

**NATIONAL ELECTRIC POWER REGULATORY AUTHORITY
(NEPRA)**

Decision of the Authority Regulatory Meeting R 05-202
Held on December 15, 2005 in the Matter of Tariff Determination in
the Case of Star Power Generation Company (Pvt.) Ltd.

The Authority considered the recent guidelines issued by the Federal Government "Guidelines for determination of tariff for IPP's pursuant to the decision of the ECC taken in the meeting of November 28, 2005 (guidelines). It is understood that the matter of rate of return on equity allowed to the two IPPs Orient Power Company (Pvt.) Limited (OPCL) and Star Power Generation (Pvt.) Limited (SPGCL) needs to be reconsidered to avoid discrimination with respect to the applicability of the guidelines between intending investors (new IPPs) and the two aforementioned companies. The Authority has therefore considered the matter suo-moto and revised its earlier decision made in respect of the two IPPs OPCL and SPGCL to incorporate the relevant requirement of the guidelines.

Therefore an allowance for equity funds used during construction needs to be incorporated in the return to account for return on equity invested prior to the commercial operation date (COD) so that the IRR on equity equates to the return level already determined

The equity injected prior to the Commercial Operation is expected to be 40% in the year -2 and 60% in the year -1. The allowance for return on equity prior to COD will be adjusted at the time of COD according to the actual equity investments made during the construction period. Incorporating the above changes the revised tariff for the purpose of sale to NTDC is approved.

We hereby recommend to the Federal Government that the modified order of the Star Power Generation Company (Pvt.) Ltd annexed to this decision as Annexure-I, II and II(a) hereby intimated for notification, in the official gazette in accordance with the provisions of Section 31(4) of the Regulation of Generation, Transmission and Distribution of Electric Power Act (XL of 1997), read with Rule 16 of the NEPRA Tariff Standards and Procedure Rules, 1998.

(Nasiruddin Ahmed)
Member

(Abdul Rahim Khan)
Member

Lt. General (R) Saeed uz Zafar
Chairman

MODIFIED ORDER OF THE AUTHORITY
REGARING STAR POWER GENERATION COMPANY (Pvt.) LIMITED
TO BE NOTIFIED IN THE OFFICIAL GAZETTE

Pursuant to Rule 6 of the NEPRA Licensing Generation Rules 2000, Star Power Generation Company (Pvt.) Ltd. (SPGL) is allowed to charge the following specified tariff for sale of electricity to Central Power Purchase Agency of NTDC on behalf of Ex-WAPDA Distribution Companies:

Specified Tariff Schedule		
Description	First 10 years	Next 15 years
Capacity Charge	Rs./kW/Month	Rs./kW/Month
Fixed O&M	120.00	120.00
Insurance	32.53	32.53
Return on Equity & Equity repayments	133.92	150.22
Debt Service	423.66	-
Total Fixed Charge	710.11	302.75
Variable Charge	Rs./kWh	Rs./kWh
Fuel Cost	1.3446	1.3446
Variable O&M	0.1224	0.1224
Total Variable Charge	1.4669	1.4669

Reference WPI Local (Manufactures)	
December 2004	111.37
Reference KIBOR	4.40%
Reference Premium	3.00%
Reference Fuel Price-HHV	171.08
HHV-LHV Factor	1.107753
Reference Fuel Price-LHV	189.51
Reference Exchange Rate	Rs. 60 / \$

Note: The above tariff is applicable for a period of 25 years commencing from the date of Commercial Operation. On the expiry of 25 year period the entire assets of the project shall be handed over to the Government of Pakistan (GoP) for further disposal as deemed fit at that time. Such a change would not result in any revision of the tariff already determined.

i) Indexation applicable to O&M

In future the 50% of Fixed O&M part of Capacity Charge will be adjusted on account of Inflation (WPI) and 50% on account of variation in dollar/Rupee exchange rate. WPI adjustment for inflation will be made on quarterly basis, on the basis of WPI as notified by the Federal Bureau of Statistics (FBS) for

the month of August, November, February & May respectively. Indexation for variation in dollar/rupee exchange rate will be made on October 1, January 1, April 1 & July 1 on the basis of revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexation for escalable component will be as under:

(a) Fixed O&M

$$F O\&M_{(RCPI)} = \text{Rs.120 per kW per Month} * 50\% WPI_{(REV)} / 111.37$$

$$F O\&M_{(RE)} = \text{Rs.120 per kW per Month} * 50\% * ER_{(REV)} / 60$$

Where:

$F O\&M_{(RCPI)}$ = the revised applicable Fixed O&M Component of the Capacity Charge indexed with CPI

$F O\&M_{(RE)}$ = the revised applicable Fixed O&M Component of the Capacity Charge indexed with Currency fluctuation

$WPI_{(REV)}$ = the Revised Wholesale Price Index (manufactures)

Reference WPI = 111.37 Wholesale price index of December 2004 notified by Federal Bureau of Statistics

$ER_{(REV)}$ = the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

Reference ER = the Revised Exchange Rate

(b) Variable O&M

The formula of indexation for variable O & M component will be as under:

$$V O\&M_{(REV)} = \text{Rs.0.1224 per kWh} * ER_{(REV)} / \text{Rs.60 per \$}$$

Where:

$V O\&M_{(REV)}$ = the revised applicable Variable O&M Component of Energy Charge

$ER_{(REV)}$ = the Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan

ii) Indexation for Exchange Rate Variation

The insurance and return on equity will be adjusted for variation in dollar/rupee exchange rate. The adjustment will be made on October 1, January 1,

April 1 & July 1 on the basis of revised TT & OD selling rate of US Dollar as notified by the National Bank of Pakistan. The mode of indexation will be as under:

a) Insurance

$$\text{Insurance (Rev)} = \text{Rs.32.53 per kW per Month} * \text{ER}_{(\text{REV})} / 60$$

Where:

Insurance (Rev) = Revised Insurance after adjustment for exchange rate variation.

$\text{ER}_{(\text{REV})}$ = The Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan.

b) Return on Equity/Equity Redemption

$$\text{ROE (Rev1)} = \text{Rs. 125.87 per kW per Month} * \text{ER}_{(\text{REV})} / 60$$

$$\text{ROE (Rev2)} = \text{Rs. 143.50 per kW per Month} * \text{ER}_{(\text{REV})} / 60$$

Where:

ROE (Rev1) = Return on Equity for period 1 i.e. during first 10 years.

ROE (Rev2) = Return on Equity for period 2 i.e. during first 15 years.

$\text{ER}_{(\text{REV})}$ = The Revised TT & OD selling rate of US dollar as notified by the National Bank of Pakistan.

iii) Adjustment for KIBOR variation

The interest part of non-escalable 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 quarterly KIBOR according to the following formula;

$$\Delta I = P_{(\text{REV})} * (\text{KIBOR}_{(\text{REV})} - 4.4\%) / 4$$

Where:

ΔI = The variation in interest charges applicable corresponding to variation in KIBOR. ΔI can be positive or negative depending upon whether KIBOR $REV >$ or $< 4.4\%$. The interest payment obligation will be enhanced or reduced to the extent of ΔI for each quarter under adjustment applicable on quarterly basis.

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

(iv) Fuel Price Variation

The Variable Charge part of the tariff relating to fuel cost shall be adjusted on account of the fuel price variations as and when notified by the relevant authority, which in the instant case is the Oil & Gas Regulatory Authority. In this regard, the variation in SPGL's allowed rate relating to fuel cost shall be revised according to the following formula:

$$FC(Rev) = \text{Rs.1.3446 per kWh} * FP(Rev) / \text{Rs.189.51 per MMBTUs}$$

Where:

$FC(Rev)$ = Revised fuel cost component of Variable Charge

$FP(Rev)$ = The new fuel price as notified by the relevant Authority per MMBTUs of fuel adjusted for LHV-HHV factor.

