the Part H of 2nd Schedule to the Income Tax Ordinance, as reproduced hereunder:

"(77) Provisions of sections 148 and 153 shall not be applicable on import and subsequent Supply of items with dedicated use of renewable sources of energy like solar and wind etc. even if locally manufactured, which include induction lamps, SMD, LEDs with or without ballast with fittings and fixtures wind turbines including alternator and mast solar torches, lanterns and related instruments, PV modules (with or without) the related corn 'Merits including invertors, charge controllers and batteries."

However, in case of change in laws before import of related plant and machinery by virtue of which such advance income tax rate is increased from currently applicable zero percent then the same is requested to be adjusted in Project Cost and Tariff allowed at COD / Tariff true-up stage.

e) Sindh Infrastructure Development Surcharge

Sindh Infrastructure Development Surcharge @ 1.15% (One Point One Five) of the imports for the Project has been assumed. The chargeability of Sindh Infrastructure Development Surcharge (the SIDS) is based on (i) the weight of the imported equipment / items, (ii) the distance of the Site from the port and (iii) use of equipment in Sindh.

f) Federal Excise Duty (FED):
FED on the payments to be made to (1) local financial institutions; and (2) insurer's, has not been assumed. In case FED is levied on the financial advisors and lead arrangers' fee, debt arrangement fee and commitment fee, L/C commission and charges, loan administration charges, and insurance premium the same should be allowed as pass-through under the tariff.

Duties and Taxes of non-refundable nature shall be adjusted at Commercial Operations Date, based on the actual cost incurred for which the Project Company shall submit documentary evidence to the satisfaction of the Authority.

6.4 Insurance during Construction

Insurance during Construction cost covers the insurance cost of the Project's assets during the construction period. These cost estimates i.e. 0.70% of the EPC cost plus

custom duties have been developed based on the most recent tariff determinations issued by NEPRA for other wind power projects. Authority is hereby requested to allow Insurance during Construction at 0.70% of EPC cost plus custom duties, as is allowed in case of other wind power projects.

The Project, in view of the practices set by other IPPs in Pakistan and in accordance with the requirements typically set out by the Lenders funding the Project, intends to procure the following insurances during the construction phase of the Project:

(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 Startup Insurances; and
(f) Comprehensive General Liability.

6.5 Financial Fees and Charges

Financial Fee & Charges include costs related to Debt Financing of the project. Such costs include fees and charges related to lenders up-front fee, lenders advisors & agents charges, commitment fee, management fee, charges related to various letters of credit to be established in favor of various contracting parties, fees payable and stamp duty applicable on the financing documents, agency fee, security trustee fee, L/C commitment fee/charges for EPC, commitment fee and other financing fees cost and charges.

The financial charges requested as part of the Project Cost i.e. 2% of the debt arranged, are based on discussions held with the financial institutions and their experience regarding costs incurred on projects of such stature.

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.

6.6 Interest during Construction

The Interest during Construction ("IDC") has been calculated on the basis of 15 months construction period at US $ 3.08 Million on the terms offered by financial institutions and banks to the Project at SBP rate of 2% plus a spread of 1.75% for local financing and at 3-month LIBOR plus a spread of 4.25% for foreign loan, whereas for SBP refinance facility base rate of fixed 2% is charged. Actual IDC, however, shall be subject to change depending on the fluctuations in base rate, funding requirement (draw-downs) 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. Construction period

assumed for IDC calculation is 15 months, which is in line with the construction period agreed with the EPC Contractors. It is pertinent to mention that all bidders proposed the same construction period for the Project.

The spreads are considered to be reasonable given:

(i) Pakistan's security situation, due to which international lenders shall require a premium for taking on the additional risk of investing in Pakistan,

(ii) Pakistan's credit ratings which have deteriorated significantly during the past year, and

(iii) Rates offered by the Pakistan government on recent euro-bonds issued by the government.

Section 7. Financing Arrangement

7.1 Project Financing

The Project Cost is envisaged to be funded on the basis of a Debt: Equity ratio of 80:20, however, this shall be firmed up once the financing documents for debt financing have been executed prior to financial close. For the purpose of this Petition, a debt: equity ratio of 80:20 has been assumed, thereby resulting in the following debt and equity injections for the Project:

	MILLION US $
[redacted]	70.57
	17.64
	88.21

Key terms and condition of financing are provided in the table below:

	Local Financing	SBP Facility	Foreign Financing
Base Rate	-	2%	3 M LIBOR (1.57%)
Spread	-	1.75%	4.25%
Total Rate	-	3.75%	5.82 %
Repayment period	-	10 Years	13 years
Repayment basis	-	Quarterly	Quarterly

Sponsors are planning to inject 20% equity into the Project. The financing structure of 80:20 debt: equity might change later on based on mutual arrangement between Banks and Sponsors.

