Delhi Electricity Regulatory Commission

Viniyamak Bhawan, 'C' Block, Shivalik, Malviya Nagar, New Delhi –110 017

No. F.11 (811)/DERC/2012-13/

Petition No. 22/2012

In Re: Adoption of generic tariff for generation of electricity from tail end grid 50 kWp Solar Photo Voltaic Project at TPDDL RG-22 Grid, Rohini in Delhi.

Tata Power Distribution Company Ltd.
Formerly known as NDPL
Through its: Sr. General Manager
33kV Sub Station Building
Hudson lane
Delhi 110 009

Coram:
Sh. P.D. Sudhakar, Chairman, &
Sh. J.P. Singh, Member

ORDER
(Date of Order: 25.11.2014)

1. The Petitioner, Tata Power Delhi Distribution Ltd. (TPDDL) has filed a petition before the Commission for adoption of generic tariff for generation of electricity from tail end grid interactive for 50 kWP Solar Photo Voltaic Project at TPDDL RG-22 Grid, Rohini in Delhi.

2. As information about the actual capital cost and actual subsidy received was not furnished by the Petitioner, the Commission vide its order dated 14.11.2013, determined the provisional levelised tariff for the project at Rs. 3.74 per unit for 25 years from the date of commissioning, by allowing the capital cost of Rs. 55 lakh for the project (on the basis of normative capital cost of Rs. 11 crore per MW)and subsidy of Rs. 33.90 lakh.

3. In order to finalise the tariff, the Petitioner was directed to furnish the requisite information along with the audited accounts of the company indicating Solar Capital assets separately from distribution capital assets and breakup of capital assets deployed in the different business divisions of the company.

4. The Petitioner has since submitted the audited financial statement as on 31st March, 2012, for total capital assets of TPDDL indicating solar capital assets separately and has also furnished utilization certificate by the auditor, Project Completion Report, Consolidated Statement of Expenditure, Audited Financial Statement and a letter dated 24.03.2014 of the Ministry of New and Renewable Energy (MNRE) regarding final disbursement of subsidy, which contains information about the actual subsidy received,.

5. The Commission considered the explanation given by the petitioner for negative balance in the Head Office account that it was due to the fact that payment to vendors were not made as on 31.03.2012 because it had not become due for payment as per the terms and conditions of the purchase order and the fact that subsequently the petitioner discharged its liability and made payments to the vendors as per the terms and conditions of the Purchase Order as reflected in the audited balance sheet as on 30.09.2012,. Keeping in view the aforesaid, the Commission has decided to consider this project as 100% debt funded project for the period from the date of commissioning i.e. 31.03.2012 till 30.09.2012 and accordingly has finalized a tariff at Rs. 5.50 per unit for the aforesaid period.

6. Whereas for the period beyond 30.09.2012, in light of the submission of Auditor's Statement of Account certifying that the equity infused in the project by TPDDL had become more than 30% as on 30.09.2012, the Commission restricted equity to 30% for determination of levelised tariff. After taking into consideration the actual capital cost of Rs. 67.80 lakh and actual subsidy of Rs. 34.23 lakh (including administrative charge) for the project, as per the letter of the Ministry of New and Renewable Energy and on the basis of other assumptions and norms as considered in order dated 14.11.2013, the Commission has finalized the levelized tariff for 50 kWP Solar Photo Voltaic Project at TPDDL RG-22 Grid, Rohini at Rs 7.13/- per unit from 01.10.2012 till the completion of 25th year from the date of

commissioning. The detailed calculation sheets are attached as Annexure –I and Annexure –II.

7. The Capacity Utilization Factor (CUF) shall be reviewed only once after 5 years based on the performance vis-à-vis the guaranteed output along with contractual remedies enforced by the Petitioner.

