



Registar

National Electric Power Regulatory Authority Islamic Republic of Pakistan

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No. NEPRA/TRF-262/BEPL-2014/5301-5303
May 23, 2014

Subject: Approval of National Electric Power Regulatory Authority in the matter of Application of Bukhsh Energy (Private) Limited for Unconditional Acceptance of Upfront Solar Tariff for 10 MW Solar Power Plant [Case No. NEPRA/TRF-262/BEPL-2014]

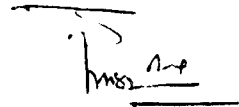
Dear Sir,

Please find enclosed herewith the subject Approval of the Authority along with Annexure-I & II (09 pages) in Case No. NEPRA/TRF-262/BEPL-2014.

2. The Decision is being intimated to the Federal Government for the purpose of notification of the approved tariff in the official gazette pursuant to Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997).

3. Please note that only Order of the Authority at para 4 of the Decision along with Annexure-I & II needs to be notified in the official Gazette.

Enclosure: As above


(Syed Safeer Hussain)

Secretary
Ministry of Water & Power
'A' Block, Pak Secretariat
Islamabad

CC:

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

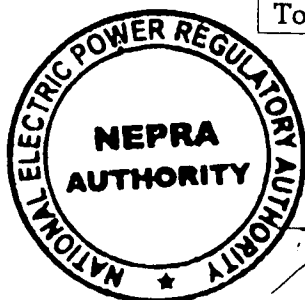


**APPROVAL OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
IN THE MATTER OF APPLICATION OF BUKHSH ENERGY (PRIVATE) LIMITED
FOR UNCONDITIONAL ACCEPTANCE OF UPFRONT SOLAR TARIFF FOR 10
MW SOLAR POWER PLANT**

1. Bukhsh Energy (Private) Limited (hereinafter "BEPL") submitted application vide letter dated April 1, 2014 under Regulation 4(1) of NEPRA Upfront Tariff (Approval and Procedure) Regulations, 2011 (hereinafter "Upfront Tariff Regulations") for unconditional acceptance of upfront tariff for solar power plants determined by the National Electric Power Regulatory Authority (hereinafter "The Authority") vide determination dated January 21, 2014 notified vide SRO No. 158(I)/2014 dated 5th March 2014 with all the terms, conditions and assumptions provided therein (hereinafter "Upfront Tariff Determination"), for its proposed solar power plant of 10 MW installed capacity located at Cholistan, Punjab. BEPL has filed an application for the grant of Generation License vide letter dated February 4, 2013 which is under process
2. The application was processed in accordance with the relevant provisions of Upfront Tariff Regulations and Upfront Tariff Determination. The Applicant provided all necessary and relevant information/documents and was considered eligible for grant of Upfront Tariff determination.
3. In terms of applicable terms and conditions of Upfront Tariff determination, BEPL shall achieve the financial close by 31st March 2015 and in case of failure of BEPL to achieve financial close by 31st March 2015 or generation license is declined to the applicant, the granted upfront tariff will no longer remain applicable/valid.
4. **Order**
 1. The Authority approves the following upfront tariff and adjustments/indexations for Bukhsh Energy (Private) Limited for delivery of electricity to the power purchaser based on 10MWp solar power plant on the rated capacity of the solar PV panels installed:

Specified Reference Tariff

Description	Year 1-10	Year 11-25	Indexations
	Rs./kWh	Rs./kWh	
Fixed O&M	1.7391	1.7391	CPI , US CPI, US\$/PKR
Insurance	1.1594	1.1594	Actual on annual basis
Debt Service – Foreign	12.3570	-	US\$/PKR & LIBOR
Return on Equity	5.8583	5.8583	US\$ /PKR
Total	21.1138	8.7568	





Note:

- i. The above tariff will be applicable for 25 years commencing from the date of the commercial operations.
- ii. The reference component-wise tariff and debt service schedules are attached at Annex-I and Annex-II respectively.

