



Registrar

# National Electric Power Regulatory Authority

## Islamic Republic of Pakistan

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

No. NEPRA/TRF-303/QASPL-2015/11380-11382  
August 4, 2015

Subject: **Revised Order of National Electric Power Regulatory Authority in the matter of Application of Quaid-e-Azam Solar Power (Private) Limited for Unconditional Acceptance of the Upfront Tariff for 100 MW Solar PV Power Plant [Case No. NEPRA/TRF-303/QASPL-2015]**

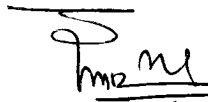
Dear Sir,

In supersession of the earlier Decision/Approval of the Authority in the subject matter communicated by this office vide letter No. NEPRA/TRF-303/QASPL-2015/4077-4079 dated 19-03-2015, please find enclosed herewith the subject Revised Order of the Authority along with Annexure-I & II (09 pages) in Case No. NEPRA/TRF-303/QASPL-2015.

2. The enclosed Revised Order 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 the Revised Order of the Authority along with Annexure-I & II needs to be notified in the official Gazette.

Enclosure: As above

  
( Syed Safeer Hussain )  
04.08.15

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.



**REVISED ORDER OF NATIONAL ELECTRIC POWER REGULATORY AUTHORITY  
(NEPRA) IN THE MATTER OF APPLICATION OF QUAID-E-AZAM SOLAR POWER  
(PRIVATE) LIMITED (QASPL) FOR UNCONDITIONAL ACCEPTANCE OF UPFRONT  
TARIFF FOR 100 MW SOLAR PV POWER PLANT**

1. The Authority determined the Upfront Solar Tariff for Solar PV power plants vide No. NEPRA/UTS-01/905-907 dated 22-1-2015 (hereinafter "the Original Order") which was notified vide SRO No. 183(I)/2015 dated 3<sup>rd</sup> March 2015. Quaid-e-Azam Solar Power (Pvt) Limited (QASPL) submitted an application vide letter dated 25<sup>th</sup> February 2015 under Regulation 4(1) of NEPRA Upfront Tariff (Approval and Procedure) Regulations, 2011 (hereinafter "Upfront Tariff Regulations") for unconditional acceptance of Upfront Solar Tariff for its proposed 100 MW Solar PV power plant located at Lal Sohanra in Cholistan, District Bahawalpur in the Province of Punjab. The Authority vide its decision dated 19-3-2015 approved the upfront in favour of QASPL.
2. The Authority vide its decision dated 25<sup>th</sup> May 2015 (hereinafter "the Revised Order") in the matter of Motion for Leave for Review against the aforesaid decision of the Authority dated 22<sup>nd</sup> January 2015 revised the Original Order of Upfront Solar Tariff. The Revised Order was notified in the Official Gazette vide SRO No. 650(I)/2015 dated 1<sup>st</sup> July 2015. Following has been provided in the Revised Order:

*"Any benefit accruing under the revised order of the Authority shall also be applicable to those companies which have opted for upfront solar PV tariff notified vide SRO No. 183(I)/2015 dated 3<sup>rd</sup> March 2015."*

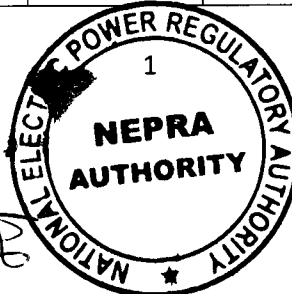
3. Quaid-e-Azam Solar Power (Pvt) Limited vide its letter dated 12<sup>th</sup> June 2015 requested for issuance of the Revised Order in favour of the Company. Accordingly the Authority has decided to issue the Revised Order.