8. Ordered accordingly and the petition stands disposed of.

Sd/-	*Sd/-*
(J. P. Singh) **MEMBER**	**(P. D. Sudhakar)** **CHAIRMAN**

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25 Year Levelized Tariff
50 KW- Grid Interactive Solar Photovoltaic Plant-RG 22

Assumptions		
Rating of the Plant	0.0500	MW
Project Cost	0.3357	Rs. Crores
Debt	1.00	0.34
Equity	0.00	0.00
Rate of Interest on loan	10.17%	Actual rate of Interest of TPDDL
Return on Equity	19.00%	24.00%
Tax Rate		
Loan Repayment Period	10.00	Years
Depreciation	9.00%	0.00%
O&M Cost	0.10	INR Crores/MW
Interest on Working Capital	11.43%	Actual rate of Interest of TPDDL
Rate of Return considered for Levelised Tariff	10.17%	WACC
Escalation (O& M)	0.0572	1.06
PLF	19.00%	

INR Crores
INR Crores

	Cost	Subsidy
	0.6780	0.3423

S No.	Years		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	Interest on Loan Capital		0.0326	0.0295	0.0265	0.0234	0.0203	0.0172	0.0142	0.0111	0.0080	0.0050	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034	0.0034
2	Depreciation		0.0302	0.0302	0.0302	0.0302	0.0302	0.0302	0.0302	0.0302	0.0302	0.0302	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	Cumulative Depreciation		0.0302	0.0604	0.0906	0.1209	0.1511	0.1813	0.2115	0.2417	0.2719	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021
4	Cumulative Repayment		0.0302	0.0604	0.0906	0.1209	0.1511	0.1613	0.2115	0.2417	0.2719	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021	0.3021
5	Loan o/s at the end		0.3055	0.2753	0.2451	0.2148	0.1846	0.1544	0.1242	0.0940	0.0638	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336	0.0336
6	Return on Equity		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
7	O&M Expenses		0.0053	0.0056	0.0059	0.0063	0.0066	0.0070	0.0074	0.0078	0.0083	0.0088	0.0093	0.0098	0.0104	0.0110	0.0116	0.0122	0.0129	0.0137	0.0145	0.0153	0.0162	0.0171	0.0181	0.0191	0.0202
8	Interest on Working Capital		0.0015	0.0014	0.0014	0.0013	0.0013	0.0012	0.0012	0.0012	0.0011	0.0011	0.0005	0.0005	0.0005	0.0006	0.0006	0.0006	0.0007	0.0007	0.0007	0.0008	0.0008	0.0009	0.0009	0.0010	0.0010
9	**Annual Fixed Cost**		0.0696	0.0668	0.0640	0.0612	0.0585	0.0557	0.0530	0.0503	0.0477	0.0450	0.0132	0.0137	0.0143	0.0149	0.0156	0.0163	0.0170	0.0178	0.0186	0.0195	0.0204	0.0214	0.0224	0.0235	0.0246
10	Units Generated in the year (MUs)		0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832
11	**Unit Cost (Rs / Unit)**		8.3637	8.0255	7.6896	7.3559	7.0247	6.6961	6.3702	6.0472	5.7273	5.4108	1.5845	1.6512	1.7216	1.7963	1.8751	1.9585	2.0466	2.1397	2.2382	2.3423	2.4524	2.5687	2.6917	2.8218	2.9593
12	Discounting Factor		1.0000	0.9077	0.8239	0.7478	0.6788	0.6161	0.5593	0.5076	0.4608	0.4182	0.3796	0.3446	0.3128	0.2839	0.2577	0.2339	0.2123	0.1927	0.1749	0.1588	0.1441	0.1308	0.1187	0.1078	0.0978
13	Discounted Tariff		8.3637	7.2847	6.3354	5.5011	4.7684	4.1258	3.5627	3.0698	2.6390	2.2630	0.6015	0.5690	0.5385	0.5100	0.4832	0.4581	0.4345	0.4124	0.3915	0.3719	0.3534	0.3360	0.3196	0.3041	0.2895
14	**Levelized Tariff/Unit**	5.50																									

25 Year Levelized Tariff
50 KW- Grid Interactive Solar Photovoltaic Plant-RG 22

Cost	Subsidy
0.6780	0.3423

Assumptions		
Rating of the Plant	0.0500	MW
Project Cost	0.3357	Rs. Crores
Debt	0.70	0.23
Equity	0.30	0.10
Rate of Interest on loan	10.17%	Actual rate of interest of TPDDL
Return on Equity	19.00%	24.00%
Tax Rate		
Loan Repayment Period	10.00	Years
Depreciation	7.00%	1.33%
O&M Cost	0.0951	INR Crores/MW
Interest on Working Capital	11.43%	Actual rate of Interest of TPDDL
Rate of Return considered for Levelised Tariff	13.72%	WACC
Escalation (O& M)	0.0572	1.06
PLF	19.00%	