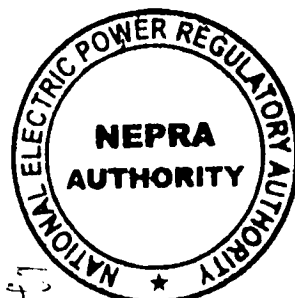
II. One Time Adjustment at COD

- i). The Authority has assessed Equipment, Procurement and Construction (EPC) cost of US\$ 1.6927083 million/MW. The reference exchange rate has been assumed as Rs. 105/US\$. Since the exact timing of payment to EPC contractor is not known at this point of time, therefore, an adjustment for relevant foreign currency fluctuation for the portion of payment in the relevant foreign currency will be made. In this regard the sponsor will be required to provide all the necessary relevant details along with documentary evidence. The adjustment shall be made only for the currency fluctuation against the reference parity values.
- ii). Cost of insurance during construction shall be adjusted at the time of COD on actual basis on production of documentary evidence subject to maximum of 0.75% of the EPC cost.
- iii) Financing fees shall be adjusted at the time of COD as per actual subject to maximum of 3.5% of the total financing.
- iv) The IDC shall be reestablished at the time of COD with actual LIBOR, actual debt equity ratio and actual premium with maximum of 450 basis points. In case of KIBOR, the maximum allowed premium will be 350 basis points.

III. Adjustment in Insurance as per actual

- i) The actual insurance cost for the minimum cover required under contractual obligations with the Power Purchaser not exceeding 1% of the 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:

$$\text{Insurance (Adj)} = \text{AIC} / P_{(\text{Ref})} * P_{(\text{Act})}$$



Where;

- AIC = Adjusted Insurance Component
- $P_{(Ref)}$ = Reference Premium 1% of EPC Cost at exchange rate of Rs. 105/US\$
- $P_{(Act)}$ = Actual Premium or 1% of the EPC cost in Pak Rupees on exchange rate prevailing on the 1st day of the insurance coverage period which ever is lower

IV. **Indexations:**

The following indexations shall be applicable to the reference tariff;

i) **Indexation of Return on Equity (ROE)**

After COD, ROE component of tariff will be quarterly indexed on account of variation in PKR/US\$ parity according to the following formula:

$$ROE(Rev) = ROE(Ref) * ER(Rev) / ER(Ref)$$

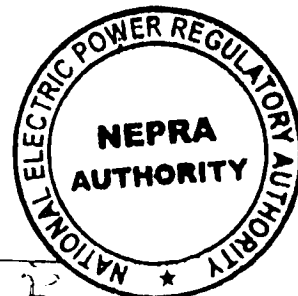
Where;

- ROE (Rev) = Revised ROE Component of Tariff
- ROE (Ref) = ROE Component of Tariff established at the time of COD
- ER (Rev) = The revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan
- ER (Ref) = Reference Exchange Rate at the time of COD

ii) **Indexation applicable to O&M**

The O&M component of tariff will be adjusted on account of local Inflation (CPI) and foreign inflation (US CPI) and exchange rate quarterly on 1st July, 1st October, 1st January and 1st April based on the latest available information with respect to CPI notified by the Pakistan Bureau of Statistics (PBS), US CPI issued by US Bureau of Labor Statistics and revised TT & OD selling rate of US Dollar notified by the National Bank of Pakistan as per the following mechanism:

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L O&M _(REV)	=	70% of O&M _(REF) * CPI _(REV) / CPI _(REF)
F O&M _(REV)	=	30% of O&M _(REF) * US CPI _(REV) / US CPI _(REF) * ER _(REV) /ER _(REF)
Where:		
L O&M _(REV)	=	the revised applicable O&M Local Component of tariff
F O&M _(REV)	=	the revised applicable O&M Foreign Component of tariff
O&M _(REF)	=	the reference O&M component of component of tariff
CPI _(REV)	=	the revised Consumer Price Index (General) published by Pakistan Bureau of Statistics.
CPI _(REF)	=	the reference Consumer Price Index (General) of 191.21 of November 2013
US CPI _(REV)	=	the revised US CPI (All Urban Consumers) published by US Bureau of Labor Statistics
US CPI _(REF)	=	the reference US CPI (All Urban Consumers) of 233.069 of November 2013
ER _(REV)	=	the revised TT & OD selling rate of US dollar published by National Bank of Pakistan
ER _(REF)	=	the reference TT & OD selling rate of RS. 105/US dollar