7.1.1 Return on Equity (ROE), ROE during Construction

The Return on Equity ("ROE") and Return on Equity during Construction ("ROEDC") have been estimated separately and the same are provided under Section 9.

Project Company hereby requests:

- ROE of approx. 13.87% (IRR based) return on invested equity net of withholding tax.
- ROEDC at a rate of approx 13.87% (IRR based) over the remaining life of the Project.

It is pertinent to highlight 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 ROE-DC, at actual as a pass-through item under the tariff.

7.2 Carbon Credits

Wind Power is a clean form of energy and will reduce CO_2 emission. LWP2L intends to register for CDM emission reduction program. In case any income is generated from CDM, the same shall be shared in accordance GoPs prevailing policy.

Section 8. Operations Cost

The operational cost of the Project comprises of the operations and maintenance cost, and the cost of the operational period insurances to be taken out by the Project Company. Break-up of the same is provided hereunder:

	USD IN MILLION (PER ANNUM)
[redacted]	1.9

8.1 O&M Costs

This component caters for the cost of services rendered by the O&M operator that are dependent on the operation of the Project thereby determinable on a kWh basis. This component also includes costs expected to be incurred by the project locally; these include costs associated with local staff, administrative expenses, corporate fees, audit fees, advisory fees etc This component also includes cost associated with replacement of parts necessitated due to regular operation / normal wear and tear. The O&M cost will be incurred in local as well as foreign currency – percentage of local: foreign components is specified below along with indexations applicable on the same:

[redacted]		
Local	39%	• Pakistan CPI (General)
Foreign	61%	• US CPI (All Urban Consumers) • PKR / USD Indexation

8.2 Insurance Cost

The insurance cost consists of operations all risk insurance for the project, as well as business-interruption insurance; these are standard insurances required by all lenders' and also set out under the EPA.

Aforementioned insurances are required to be maintained throughout the life of the Project. 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.

	USD IN MILLION (PER ANNUM)
[redacted]	0.39

LWP2L has requested that an annual insurance cost at a rate of 0.5% of the EPC cost be allowed.

Section 9. Reference Tariff

As the Project is 80% debt funded with loan tenure of 13 years (foreign loan) and 10 years (local loan) for repayment, this means that there will be higher debt service cost requirements in the first 10 and 13 years of the Project. In the last 12 years and 15 years of the Project, the tariff will be decreased due to decreased and no debt service related costs respectively.

The proposed tariff is for the life of the Project i.e. term of the EPA, to be signed with the Purchaser, which is 25 years from COD. The tariff is divided into three (03) bands i.e. year 1 – 10, year 11 – 13 and year 14 – 25 to cover the variations due to the debt repayment period.

A summarized Reference Generation Tariff table setting out the three bands is provided below:

Year	O&M (Foreign)	O&M (Local)	Insurance	ROE	Financing / Debt Servicing	Total
	Rs. / kWh					
1 – 10	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
11 – 13	0.7311	0.4675	0.2460	2.0338	2.4528	5.9312
14 – 25	0.7311	0.4675	0.2460	2.0338	-	3.4784
Levelized:						
1-25 Years	**0.7311**	**0.4675**	**0.2460**	**2.0338**	**3.7334**	**7.2118**
	US cents / kWh					
1-25 Years	**0.6963**	**0.4452**	**0.2343**	**1.9370**	**3.5556**	**6.8684**