INR Crores
INR Crores

S No.	Years		1	2	3	4	5	6	7	8	9	10	11	12	13
1	Interest on Loan Capital		0.0227	0.0203	0.0179	0.0155	0.0131	0.0108	0.0084	0.0060	0.0036	0.0012	0.0000	0.0000	0.0000
2	Depreciation		0.0235	0.0235	0.0235	0.0235	0.0235	0.0235	0.0235	0.0235	0.0235	0.0235	0.0045	0.0045	0.0045
3	Cumulative Depreciation		0.0235	0.0470	0.0705	0.0940	0.1175	0.1410	0.1645	0.1880	0.2115	0.2350	0.2395	0.2439	0.2484
4	Cumulative Repayment		0.0235	0.0470	0.0705	0.0940	0.1175	0.1410	0.1645	0.1880	0.2115	0.2350	0.2350	0.2350	0.2350
5	Loan o/s at the end		0.2115	0.1880	0.1645	0.1410	0.1175	0.0940	0.0705	0.0470	0.0235	0.0000	0.0000	0.0000	0.0000
6	Return on Equity		0.0191	0.0191	0.0191	0.0191	0.0191	0.0191	0.0191	0.0191	0.0191	0.0191	0.0242	0.0242	0.0242
7	O&M Expenses		0.0053	0.0056	0.0059	0.0063	0.0066	0.0070	0.0074	0.0078	0.0083	0.0088	0.0093	0.0098	0.0104
8	Interest on Working Capital		0.0015	0.0015	0.0015	0.0014	0.0014	0.0014	0.0013	0.0013	0.0013	0.0013	0.0010	0.0010	0.0010
9	**Annual Fixed Cost**		0.0722	0.0701	0.0680	0.0659	0.0638	0.0618	0.0598	0.0578	0.0558	0.0539	0.0389	0.0395	0.0401
10	Units Generated in the year (MUs)		0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832
11	**Unit Cost (Rs / Unit)**		8.6725	8.4180	8.1657	7.9157	7.6681	7.4231	7.1809	6.9416	6.7053	6.4722	4.6755	4.7422	4.8127
12	Discounting Factor		1.0000	0.8794	0.7733	0.6800	0.5980	0.5258	0.4624	0.4066	0.3575	0.3144	0.2765	0.2431	0.2138
13	Discounted Tariff		8.6725	7.4025	6.3143	5.3826	4.5852	3.9032	3.3203	2.8224	2.3975	2.0350	1.2927	1.1530	1.0289
14	**Levelized Tariff/Unit**	7.13													

S No.	Years	14	15	16	17	18	19	20	21	22	23	24	25
1	Interest on Loan Capital	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2	Depreciation	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045	0.0045
3	Cumulative Depreciation	0.2529	0.2574	0.2619	0.2663	0.2708	0.2753	0.2798	0.2842	0.2887	0.2932	0.2977	0.3021
4	Cumulative Repayment	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350	0.2350
5	Loan o/s at the end	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6	Return on Equity	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242	0.0242
7	O&M Expenses	0.0110	0.0116	0.0122	0.0129	0.0137	0.0145	0.0153	0.0162	0.0171	0.0181	0.0191	0.0202
8	Interest on Working Capital	0.0011	0.0011	0.0011	0.0012	0.0012	0.0012	0.0013	0.0013	0.0014	0.0014	0.0014	0.0015
9	**Annual Fixed Cost**	0.0407	0.0413	0.0420	0.0428	0.0435	0.0443	0.0452	0.0461	0.0471	0.0481	0.0492	0.0503
10	Units Generated in the year (MUs)	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832	0.0832
11	**Unit Cost (Rs / Unit)**	4.8873	4.9661	5.0494	5.1375	5.2307	5.3292	5.4333	5.5433	5.6597	5.7827	5.9127	6.0502
12	Discounting Factor	0.1880	0.1653	0.1454	0.1278	0.1124	0.0989	0.0869	0.0764	0.0672	0.0591	0.0520	0.0457
13	Discounted Tariff	0.9188	0.8210	0.7341	0.6568	0.5880	0.5268	0.4723	0.4237	0.3804	0.3418	0.3073	0.2766