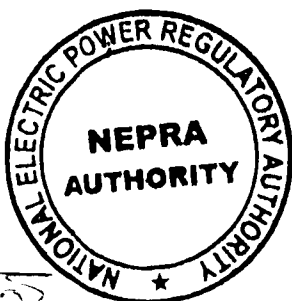
iii) Indexation for LIBOR Variation

The interest part of fixed charge component will remain unchanged throughout the term except for the adjustment due to variations in interest rate as a result of variation in 3 months LIBOR according to the following formula;

$$\Delta I = P_{(REV)} * (LIBOR_{(REV)} - 0.31\%) / 4$$

Where:

ΔI = the variation in interest charges applicable corresponding to variation in 3 months LIBOR. ΔI can be positive or negative depending upon whether LIBOR_(REV) is > or < 0.31%. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each quarter under adjustment applicable on quarterly basis.





$P_{(REV)} =$ The outstanding principal (as indicated in the attached debt service schedule to this order) on a quarterly basis on the relevant quarterly calculation date. Period 1 shall commence on the date on which the 1st installment is due after availing the grace period.

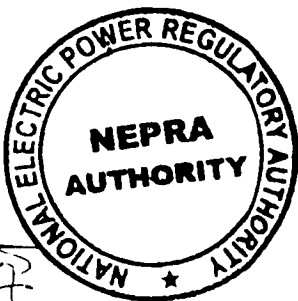
V. Terms and Conditions of Tariff:

The above tariff and terms and conditions, stipulated hereunder, shall be incorporated in the Energy Purchase Agreement between the Power Purchaser and the Power Producer.

- i. All plant and equipment shall be new and shall be designed, manufactured and tested in accordance with the latest IEC standards or other equivalent standards.
- ii. The verification of the new machinery will be done by the independent engineer at the time of the commissioning of the plant duly verified by the power purchaser.
- iii. The Energy Purchase Agreement should stipulate terms and conditions, regarding periodic physical inspection of the plant and equipment, ensuring that the power plant is properly maintained and continues to supply energy for the entire tariff control period of 25 years.
- iv. Plant Capacity factor will be 17.50%.
- v. In case the actual output exceeds the minimum output, the excess energy will be charged in accordance with the following mechanism:

Net Annual Plant Capacity Factors	% of the prevalent tariff
Above 17.50% to 18.50%	75%
Above 18.50% to 19.50%	50%
Above 19.50% to 20.50%	25%
Above 20.50% to 21.50%	20%
Above 21.50%	10%

- vi. The risk of lower solar irradiation will be on the power producer.
- vii. The applicant will have to achieve financial close by March 31, 2015. The upfront tariff granted to the applicant will no longer remain





applicable/valid, if financial close is not achieved by the applicant by March 31, 2015 or generation license is declined to the applicant.

- viii. The targeted maximum construction period after financial close is 8 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 applicant to complete construction within 8 months of financial close will not invalidate the tariff granted to it.
- ix. On the basis of IfE Germany validation of the energy estimates, the degradation not exceeding 0.7%/annum of initial power will be provided in the Energy Purchase Agreement.
- x. Pre COD sale of electricity to the power purchaser, if any, shall be allowed subject to the terms and conditions of EPA, at the applicable tariff excluding principal repayment of debt component and interest component.
- xi. In the Upfront 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 Policy for Development of Renewable Energy for Power Generation 2006, as amended from time to time.
- xii. The decision to opt for upfront tariff once exercised will be irrevocable.
- xiii. Debt part of the project financing has been assumed on foreign financing. However, the debt part of the project can also be financed through local financing or mix of local and foreign financing and the debt servicing component will be adjusted accordingly.
- xiv. The adjustment/indexation of upfront tariff will be made on the basis of benchmarks assumed by the Authority for Upfront Tariff in accordance with the indexation mechanism stipulated hereinabove, and a single Upfront Tariff will be applicable for all solar PV projects coming under the Upfront Tariff regime. No project specific adjustments shall be taken into account.
- xv. No provision for income tax, workers profit participation fund and workers welfare fund, any other tax, custom/excise duty or other duty, levy, charge, surcharge or other governmental impositions, payable on the generation, sales, exploration has been accounted for in the tariff. If the company is obligated to pay any tax the exact amount will be reimbursed by CPPA/DISCO on production of original receipts.