9.1 Reference Generation Tariff

Year	O&M (Foreign)	O&M (Local)	Insurance	ROE	ROE During Debt Servicing	Total
	US cents / kWh					
1	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
2	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
3	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
4	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
5	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
6	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
7	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
8	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
9	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
10	0.7311	0.4675	0.2460	2.0338	5.1324	8.6108
11	0.7311	0.4675	0.2460	2.0338	2.4528	5.9312
12	0.7311	0.4675	0.2460	2.0338	2.4528	5.9312
13	0.7311	0.4675	0.2460	2.0338	2.4528	5.9312
14	0.7311	0.4675	0.2460	2.0338	-	3.4784
15	0.7311	0.4675	0.2460	2.0338	-	3.4784
16	0.7311	0.4675	0.2460	2.0338	-	3.4784
17	0.7311	0.4675	0.2460	2.0338	-	3.4784
18	0.7311	0.4675	0.2460	2.0338	-	3.4784
19	0.7311	0.4675	0.2460	2.0338	-	3.4784
20	0.7311	0.4675	0.2460	2.0338	-	3.4784
21	0.7311	0.4675	0.2460	2.0338	-	3.4784
22	0.7311	0.4675	0.2460	2.0338	-	3.4784
23	0.7311	0.4675	0.2460	2.0338	-	3.4784
24	0.7311	0.4675	0.2460	2.0338	-	3.4784
25	0.7311	0.4675	0.2460	2.0338	-	3.4784
Levelized:						
1-25 Years	0.7311	0.4675	0.2460	2.0338	3.7334	7.2118
	US cents / kWh					
1-25 Years	**0.6963**	**0.4452**	**0.2343**	**1.9370**	**3.5556**	**6.8684**

9.2 Reference Debt Servicing Schedule- SBP Facility

Repayment Period	[redacted]	Principal Repayment - Tariff Component (Rs/kWh)	[redacted]	Interest - Tariff Component (Rs/kWh)	[redacted]	Installment - Tariff Component (Rs/kWh)
1		1.8449		0.8347		2.6796
2		1.8622		0.8174		2.6796
3		1.8797		0.8000		2.6796
4		1.8973		0.7824		2.6796
5		1.9151		0.7646		2.6796
6		1.9330		0.7466		2.6796
7		1.9511		0.7285		2.6796
8		1.9694		0.7102		2.6796
9		1.9879		0.6917		2.6796
10		2.0065		0.6731		2.6796
11		2.0253		0.6543		2.6796
12		2.0443		0.6353		2.6796
13		2.0635		0.6161		2.6796
14		2.0828		0.5968		2.6796
15		2.1024		0.5773		2.6796
16		2.1221		0.5576		2.6796
17		2.1420		0.5377		2.6796
18		2.1621		0.5176		2.6796
19		2.1823		0.4973		2.6796
20		2.2028		0.4768		2.6796
21		2.2234		0.4562		2.6796
22		2.2443		0.4354		2.6796
23		2.2653		0.4143		2.6796
24		2.2866		0.3931		2.6796
25		2.3080		0.3716		2.6796
26		2.3296		0.3500		2.6796
27		2.3515		0.3282		2.6796
28		2.3735		0.3061		2.6796
29		2.3958		0.2839		2.6796
30		2.4182		0.2614		2.6796
31		2.4409		0.2387		2.6796
32		2.4638		0.2159		2.6796
33		2.4869		0.1928		2.6796
34		2.5102		0.1694		2.6796
35		2.5337		0.1459		2.6796
36		2.5575		0.1222		2.6796
37		2.5815		0.0982		2.6796
38		2.6057		0.0740		2.6796
39		2.6301		0.0495		2.6796
40		2.6547		0.0249		2.6796
41						

42	[redacted]	[]	[redacted]	[]	[redacted]	[]
43		[]		[]		[]
44		[]		[]		[]
45		[]		[]		[]
46		[]		[]		[]
47		[]		[]		[]
48		[]		[]		[]
49		[]		[]		[]
50		[]		[]		[]
51		[]		[]		[]
52		[]		[]		[]

9.3 Reference Debt Servicing Schedule- Foreign Financing

Repayment Period	[redacted]	Principal Repayment - Tariff Component (Rs/kWh)	[redacted]	Interest - Tariff Component (Rs/kWh)	[redacted]	Installment - Tariff Component (Rs/kWh)
1		1.1573		1.2955		2.4528
2		1.1741		1.2787		2.4528
3		1.1912		1.2616		2.4528
4		1.2085		1.2442		2.4528
5		1.2261		1.2267		2.4528
6		1.2440		1.2088		2.4528
7		1.2621		1.1907		2.4528
8		1.2804		1.1724		2.4528
9		1.2991		1.1537		2.4528
10		1.3180		1.1348		2.4528
11		1.3371		1.1157		2.4528
12		1.3566		1.0962		2.4528
13		1.3763		1.0765		2.4528
14		1.3964		1.0564		2.4528
15		1.4167		1.0361		2.4528
16		1.4373		1.0155		2.4528
17		1.4582		0.9946		2.4528
18		1.4794		0.9734		2.4528
19		1.5009		0.9518		2.4528
20		1.5228		0.9300		2.4528
21		1.5449		0.9079		2.4528
22		1.5674		0.8854		2.4528
23		1.5902		0.8626		2.4528
24		1.6134		0.8394		2.4528
25		1.6368		0.8160		2.4528
26		1.6606		0.7921		2.4528
27		1.6848		0.7680		2.4528
28		1.7093		0.7435		2.4528