Adjustment on account of inflation, foreign exchange variation, KIBOR variation and fuel price variation will be approved and announced by the Authority within seven days of the applicable date. SPGL may submit a request prior to the applicable date indicating the level of indexation estimated to SPGL and NTDC within 7 working days of the notification of fuel price variation.

v) Withholding Tax

Withholding tax will be treated as a normal tax and will be pass-through according to the following formula:

$$\text{Withholding Tax payable} = [15\% * (E(Ref) - E(Red))] * 7.5\%$$

Where:

$E(Ref)$ = Reference Equity US\$ 21.12 million

$E(Red)$ = Equity Redeemed

Terms and conditions of tariff:

- i. Gas usage will be considered the primary fuel.
- ii. Dispatch will be based on the variable charge applicable at the time.
- iii. Diesel oil will be used only for start-ups and other contingent requirements. Use of diesel as main fuel in the case of non-availability of gas (except in Force Majeure conditions as declared by the Authority) will not entitle SPGL to a higher than prevailing variable charge based on gas usage.

The above tariff and terms and conditions be incorporated as the specified tariff approved by the Authority pursuant to Rule 6 of the Generation Licensing Rules, in a Power Purchase Agreement between SPGL and NTDC.

Star Power Generation (Private) Limited
Reference Tariff Schedule

LHV-HHV Factor 1.107553

Year	Variable Charge (PKR/kWh)			Capacity Charge (PKR/kW/Month)								Capacity	Total
	Fuel	Variable	Total	Escalable	Insurance	Return on	Equity	Allowance for	Loan	Interest	Total	PKR per	PKR per
		O&M		(Fixed O&M)		Equity	Redemption	return on pre-operating equity		Charges			
1	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	209.22	214.43	710.11	1.62	3.09
2	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	225.14	198.52	710.11	1.62	3.09
3	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	242.27	181.39	710.11	1.62	3.09
4	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	260.70	162.96	710.11	1.62	3.09
5	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	280.53	143.12	710.11	1.62	3.09
6	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	301.87	121.78	710.11	1.62	3.09
7	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	324.84	98.82	710.11	1.62	3.09
8	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	349.55	74.10	710.11	1.62	3.09
9	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	376.15	47.51	710.11	1.62	3.09
10	1.3446	0.1224	1.4669	120.00	32.53	125.87	-	8.06	404.76	18.89	710.11	1.62	3.09
11	1.3446	0.1224	1.4669	120.00	32.53	125.87	17.64	6.72	-	-	302.76	0.69	2.16
12	1.3446	0.1224	1.4669	120.00	32.53	123.22	20.28	6.72	-	-	302.76	0.69	2.16
13	1.3446	0.1224	1.4669	120.00	32.53	120.18	23.32	6.72	-	-	302.76	0.69	2.16
14	1.3446	0.1224	1.4669	120.00	32.53	116.68	26.82	6.72	-	-	302.76	0.69	2.16
15	1.3446	0.1224	1.4669	120.00	32.53	112.66	30.84	6.72	-	-	302.76	0.69	2.16
16	1.3446	0.1224	1.4669	120.00	32.53	108.03	35.47	6.72	-	-	302.76	0.69	2.16
17	1.3446	0.1224	1.4669	120.00	32.53	102.71	40.79	6.72	-	-	302.76	0.69	2.16
18	1.3446	0.1224	1.4669	120.00	32.53	96.59	46.91	6.72	-	-	302.76	0.69	2.16
19	1.3446	0.1224	1.4669	120.00	32.53	89.55	53.95	6.72	-	-	302.76	0.69	2.16
20	1.3446	0.1224	1.4669	120.00	32.53	81.46	62.04	6.72	-	-	302.76	0.69	2.16
21	1.3446	0.1224	1.4669	120.00	32.53	72.16	71.35	6.72	-	-	302.76	0.69	2.16
22	1.3446	0.1224	1.4669	120.00	32.53	61.45	82.05	6.72	-	-	302.76	0.69	2.16
23	1.3446	0.1224	1.4669	120.00	32.53	49.15	94.36	6.72	-	-	302.76	0.69	2.16
24	1.3446	0.1224	1.4669	120.00	32.53	34.99	108.51	6.72	-	-	302.76	0.69	2.16
25	1.3446	0.1224	1.4669	120.00	32.53	18.72	124.78	6.72	-	-	302.76	0.69	2.16
Levelized Tariff (1-25 Years)			1.4669								578.51	1.3208	2.7877