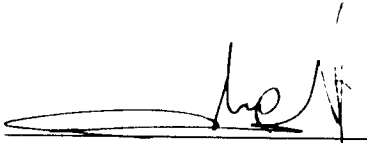


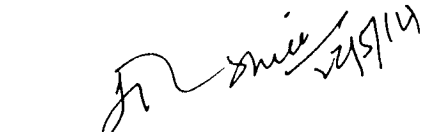


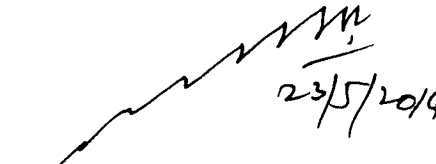
However, withholding tax on dividend will not be pass through under the upfront solar tariff in line with the coal upfront tariff.

- xvi. General assumptions, which are not covered in this determination and National Electric Power Regulatory Authority Upfront Tariff (Approval & Procedure) Regulations, 2011, may be dealt with as per the standard terms of the Energy Purchase Agreement.
5. The above order of the Authority along with Annex-I&II shall be notified in the official gazette in accordance with Section 31(4) of the Act.

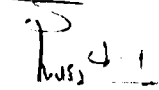
Authority


(Khawaja Muhammad Naeem) 22 5xv
Member


(Maj (R) Haroon Rashid)
Member

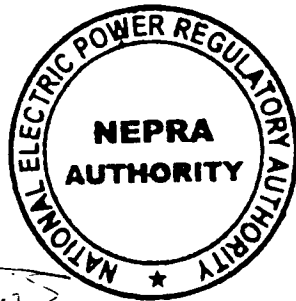

23/5/2014
(Habibullah Khilji)
Vice Chairman




23.05.14

Bukhsh Energy (Private) Limited
Upfront Solar Tariff
Reference Tariff Table (South Region)

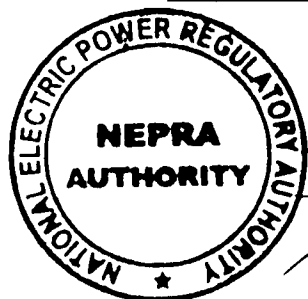
Year	O&M	Insurance	Return on Equity	Debt Servicing	Total Tariff	
	Rs./kWh	Rs./kWh	Rs./kWh	Rs./kWh	Rs. per kWh	¢ per kWh
1	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
2	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
3	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
4	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
5	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
6	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
7	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
8	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
9	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
10	1.7391	1.1594	5.8583	12.3570	21.1138	20.1083
11	1.7391	1.1594	5.8583	-	8.7568	8.3398
12	1.7391	1.1594	5.8583	-	8.7568	8.3398
13	1.7391	1.1594	5.8583	-	8.7568	8.3398
14	1.7391	1.1594	5.8583	-	8.7568	8.3398
15	1.7391	1.1594	5.8583	-	8.7568	8.3398
16	1.7391	1.1594	5.8583	-	8.7568	8.3398
17	1.7391	1.1594	5.8583	-	8.7568	8.3398
18	1.7391	1.1594	5.8583	-	8.7568	8.3398
19	1.7391	1.1594	5.8583	-	8.7568	8.3398
20	1.7391	1.1594	5.8583	-	8.7568	8.3398
21	1.7391	1.1594	5.8583	-	8.7568	8.3398
22	1.7391	1.1594	5.8583	-	8.7568	8.3398
23	1.7391	1.1594	5.8583	-	8.7568	8.3398
24	1.7391	1.1594	5.8583	-	8.7568	8.3398
25	1.7391	1.1594	5.8583	-	8.7568	8.3398
Levelized	1.7391	1.1594	5.8583	8.3649	17.1216	16.3063