29	[redacted]	1.7342	[redacted]	0.7186	[redacted]	2.4528
30		1.7594		0.6934		2.4528
31		1.7850		0.6678		2.4528
32		1.8110		0.6418		2.4528
33		1.8373		0.6154		2.4528
34		1.8641		0.5887		2.4528
35		1.8912		0.5616		2.4528
36		1.9187		0.5341		2.4528
37		1.9466		0.5062		2.4528
38		1.9750		0.4778		2.4528
39		2.0037		0.4491		2.4528
40		2.0328		0.4199		2.4528
41		2.0624		0.3904		2.4528
42		2.0924		0.3604		2.4528
43		2.1229		0.3299		2.4528
44		2.1538		0.2990		2.4528
45		2.1851		0.2677		2.4528
46		2.2169		0.2359		2.4528
47		2.2492		0.2036		2.4528
48		2.2819		0.1709		2.4528
49		2.3151		0.1377		2.4528
50		2.3488		0.1040		2.4528
51		2.3829		0.0698		2.4528
52		2.4176		0.0352		2.4528

Section 10. Indexations &Adjustments

10.1 Indexations

It is submitted that indexations be made on 1st January, 1st April, 1st July and 1st October respectively, on the basis of latest information available with respect to Consumer Price Index (CPI) (General), as notified by Pakistan Bureau of Statistics, US CPI (for all Urban-consumer) as notified by US Bureau of Labor Statistics and exchange rate as notified by National Bank of Pakistan.

10.1.1 Foreign O&M Cost Component

The Reference Foreign O&M Cost Component of the O&M Cost shall be quarterly indexed to both:

(a) the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD as notified by the National Bank of Pakistan; and

(b) US CPI (for all Urban-consumer), as issued by the US Bureau of Labor Statistics.

The applicable formula shall be as follows:

$$O\&M_{(FRev)} = \text{Relevant Reference Generation Tariff Component} * (US\ CPI_{(Rev)} / US\ CPI_{(Ref)}) * (FX\ USD_{(Rev)} / 105)$$

Where:

$O\&M_{(FRev)}$ = the revised Foreign O&M Cost Component applicable for the relevant quarter

$US\ CPI_{(Rev)}$ = the revised US CPI (for all Urban-consumers) for the month prior to the month in which indexation is applicable, as issued by the US Bureau of Labor Statistics

$US\ CPI_{(Ref)}$ = the US CPI (for all Urban-consumers) for the month in which tariff is determined, as issued by the US Bureau of Labor Statistics.

$FX\ USD_{(Rev)}$ = the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.

$FX\ USD_{(Ref)}$ = TT & OD selling rate of PKR/USD, as on the date on which indexation is applicable, as notified by the National Bank of Pakistan

10.1.2 Local O&M Cost Component

The Reference Local O&M Cost Component of the O&M Cost shall be quarterly indexed to the CPI (General) in Pakistan, as notified by the Pakistan Bureau of Statistics based on the following formula:

$$O\&M_{(LRev)} = \text{Relevant Reference Generation Tariff Component} * (CPI_{(Rev)} / CPI_{(Ref)})$$

Where:

$O\&M_{(LRev)}$ = the revised Local O&M Cost Component applicable for the relevant quarter

$CPI_{(Rev)}$ = the revised CPI (General) in Pakistan for the month prior to the month in which indexation is applicable, as notified by the Federal Bureau of Statistics.

$CPI_{(Ref)}$ = the CPI (General) in Pakistan for the month in which the tariff is determined, as notified by the Federal Bureau of Statistics.

10.1.3 Insurance Cost

The Reference Insurance Cost Component shall be annually indexed to USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan.