Star Power Generation (Private) Limited
Debt Servicing Schedule

KIBOR 4.40%
Premium 3.00%

Period	Principle Million \$	Repayment Million \$	Mark-Up Million \$	Balance Million \$	Debt Service Millin \$	Outstanding Principle Million Rs.	Mark-Up Million Rs.	Annual Principle Repayment Rs. Million	Annual Interest Rs. Million	Annual Principle Repayment Rs./kW/ Month	Annual Interest Rs./kW/ Month
1	74.88	1.28	1.39	73.60	2.67	4,492.53	83.11				
2	73.60	1.30	1.36	72.29	2.67	4,415.70	81.69				
3	72.29	1.33	1.34	70.96	2.67	4,337.46	80.24				
4	70.96	1.35	1.31	69.61	2.67	4,257.76	78.77	315.94	323.81	209.22	214.43
5	69.61	1.38	1.29	68.23	2.67	4,176.59	77.27				
6	68.23	1.40	1.26	66.83	2.67	4,093.92	75.74				
7	66.83	1.43	1.24	65.40	2.67	4,009.72	74.18				
8	65.40	1.46	1.21	63.94	2.67	3,923.96	72.59	339.98	299.78	225.14	198.52
9	63.94	1.48	1.18	62.46	2.67	3,836.61	70.98				
10	62.46	1.51	1.16	60.95	2.67	3,747.65	69.33				
11	60.95	1.54	1.13	59.41	2.67	3,657.05	67.66				
12	59.41	1.57	1.10	57.85	2.67	3,564.76	65.95	365.84	273.91	242.27	181.39
13	57.85	1.60	1.07	56.25	2.67	3,470.77	64.21				
14	56.25	1.63	1.04	54.63	2.67	3,375.04	62.44				
15	54.63	1.66	1.01	52.97	2.67	3,277.54	60.63				
16	52.97	1.69	0.98	51.29	2.67	3,178.24	58.80	393.67	246.08	260.70	162.96
17	51.29	1.72	0.95	49.57	2.67	3,077.10	56.93				
18	49.57	1.75	0.92	47.82	2.67	2,974.09	55.02				
19	47.82	1.78	0.88	46.04	2.67	2,869.17	53.08				
20	46.04	1.81	0.85	44.22	2.67	2,762.31	51.10	423.62	216.13	280.53	143.12
21	44.22	1.85	0.82	42.38	2.67	2,653.48	49.09				
22	42.38	1.88	0.78	40.50	2.67	2,542.63	47.04				
23	40.50	1.92	0.75	38.58	2.67	2,429.73	44.95				
24	38.58	1.95	0.71	36.63	2.67	2,314.74	42.82	455.85	183.90	301.87	121.78
25	36.63	1.99	0.68	34.64	2.67	2,197.62	40.66				
26	34.64	2.02	0.64	32.61	2.67	2,078.34	38.45				
27	32.61	2.06	0.60	30.55	2.67	1,956.85	36.20				
28	30.55	2.10	0.57	28.45	2.67	1,833.12	33.91	490.53	149.22	324.84	98.82
29	28.45	2.14	0.53	26.31	2.67	1,707.09	31.58				
30	26.31	2.18	0.49	24.13	2.67	1,578.73	29.21				
31	24.13	2.22	0.45	21.91	2.67	1,448.00	26.79				
32	21.91	2.26	0.41	19.65	2.67	1,314.85	24.32	527.85	111.90	349.55	74.10
33	19.65	2.30	0.36	17.35	2.67	1,179.24	21.82				
34	17.35	2.34	0.32	15.01	2.67	1,041.11	19.26				
35	15.01	2.39	0.28	12.62	2.67	900.44	16.66				
36	12.62	2.43	0.23	10.19	2.67	757.16	14.01	568.01	71.74	376.15	47.51
37	10.19	2.48	0.19	7.71	2.67	611.23	11.31				
38	7.71	2.52	0.14	5.19	2.67	462.59	8.56				
39	5.19	2.57	0.10	2.62	2.67	311.21	5.76				
40	2.62	2.62	0.05	0.00	2.67	157.03	2.91	611.23	28.53	404.76	18.89