**4. Revised Order**

- I. The Authority hereby determines and approves the following upfront tariff for Quaid-e-Azam Solar Power (Pvt) Ltd and adjustments/indexations for solar power generation for delivery of electricity to the power purchaser based on Solar PV power plant of 100 MW at Lal Sohanra in Cholistan, District Bahawalpur, Southern Punjab:

**Specified Reference Tariff  
SOUTH REGION**

Description	Year 1-10	Year 11-25	Indexations
	Rs./kWh	Rs./kWh	
O&M	2.4736	2.4736	CPI, US CPI, PKR/US\$
Insurance	0.9307	0.9307	Actual on annual basis
ROE	4.7903	4.7903	PKR/US\$
Debt Servicing	9.8451	-	PKR/US\$ & LIBOR/KIBOR
<b>Total Tariff</b>	<b>18.0397</b>	<b>8.1947</b>	





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.
- iv) In case Sinasure fee or export credit agency fee on foreign financing is payable, the benchmark established in the coal upfront tariff will be applicable subject to maximum of 7% and appropriate adjustment in the project cost shall be made.

## 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:

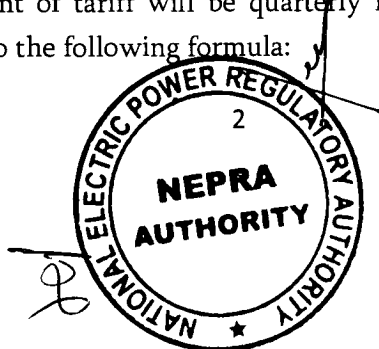
AIC	=	$\text{InS}_{(\text{Ref})} / P_{(\text{Ref})} * P_{(\text{Act})}$
Where		
AIC	=	Adjusted Insurance Component of Tariff
$\text{InS}_{(\text{Ref})}$	=	Reference Insurance Component of Tariff
$P_{(\text{Ref})}$	=	Reference Premium 1% of the EPC cost at Rs. 105/US\$.
$P_{(\text{Act})}$	=	Actual Premium 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 1<sup>st</sup> July, 1<sup>st</sup> October, 1<sup>st</sup> January and 1<sup>st</sup> 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;

$\Delta I$	=	$P_{(REV)} * (LIBOR_{(REV)} - 0.31\%) / 4$
Where:		
$\Delta I$	=	the variation in interest charges applicable corresponding to variation in 3 months LIBOR. $\Delta I$ 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 $\Delta I$ 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 <sup>st</sup> 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.
- Plant Capacity factor for south region will be 17.5%.
- In case the actual output exceeds the minimum output, the excess energy shall be charged in accordance with the following mechanism:

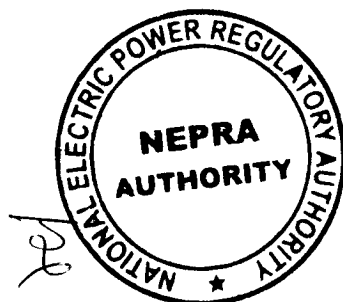


Net Annual Plant Capacity Factors	% of the prevalent tariff
Above 17.50% to 18.50%	75%
Above 18.50% to 19.50%	80%
Above 19.50%	100%

- v. The risk of lower solar irradiation will be on the Power Producer.
- vi. The applicant will have to achieve financial close within one year from the date of approval of the Upfront Tariff in favor of the applicant. 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.
- vii. The tariff control period will be 25 years from the date of commercial operation.
- viii. The dispatch will be at appropriate voltage level from 11kV to 220kV mutually agreed between the Power Purchaser and the Power Producer.
- ix. The targeted maximum construction period after the financial close is 12 months. No adjustment will be allowed in this tariff to account for financial impact of any delay in the project construction. However, the failure of the applicant to complete construction within the stipulated time will not invalidate the tariff granted to it.
- x. Actual degradation subject to maximum of 0.7%/annum of initial power shall be allowed with the condition that degradation shall not be applicable if the generation remains in excess of the benchmark plant capacity factors i.e. 17.5% and 16.78% for South and North regions respectively. The following table is provided for illustrative purpose.

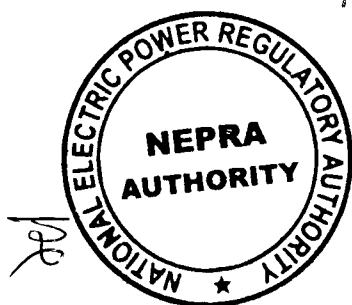
$X_0$  = Energy as determined by NEPRA in GWh

End of Year	Energy (GWh) at the busbar
1	$X_1 = X_0$
2	$X_2 = X_1 \times 0.993$
3	$X_3 = X_2 \times 0.993$
4	$X_4 = X_3 \times 0.993$
.....	