Furthermore, the Reference Insurance Cost Component has been calculated on the basis of insurance premium of US$ 390 thousands (0.5% of EPC Price) per annum, which is subject to a maximum cap of 0.5% of the EPC price per annum of the production of actual insurance premium. The adjustment of Insurance Cost Component of the

reference generation tariff for increased insurance premium shall only be applicable is the actia insurance premium for any year is more than US$ 390,000 (0.5% of the EPC price) and shall be applied for by LWP2L along with the annually indexations and shall be applicable for the then subsequent year.

(a) Indexation Formula

The indexation of the Insurance Cost Component shall be based on the following formula:

$$\text{Insurance}_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (\text{FX USD}_{(Rev)} / \text{FX USD}_{(Ref)})$$

Where:

$\text{Insurance}_{(Rev)}$ = the revised Insurance Cost Component applicable for the relevant year

$\text{FX USD}_{(Rev)}$ = the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.

$\text{FX USD}_{(Ref)}$ = TT & OD selling rate of PKR/USD, prevailing on 23rd November 2017 as notified by the National Bank of Pakistan

10.1.4 **Return on Equity and Return on Equity During Construction**

In line with NEPRA's previous determinations, the ROE and ROEDC the Reference Generation Tariff shall be quarterly indexed to the USD/PKR exchange rate, based on the revised TT & OD selling rate of USD notified by the National Bank of Pakistan.

The applicable formula shall be as follows:

$$\text{ROE}_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (\text{FX USD}_{(Rev)} / \text{FX USD}_{(Ref)})$$

$$\text{ROE-DC}_{(Rev)} = \text{Relevant Reference Generation Tariff Component} * (\text{FX USD}_{(Rev)} / \text{FX USD}_{(Ref)})$$

Where:

$\text{ROE}_{(Rev)}$ = the revised ROE component applicable for the relevant quarter

$\text{ROE-DC}_{(Rev)}$ = the revised ROE-DC component applicable for the relevant quarter

FX USD(Rev) = the revised TT & OD selling rate of PKR/USD as on the date on which indexation is applicable, as notified by the National Bank of Pakistan.

$FX\ USD_{(Rcf)}$ = TT & OD selling rate of PKR/USD, prevailing on 23rd November 2017 as notified by the National Bank of Pakistan

10.1.5 **Debt Component**

a) **Local Financing:** The principal and interest component of local financing will remain unchanged throughout the term except for the adjustment due to variation in 3 month KIBOR, while spread of 1.75% on KIBOR remaining the same, according to the following formula:

$$\Delta I = P_{(Rev)} * (KIBOR_{(Rev)} - [\,]\%)/4$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in 3 month KIBOR. ΔI can be positive or negative depending upon whether $KIBOR_{(Rev)}$ > or < [ ]%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each period under adjustment applicable on bi-annual basis.

$P_{(Rev)}$ = the outstanding principal on a quarterly basis at the relevant calculation dates.

b) **SBP Loan:** The principal and interest component of SBP loan will remain unchanged throughout the term except in case where there is any change in SBP rate, the same change shall be adjusted in tariff

c) **Foreign Loan LIBOR -** The principal and interest component of foreign loan will remain unchanged throughout the term except for the adjustment due to variation in 3 months LIBOR, while spread of 4.25% on LIBOR remaining the same, according to the following formula:

$$\Delta I = P_{(Rev)} * (LIBOR_{(Rev)} - [\,]\%)/4$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in 3 month LIBOR. ΔI can be positive or negative depending upon whether $LIBOR_{(Rev)}$ > or < [ ]%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each period under adjustment applicable on bi-annual basis.

$P_{(Rev)}$ = the outstanding principal on a quarterly basis at the relevant calculation dates.

10.2 Adjustments

The Project Company requests NEPRA to allow adjustment to the total Project Cost for the following items forming part of Project Cost:-

(a) The Principal Repayment and cost of debt be adjusted at COD as per the actual borrowing composition;

(b) Interest During Construction be adjusted as per actual based on actual disbursement of loans and prevailing KIBOR rates during the project construction period;

(c) The specific items of Project Cost to be incurred in foreign currency (US$) be adjusted at COD based on the PKR / US$ exchange rate prevailing on the date the transaction was carried out;

(d) Customs duty and other taxes (including SIDS) be adjusted/allowed as per actual;

(e) Any negative financial implications resulting from changes in tax rates, duties etc. and currently applicable sales tax structure may kindly be adjusted in the Project Cost.

(f) Pre-COD Insurance Cost be adjusted at actual subject to a cap of 0.7 % of the EPC cost in line with earlier tariff determinations by NEPRA for other IPPs.

