



Registrar

National Electric Power Regulatory Authority

Islamic Republic of Pakistan

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No. NEPRA/TRF-324/HSPL-2015/9991-9993
July 2, 2015

Subject: Approval of National Electric Power Regulatory Authority in the matter of Application of Harappa Soar (Private) Limited for Unconditional Acceptance of Upfront Tariff for 18 MW Solar PV Power Plant [Case No. NEPRA/TRF-324/HSPL-2015]

Dear Sir,

Please find enclosed herewith the subject Approval of the Authority along with Annexure-I & II (09 pages) in Case No. NEPRA/TRF-324/HSPL-2015.

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. Order of the Authority along with Annexure-I & II of the Approval shall 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 HARAPPA SOLAR (PRIVATE) LIMITED (HSPL)
FOR UNCONDITIONAL ACCEPTANCE OF UPFRONT TARIFF FOR 18 MW SOLAR PV
POWER PLANT

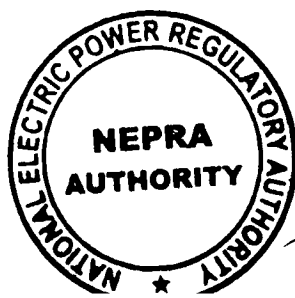
1. Harappa Solar (Private) Limited (hereinafter "HSPL") submitted an application vide letter dated June 8, 2015 under NEPRA Upfront Tariff (Approval and Procedure) Regulations, 2011 (hereinafter "Upfront Tariff Regulations") for unconditional acceptance of upfront solar tariff for 18 MW determined by the National Electric Power Regulatory Authority (hereinafter "The Authority") vide its determination dated 22nd January 2015 notified vide SRO No. 183(I)/2015 dated 3rd March 2015 with all the terms, conditions and assumptions provided therein (hereinafter "Upfront Tariff Determination"), for its proposed Solar PV power plant of 18 MW located near Harappa bypass, Tehsil & district Sahiwal, in the Province of Punjab.
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. Accordingly, the Authority has decided to grant the upfront solar tariff for 18 MW for North region to the applicant. HSPL has filed an application for the grant of Generation License vide letter dated May 20, 2015 which is under process.
3. In terms of applicable terms and conditions of Upfront Tariff determination, HSPL shall achieve the financial close within one year from the date of opting the upfront tariff and in case of failure of HSPL to achieve financial close within stipulated time or generation license is declined to the applicant, the granted upfront tariff will no longer remain applicable/valid.
4. **Order**
 - I. The Authority hereby determines and approves the following upfront tariff for Harappa Solar (Private) Limited and adjustments/indexations for solar power generation for delivery of electricity to the power purchaser based on solar PV power plant of 18 MWp near Harappa bypass, Tehsil & district Sahiwal, Northern Punjab:

Specified Reference Tariff

NORTH REGION

Description	Year 1-10	Year 11-25	Indexations
	Rs./kWh	Rs./kWh	
O&M	2.5797	2.5797	CPI , US CPI, PKR/US\$
Insurance	1.0081	1.0081	Actual on annual basis
ROE	5.0186	5.0186	PKR/US\$
Debt Servicing	10.5960	-	PKR/US\$ & LIBOR/KIBOR
Total Tariff	19.2025	8.6065	

The Tariff Table and Debt Service Schedule are attached as Annex-I and Annex-II.





II. One Time Adjustment at COD

- i) 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 against the reference exchange rate of Rs. 105/US\$. 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) The approved taxes and duties of US\$ 47,365/MW in the EPC cost will be adjusted as per actual at the time of COD stage adjustment of tariff on the basis of verifiable documentary evidence.
- iii) Interest during construction will be reestablished at the time of COD on the basis of actual project financing and actual average LIBOR/KIBOR and applicable premiums.

III. Adjustment in Insurance as per actual

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:

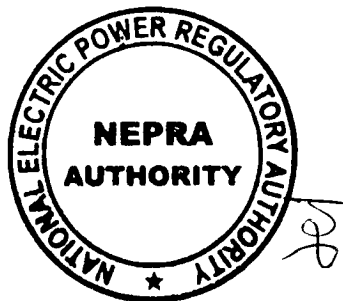
AIC	=	$Ins_{(Ref)} / P_{(Ref)} * P_{(Act)}$
Where		
AIC	=	Adjusted Insurance Component of Tariff
$Ins_{(Ref)}$	=	Reference Insurance Component of Tariff
$P_{(Ref)}$	=	Reference Premium 1% of the EPC cost at Rs. 105/US\$.
$P_{(Act)}$	=	Actual Premium or 1% of the EPC cost in Pak Rupees on exchange rate 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:

$L O\&M_{(Rev)}$	=	$L O\&M_{(Ref)} * CPI_{(Rev)} / CPI_{(Ref)}$
$F O\&M_{(Rev)}$	=	$F O\&M_{(Ref)} * US CPI_{(Rev)} / US CPI_{(Ref)} * ER_{(Rev)} / ER_{(Ref)}$
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
$L O\&M_{(Ref)}$	=	the reference local O&M component of tariff for North Region Rs. 0.3572/kWh and for South Region Rs. 0.3425/kWh
$F O\&M_{(Ref)}$	=	the reference foreign O&M component of tariff for North Region Rs. 2.2226/kWh and for South Region Rs. 2.1311/kWh
$CPI_{(Rev)}$	=	the revised Consumer Price Index (General) published by Pakistan Bureau of Statistics.
$CPI_{(Ref)}$	=	the reference Consumer Price Index (General) of 198.700 for the month of August 2014
$US CPI_{(Rev)}$	=	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 237.852 for the month of August 2014
$ER_{(Rev)}$	=	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 variation in interest rate as a result of variation in 3 months LIBOR according to the following formula;

ΔI	=	$P_{(REV)} * (LIBOR_{(REV)} - 0.31\%) / 4$
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 1 st 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:

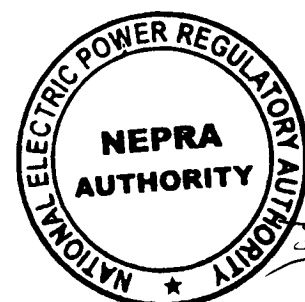
- All plant and equipment shall be new and shall be designed, manufactured and tested in accordance with the latest IEC standards or other equivalent standards.
- The verification of the new machinery will be done by the independent engineer at the time of the commissioning of the plant duly verified by the power purchaser.
- 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 for north region is 16.78%.
- 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 16.78% to 17.78%	75%
Above 17.78% to 18.78%	50%
Above 18.78% to 19.78%	25%
Above 19.78% to 20.78%	20%
Above 20.78%	10%

- vi. The risk of lower solar irradiation will be on the power producer.
- vii. The applicant will have to achieve financial close within one year from the date of opting the upfront tariff. The upfront tariff granted to the applicant will no longer remain applicable/valid, if financial close is not achieved by the applicant within the stipulated time.
- viii. The tariff control period will be 25 years from the date of commercial operation.
- ix. The dispatch will be at appropriate voltage level from 11kV to 220kV mutually agreed between the power purchaser and the power producer.
- x. 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 the stipulated time will not invalidate the tariff granted to it.
- xi. 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. The adjustment on this account will apply if it is within the manufacturers prescribed technical limits. This shall not be allowed if the generation remains in excess of the benchmark plant capacity factors.



- xii. 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.
- xiii. 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.
- xiv. The decision to opt for upfront tariff once exercised will be irrevocable.
- xv. 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.
- xvi. 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 respective Upfront Tariff will be applicable to the solar PV projects coming under the Upfront Tariff regime. No project specific adjustments shall be taken into account.
- xvii. 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 except as provided under Para 4(II)(ii). 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 passed through under the upfront solar tariff in line with the previous upfront solar tariff and coal upfront tariff.
- xviii. 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.



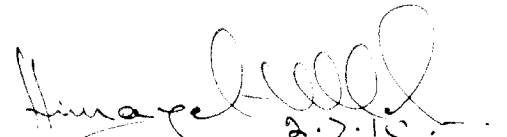
- VI Any benefits accruing under the revised order of the Authority dated 25-05-2015 issued vide No. NEPRA/UTS-01/7915-7917 shall also be applicable in the instant case after its notification in the Official Gazette.
- VII The above Order of the Authority along with Annex-I and Annex-II shall be notified in the Official Gazette in terms of Section 31(4) of the Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997.

AUTHORITY



02.7.15

(Khawaja Muhammad Naeem)
Member



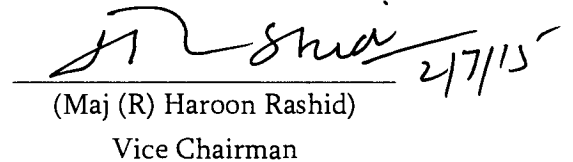
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(Himayat Ullah Khan)
Member



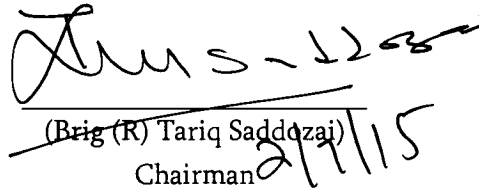
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(Masood-ul-Hassan Naqvi)
Member



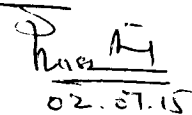
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(Maj (R) Haroon Rashid)
Vice Chairman