- (a) 0.993 corresponds to a degradation factor of 0.7% which will be changed according to the actual degradation in the respective year.
  - (b)  $X_1, X_2, X_3, \dots$  are energy values at the end of year 1, year 2, year 3 and so on if degradation is allowed subject to conditions to be satisfied as noted above.
  - (c) Reference tariff will be correspondingly adjusted in respective years.
- xi. 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.
- xii. 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.
- xiii. The decision to opt for the Upfront Tariff once exercised, will be irrevocable.
- xiv. 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.
- xv. The adjustment/indexation of upfront tariff will be made on the basis of the benchmarks assumed by the Authority for the Upfront Tariff in accordance with the indexation mechanism stipulated herein above and respective Upfront Tariff will be applicable to the Solar PV Power projects coming under the Upfront Tariff regime. No project specific adjustments shall be taken into account.
- xvi. 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 the original receipts. However, withholding tax on dividend will not be passed through under this tariff.

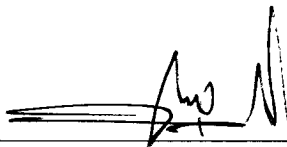


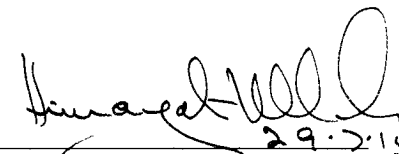


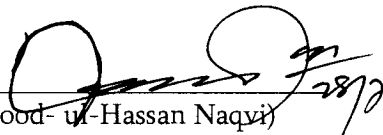
xvii. General assumptions, which are not covered in this determination and National Electric Power Regulatory Authority Upfront Tariff (Approval & Procedure) Regulations, 2011, may be dealt with as per the standard terms of the Energy Purchase Agreement.

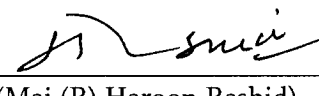
VI. The above Revised Order of the Authority along with Annexes-I and Annex-II will be notified in the Official Gazette in terms of Section 31(4) of the Regulations of Generation, Transmission and Distribution of Electric Power Act, 1997.