Installed Capacity (MWp) 10.000
 Minimum Annual Energy (GWh) 15.330
 CPI (General) November 2013 191.210
 US CPI (All Urban Consumers) November 2013 233.069
 Exchange Rate (Rs./US\$) 105.000

Bukhsh Energy (Private) Limited
Upfront Solar Tariff
Debt Servicing Schedule (South Region)

Period	Foreign Debt					Annual Principal Repayment Rs./kWh	Annual Interest Rs./kWh	Annual Debt Servicing Rs./kWh
	Principal USD	Repayment USD	Mark-up USD	Balance USD	Debt Service USD			
1	14,255,157	279,612	171,418	13,975,544	451,031	7.80	4.56	12.3570
	13,975,544	282,975	168,056	13,692,569	451,031			
	13,692,569	286,378	164,653	13,406,192	451,031			
	13,406,192	289,821	161,209	13,116,371	451,031			
	14,255,157	1,138,786	665,337	13,116,371	1,804,123			
	13,116,371	293,306	157,724	12,823,064	451,031			
	12,823,064	296,833	154,197	12,526,231	451,031			
2	12,526,231	300,403	150,628	12,225,828	451,031	8.18	4.18	12.3570
	12,225,828	304,015	147,016	11,921,813	451,031			
	13,116,371	1,194,557	609,565	11,921,813	1,804,123			
	11,921,813	307,671	143,360	11,614,143	451,031			
	11,614,143	311,371	139,660	11,302,772	451,031			
	11,302,772	315,115	135,916	10,987,657	451,031			
	10,987,657	318,904	132,127	10,668,753	451,031			
3	11,921,813	1,253,060	551,062	10,668,753	1,804,123	8.58	3.77	12.3570
	10,668,753	322,739	128,292	10,346,014	451,031			
	10,346,014	326,620	124,411	10,019,394	451,031			
	10,019,394	330,547	120,483	9,688,847	451,031			
	9,688,847	334,522	116,508	9,354,325	451,031			
	10,668,753	1,314,428	489,694	9,354,325	1,804,123			
	9,354,325	338,545	112,486	9,015,780	451,031			
4	9,015,780	342,616	108,415	8,673,164	451,031	9.00	3.35	12.3570
	8,673,164	346,736	104,295	8,326,428	451,031			
	8,326,428	350,905	100,125	7,975,523	451,031			
	9,354,325	1,378,802	425,321	7,975,523	1,804,123			
	7,975,523	355,125	95,906	7,620,398	451,031			
	7,620,398	359,395	91,635	7,261,002	451,031			
	7,261,002	363,717	87,314	6,897,285	451,031			
5	6,897,285	368,091	82,940	6,529,194	451,031	9.44	2.91	12.3570
	7,975,523	1,446,328	357,794	6,529,194	1,804,123			
	6,529,194	372,517	78,514	6,156,677	451,031			
	6,156,677	376,997	74,034	5,779,681	451,031			
	5,779,681	381,530	69,501	5,398,151	451,031			
	5,398,151	386,118	64,913	5,012,033	451,031			
	6,529,194	1,517,162	286,961	5,012,033	1,804,123			
6	5,012,033	390,761	60,270	4,621,272	451,031	10.39	1.97	12.3570
	4,621,272	395,460	55,571	4,225,812	451,031			
	4,225,812	400,215	50,815	3,825,597	451,031			
	3,825,597	405,028	46,003	3,420,569	451,031			
	5,012,033	1,591,464	212,659	3,420,569	1,804,123			
	3,420,569	409,898	41,132	3,010,671	451,031			
	3,010,671	414,827	36,203	2,595,843	451,031			
7	2,595,843	419,816	31,215	2,176,028	451,031	10.90	1.46	12.3570
	2,176,028	424,864	26,167	1,751,164	451,031			
	3,420,569	1,669,405	134,717	1,751,164	1,804,123			
	1,751,164	429,973	21,058	1,321,191	451,031			
	1,321,191	435,143	15,887	886,047	451,031			
	886,047	440,376	10,655	445,671	451,031			
	445,671	445,671	5,359	(0)	451,031			
8	1,751,164	1,751,164	52,959	(0)	1,804,123	11.43	0.92	12.3570
9						11.99	0.36	12.3570



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