2/7/15

(Brig (R) Tariq Saddozai)
Chairman



02.07.15

Harappa Solar (Private) Limited Reference Tariff Table (North 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	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
2	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
3	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
4	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
5	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
6	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
7	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
8	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
9	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
10	2.5797	1.0081	5.0186	10.5960	19.2025	18.2881
11	2.5797	1.0081	5.0186	-	8.6065	8.1967
12	2.5797	1.0081	5.0186	-	8.6065	8.1967
13	2.5797	1.0081	5.0186	-	8.6065	8.1967
14	2.5797	1.0081	5.0186	-	8.6065	8.1967
15	2.5797	1.0081	5.0186	-	8.6065	8.1967
16	2.5797	1.0081	5.0186	-	8.6065	8.1967
17	2.5797	1.0081	5.0186	-	8.6065	8.1967
18	2.5797	1.0081	5.0186	-	8.6065	8.1967
19	2.5797	1.0081	5.0186	-	8.6065	8.1967
20	2.5797	1.0081	5.0186	-	8.6065	8.1967
21	2.5797	1.0081	5.0186	-	8.6065	8.1967
22	2.5797	1.0081	5.0186	-	8.6065	8.1967
23	2.5797	1.0081	5.0186	-	8.6065	8.1967
24	2.5797	1.0081	5.0186	-	8.6065	8.1967
25	2.5797	1.0081	5.0186	-	8.6065	8.1967
Levelized	2.5797	1.0081	5.0186	7.1728	15.7793	15.0279

Installed Capacity (MWp) 20.000
 Minimum Annual Energy (GWh) 29.399
 CPI (General) August 2014 198.700
 US CPI (All Urban Consumers) August 2014 237.852
 Exchange Rate (Rs./US\$) 105.000



Harappa Solar (Private) Limited
Debt Servicing Schedule (North Region)

Period	Foreign Debt					Annual Principal Repayment	Annual Interest	Annual Debt Servicing
	Principal	Repayment	Mark-up	Balance	Debt Service			
	US\$/MW	US\$/MW	US\$/MW	US\$/MW	US\$/MW	Rs./kWh	Rs./kWh	Rs./kWh
1	1,172,077	22,990	14,094	1,149,087	37,084	6.69	3.91	10.5960
	1,149,087	23,267	13,818	1,125,821	37,084			
	1,125,821	23,546	13,538	1,102,274	37,084			
	1,102,274	23,829	13,255	1,078,445	37,084			
	1,172,077	93,632	54,705	1,078,445	148,337			
	1,078,445	24,116	12,968	1,054,329	37,084			
	1,054,329	24,406	12,678	1,029,923	37,084			
	1,029,923	24,699	12,385	1,005,223	37,084			
2	1,005,223	24,997	12,088	980,227	37,084	7.02	3.58	10.5960
	1,078,445	98,218	50,119	980,227	148,337			
	980,227	25,297	11,787	954,930	37,084			
	954,930	25,601	11,483	929,328	37,084			
	929,328	25,909	11,175	903,419	37,084			
3	903,419	26,221	10,864	877,199	37,084	7.36	3.24	10.5960
	980,227	103,028	45,309	877,199	148,337			
	877,199	26,536	10,548	850,663	37,084			
	850,663	26,855	10,229	823,807	37,084			
	823,807	27,178	9,906	796,629	37,084			
4	796,629	27,505	9,579	769,125	37,084	7.72	2.88	10.5960
	877,199	108,074	40,263	769,125	148,337			
	769,125	27,836	9,249	741,289	37,084			
	741,289	28,170	8,914	713,119	37,084			
	713,119	28,509	8,575	684,610	37,084			
5	684,610	28,852	8,232	655,758	37,084	8.10	2.50	10.5960
	769,125	113,367	34,970	655,758	148,337			
	655,758	29,199	7,885	626,559	37,084			
	626,559	29,550	7,534	597,009	37,084			
	597,009	29,905	7,179	567,104	37,084			
6	567,104	30,265	6,819	536,839	37,084	8.49	2.10	10.5960
	655,758	118,919	29,418	536,839	148,337			
	536,839	30,629	6,455	506,210	37,084			
	506,210	30,997	6,087	475,213	37,084			
	475,213	31,370	5,714	443,843	37,084			
7	443,843	31,747	5,337	412,096	37,084	8.91	1.69	10.5960
	536,839	124,743	23,594	412,096	148,337			
	412,096	32,129	4,955	379,967	37,084			
	379,967	32,515	4,569	347,452	37,084			
	347,452	32,906	4,178	314,545	37,084			
8	314,545	33,302	3,782	281,244	37,084	9.35	1.25	10.5960
	412,096	130,852	17,485	281,244	148,337			
	281,244	33,702	3,382	247,541	37,084			
	247,541	34,108	2,977	213,434	37,084			
	213,434	34,518	2,567	178,916	37,084			
9	178,916	34,933	2,151	143,983	37,084	9.80	0.79	10.5960
	281,244	137,261	11,077	143,983	148,337			
	143,983	35,353	1,731	108,630	37,084			
	108,630	35,778	1,306	72,852	37,084			
	72,852	36,208	876	36,644	37,084			
10	36,644	36,644	441	0	37,084	10.28	0.31	10.5960
	143,983	143,983	4,354	0	148,337			