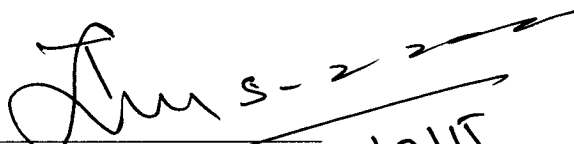
### AUTHORITY

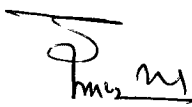
  
(Khawaja Muhammad Naeem)  
Member

  
(Himayat Ullah Khan)  
Member

  
(Masood-ul-Hassan Naqvi)  
Member

  
(Maj (R) Haroon Rashid)  
Vice Chairman

  
(Brig (R) Tariq Sadozai)  
Chairman

  
31.07.15

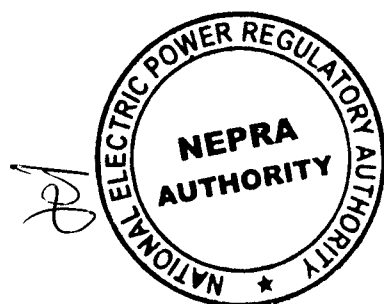




**Quaid-e-Azam Solar Power (Private) Limited**  
**Reference Tariff Table (South Region)**

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	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
2	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
3	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
4	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
5	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
6	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
7	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
8	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
9	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
10	2.4736	0.9307	4.7903	9.8451	18.0397	17.1807
11	2.4736	0.9307	4.7903	-	8.1947	7.8044
12	2.4736	0.9307	4.7903	-	8.1947	7.8044
13	2.4736	0.9307	4.7903	-	8.1947	7.8044
14	2.4736	0.9307	4.7903	-	8.1947	7.8044
15	2.4736	0.9307	4.7903	-	8.1947	7.8044
16	2.4736	0.9307	4.7903	-	8.1947	7.8044
17	2.4736	0.9307	4.7903	-	8.1947	7.8044
18	2.4736	0.9307	4.7903	-	8.1947	7.8044
19	2.4736	0.9307	4.7903	-	8.1947	7.8044
20	2.4736	0.9307	4.7903	-	8.1947	7.8044
21	2.4736	0.9307	4.7903	-	8.1947	7.8044
22	2.4736	0.9307	4.7903	-	8.1947	7.8044
23	2.4736	0.9307	4.7903	-	8.1947	7.8044
24	2.4736	0.9307	4.7903	-	8.1947	7.8044
25	2.4736	0.9307	4.7903	-	8.1947	7.8044
<b>Levelized</b>	<b>2.4736</b>	<b>0.9307</b>	<b>4.7903</b>	<b>6.6645</b>	<b>14.8591</b>	<b>14.1516</b>

Installed Capacity (MWp)	100.000
Minimum Annual Energy (GWh)	153.300
CPI (General) August 2014	198.700
US CPI (All Urban Consumers) August 2014	237.852
Exchange Rate (Rs./US\$)	105.000



**Quaid-e-Azam Solar Power (Private) Limited**  
**Debt Servicing Schedule (South 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	1,135,736	22,277	13,657	1,113,459	35,934	6.21	3.63	9.8451
	1,113,459	22,545	13,389	1,090,913	35,934			
	1,090,913	22,816	13,118	1,068,097	35,934			
	1,068,097	23,091	12,844	1,045,007	35,934			
	1,135,736	90,729	53,009	1,045,007	143,738			
	1,045,007	23,368	12,566	1,021,638	35,934			
	1,021,638	23,649	12,285	997,989	35,934			
2	997,989	23,934	12,001	974,055	35,934	6.52	3.33	9.8451
	974,055	24,221	11,713	949,834	35,934			
	1,045,007	95,173	48,565	949,834	143,738			
	949,834	24,513	11,422	925,321	35,934			
	925,321	24,807	11,127	900,514	35,934			
	900,514	25,106	10,829	875,408	35,934			
	875,408	25,408	10,527	850,000	35,934			
3	949,834	99,834	43,904	850,000	143,738	6.84	3.01	9.8451
	850,000	25,713	10,221	824,287	35,934			
	824,287	26,022	9,912	798,264	35,934			
	798,264	26,335	9,599	771,929	35,934			
	771,929	26,652	9,282	745,277	35,934			
	850,000	104,723	39,015	745,277	143,738			
	745,277	26,973	8,962	718,305	35,934			
4	718,305	27,297	8,638	691,008	35,934	7.17	2.67	9.8451
	691,008	27,625	8,309	663,383	35,934			
	663,383	27,957	7,977	635,425	35,934			
	745,277	109,852	33,886	635,425	143,738			
	635,425	28,293	7,641	607,132	35,934			
	607,132	28,634	7,301	578,498	35,934			
	578,498	28,978	6,956	549,520	35,934			
5	549,520	29,327	6,608	520,193	35,934	7.52	2.32	9.8451
	635,425	115,232	28,506	520,193	143,738			
	520,193	29,679	6,255	490,514	35,934			
	490,514	30,036	5,898	460,478	35,934			
	460,478	30,397	5,537	430,081	35,934			
	430,081	30,763	5,172	399,318	35,934			
	520,193	120,875	22,863	399,318	143,738			
6	399,318	31,133	4,802	368,186	35,934	8.28	1.57	9.8451
	368,186	31,507	4,427	336,679	35,934			
	336,679	31,886	4,049	304,793	35,934			
	304,793	32,269	3,665	272,523	35,934			
	399,318	126,795	16,943	272,523	143,738			
	272,523	32,657	3,277	239,866	35,934			
	239,866	33,050	2,884	206,816	35,934			
7	206,816	33,448	2,487	173,368	35,934	8.68	1.16	9.8451
	173,368	33,850	2,085	139,519	35,934			
	272,523	133,005	10,733	139,519	143,738			
	139,519	34,257	1,678	105,262	35,934			
	105,262	34,669	1,266	70,593	35,934			
	70,593	35,086	849	35,508	35,934			
	35,508	35,508	427	-	35,934			
8	139,519	139,519	4,219	-	143,738	9.56	0.29	9.8451