(g) Return on Equity be adjusted at COD in order to ensure an IRR based return of 15% on equity (while treating the project as a Build-Own-Operate type project).

(h) ROEDC is to be allowed at the time of COD, as true-up adjustment, based on actual equity injections to the LML by the Project Sponsors.

10.3 Wind Risk during Operations

In past cost-plus tariff petitions for wind power projects, wind risk (i.e. risk of lower than benchmark wind speeds) was borne by the Power Purchaser in line with the Policy for Renewable Energy, 2006. The energy output, for the purpose of tariff computation was determined based on a reference 'benchmark wind speed'. Payments to the Project were adjusted with reference to the benchmark, in accordance with the actual wind speeds observed at the sites. In order to minimize risks and disruptions to the project's cash-flows, the tariffs were adjustable to wind speeds at both higher and lower than the benchmark. This procedure remains aligned with the spirit of cost plus tariff and is also captured in the Policy for Renewable Energy, 2006.

With the successful growth of the wind power industry in Pakistan, NEPRA began announcing upfront tariffs for wind power projects. Wind risk protection was not included in the upfront tariff regimes as the upfront tariff was considered a 'take it or leave it option', with all opportunities as well as all risks taken by the project developers.

The Petitioner understands that the Power Purchaser, AEDB and NEPRA are not in favor of providing coverage against wind speed risks to project developers. Therefore, the Petitioner has not requested any allowance or provision in the Reference Tariff for coverage against wind risk, provided that the Reference Tariff is approved on the

estimated 38% annual capacity factor. The Petitioner has accepted all potential risks arising from unpredictable wind speeds, which may result in energy shortfalls during the operations period and the Petitioner is also absorbing all such potential costs (including lender's requirements) related to this aspect.

10.4 Compensation against higher than assumed energy yields

Despite the sophisticated forecasting techniques available, it is impossible to accurately predict the wind speed and wind direction over the course of the life of the Project. Both these parameters affect the energy output of the plant; wind speed directly and wind direction indirectly through *'wake effects'*. It is also pertinent to mention that the annual energy assumed for the purpose of this Petition is based on an average energy output; the Project may experience energy output higher than the benchmark assumption in some years, whereas in other years the energy output may be significantly lower than the threshold of 166,440 MWh per annum.

As mentioned in the preceding section, *the Petitioner is bearing the risks associated with the potential of lower than predicted wind speeds*, as well as their further repercussions. Therefore, in order to have an opportunity to recover its potential energy shortfall on account of wind speed, the Petitioner has assumed that any such energy generated over and above the 38% capacity factor shall be paid at the full tariff rate to the Project

It is humbly emphasized that the Petitioner should be allowed compensation for energy output above 38% capacity factor at the Reference Generation Tariff to cater for the risks of variability in the wind speed, from which the Petitioner can potentially suffer during the life of the Project.

10.5 Non Project Missed Volume (NPMV)

The Petitioner expects that the Non-Project Missed Volume (NPMV) shall be paid by CPPA for the generation missed by the Project Company due to the occurrence of a non-project event (NPE) based on the 38% capacity factor according to the same mechanism as in the precedent tariff mechanism.

10.6 Energy Purchase Agreement (EPA)

The Petitioner has assumed that the EPA shall be signed with CPPA on the same concept as the case of all previously executed EPAs for wind power, that is, the EPAs of latest upfront tariffs will only be modified to the extent of capturing the project specific and tariff specific aspects. Any further changes therein shall make the finalization of the EPA a cumbersome challenge and the Project might become unviable.

10.7 Energy Sale Prior to COD

It is standard practice for wind power projects internationally to come online one WTG at a time, thereby, enabling the wind farm to commence dispatching energy to the grid as soon as a WTG is capable of power generation. Commissioning of a WTG cannot be completed without the substation being completed, tested and commissioned, therefore, all protection and safety equipment required to ensure smooth, safe operation of the

wind farm (and the grid) would already be in place prior to commissioning of the WTGs. As soon as a WTG has been commissioned, it is ready to supply energy to the grid.

The standard EPA approved by the GOP permitted wind power developers to claim compensation from NTDC for supply of electricity prior to achievement of COD. The same has been allowed to wind power projects developed under the upfront tariff regimes.

As it has been allowed for past wind IPPs, NEPRA is humbly requested to allow the Project to claim compensation from the Power Purchaser for all electricity supplied into the grid system prior to achievement of COD at the tariff rate applicable for the first year of operation minus the debt servicing components of the tariff.

Section 11. Pass Through Items & Tariff Assumptions

11.1 Pass Through Items

Authority is requested to allow following cost components as pass-through to LWP2L on the basis of actual costs incurred by Project Company or obligated to be paid in relation to the Project pursuant to Laws of Pakistan.

a) No provision of income tax has been provided for in the tariff. If the Project Company is obligated to pay any type of tax, the same should be allowed to the Project Company as pass through.

b) No withholding tax on dividend has been included in the tariff. Authority is requested to allow payment of withholding tax on dividend as pass through at the time of actual payment of dividend.

c) The payments to Workers Welfare Fund and Workers Profit Participation Fund have not been accounted for in the Project budget and have been assumed to be reimbursed as pass through at actual by the power purchaser.

d) Zakat deduction on dividends as required under Zakat Ordinance is considered as a pass through;

e) No tax on income of LWP2L (including proceeds against sale of electricity to CPPA) has been assumed. Corporate tax, turn over tax, general sales tax / provincial sales tax and all other taxes, excise duty, levies, fees etc. by any federal / provincial entity including local bodies as and when imposed, shall be treated as a pass through item;

f) No hedging cost is assumed for exchange rate fluctuations during construction and all cost overruns resulting from variations in the exchange rate during construction shall be allowed as pass through;

g) Any costs incurred by Project Company, which are required to be incurred by Power Purchaser pursuant to provisions of EPA shall also be treated as pass through.

h) Except above-mentioned items in this sub-clause 11.1, any other taxes and charges that constitute as part of the Project Cost for construction period and operation period shall be treated as pass through.

11.2 Assumptions

The proposed Reference Tariff is based on the following assumptions. A change in any of these assumptions will necessitate a corresponding adjustment in the Reference Tariff:

a) Debt for the Project will be sourced from local financial institutions. Exact composition of local debt will be finalized prior to financial close; adjustment against the same will be requested at the time of COD;

b) An exchange rate of PKR 105 /USD has been assumed. Indexation against PKR / USD variations will be permitted for debt servicing payments and all other project costs denominated in foreign currency. Tariff components shall be respectively indexed for exchange rate variations as discussed in Section 10;

c) The timing of drawdown of debt and equity may vary from those specified in this Petition; as such, the Project Cost will be adjusted on the basis of actual IDC at COD. Similarly, ROEDC component will also be updated in the Reference Tariff;

d) Similarly, adjustments in Project Cost due to variation in PKR / USD variations and KIBOR fluctuations will also be catered for at the time of COD;

e) Taxes and Custom duties amounting to US$ 1.03 Million have been assumed on the import of plant and equipment under RE Policy will be adjusted as per actual payment at COD;

f) Withholding tax @ 0.00% (Zero Percent) has been assumed at the time of import of machinery, equipment, goods, spares and materials for the Project in line with exemption provided under Section 53 of the Income tax Ordinance 2001, read with clause 77 to the Part H of 2nd Schedule to the Income Tax Ordinance. In case there is any change in taxes etc., or additional taxes, fees, excise duty, levies, etc. are imposed, the EPC cost and ultimately the Project cost and the Reference Tariff will need to be adjusted accordingly;

g) The power purchaser will compensate for energy delivered to the power purchaser prior to COD. For this purpose Energy Purchase Price shall be paid for all energy delivered prior to COD. Payments will be invoiced to the power purchaser as per mechanism specified in the EPA;

h) The power purchaser shall be solely responsible for the financing, engineering, procurement, construction, testing and commissioning of the interconnection and transmission facilities up till the Project gantry point. Said facilities will be made available to the Project at least on or before the deadline set out in the EPA. Furthermore, the power purchaser will be solely responsible for operation and maintenance of the said interconnection and transmission facilities;

i) Project contingency and maintenance reserves are not included in Reference Tariff calculations. If required by lenders, these will be adjusted accordingly in the

Reference Tariff;

j) In case of any unintentional error or omissions, typographic errors, and any genuine assumption being overlooked, the same will be corrected/incorporated and advised to NEPRA as soon as the Project Company becomes aware of it;

k) Any additional indexation or concession allowed by the GOP, NEPRA or any other Govt. entity to any IPP will be allowed to LWP2L without any discrimination.

Liberty Wind Power 2 (Private) Limited (formerly Noor Solar Energy (Private) Limited)

Dated: 29/12/17