

**Power Grid Corporation of India Limited
(Central Transmission Utility)**

Ref: C/CTU/E/04/LTA-REL

Date: 20-05-2019

**Determination of Stranded Capacity and Relinquishment
Charges in accordance with the directions under
petition no 92/MP/2015 vide order dated 08-03-2019**

- 1.0 In accordance with CERC's order in petition no 92/MP/2015 dated 08-03-2019, the stranded capacity and the compensation (relinquishment charges) payable by each relinquishing long term customer has been calculated as per methodology specified in the order and reproduced below in point 2 and 3.
- 2.0 The methodology for determination of stranded capacity is as under:

- (i) **Step 1 (Base case)** - An All India base case is required to be prepared based on the actual peak load for the month in which completion of all transmission lines/substations in each of the High Capacity Power Transmission Corridor or identified augmentation has been completed in the month in which commissioning of the last transmission line or substation element in the identified augmentation occurred. CTU shall identify the month as above and POSOCO shall provide the base case for this month based on peak load scenario used for TTC computation by POSOCO. Such base case file should include all the identified transmission system as above. On the base case file provided by POSOCO, CTU shall also include all generators who have either relinquished or abandoned in the concerned HCPTC corridor/augmentation. The injection of the generators who have relinquished the LTA or abandoned the project shall be considered as equal to the LTAs granted to the generators. For Long Term Customers who have relinquished after the above identified month, the base case scenario shall be considered based on actual peak load for the month in which relinquishment is effective. For load generation balance, generation from other existing generators in the same region, shall be reduced on pro-rata basis.

Consideration for the study: In the base case files provided by POSOCO, transmission elements of the concerned HCPTC have been matched with the respective LTA agreements and taken accordingly to make the base case file for the study.

- (ii) **Step 2 (Relinquished scenario)** - The generators in each of the High Capacity Power Transmission Corridor/identified augmentation of transmission systems who have relinquished/abandoned shall be removed from the above base case or their injection shall be reduced by their relinquished quantum resulting into revised power flow under relinquished

scenario. The generation from other existing generators in the same region shall be correspondingly increased.

Consideration for the study: For relinquishment of hydro generations of Sikkim, the dispatch of other hydro generations of Sikkim/Bhutan is enhanced first and balance through other generations of Eastern Region so as to make the LGB same as the base case, as transmission system of Sikkim corridor (HCPTC-III) would be fully utilized in evening peak hours / monsoon period with these hydro generations.

- (iii) **Step 3** - The transmission lines/substations covered under the system augmentation in terms of the respective BPTA/LTA agreements of generators which have relinquished the capacity or abandoned the project shall be segregated and separately listed for use in Step 4 below.

Consideration for the study: Wherever the LTAs have been granted with identified system augmentation and generation projects have sought full or part relinquishment, the stranded capacity has been determined only on the specific identified system augmentation.

- (iv) **Step 4** - Flow in Step 1 (Base case), Step 2 (Relinquished scenario) and Step 3, i.e., in the transmission lines covered under BPTA/LTA agreements of generators who have relinquished the capacity or abandoned their projects shall be captured.
- (v) **Step 5** - In case there is reduction in the flow, the difference in the transmission line flows between the Base case and the Relinquished scenario shall be treated as the stranded capacity of the line. In cases where there is increase in flow, the stranded capacity shall be considered as zero. Except for the cases where the stranded capacity is to be considered as zero, the percentage capacity of a particular line stranded is to be determined by dividing the difference obtained above by the loadability of the line as explained herewith. If the difference in two cases (Base case vis-à-vis Relinquished scenario) for individual lines is more than maximum quantum relinquished for the entire corridor/identified augmentation, the difference between the line flows shall be capped upto relinquished quantum for the corridor/ identified augmentation. The loadability of the line shall be considered as per loadability indicated by CTU on its website for ATC/TTC for the relevant period.
- (vi) **Step 6** - Steps 1 to 5 shall be repeated for all the corridors based on the date of commissioning of the last transmission line/substation in that corridor. In case the transmission system planned under a particular corridor is under execution (i.e. the corridor is yet to be commissioned),

the base case shall be prepared on the present peak load considering such elements as commissioned in the base case.

- (vii) **Step 7**-The base case should be N-1 and N-1-1 compliant as per CEA Transmission Planning Criterion, 2013. Where the base case is not compliant with CEA Transmission Planning Criterion, 2013, the generation of the generating projects who have relinquished or abandoned the project shall be reduced on pro-rata basis to make the system N-1 and N-1-1 compliant. The quantum of such reduced generation is to be recorded separately as this quantum will not attract any charges towards stranded capacity.

3.0 The methodology for calculating relinquishment charges is as under:

- (i) **Step 8** - As regards cost-plus projects, the Yearly Transmission Charge (YTC) for the identified transmission lines and substations shall be considered as per Commission's orders on determination of tariff of such lines. This would be based on quoted tariff in case of transmission system executed through Tariff Based Competitive Bidding (TBCB). The transmission charge for the substation shall be apportioned among the transmission lines on pro-rata basis emanating from that substation. The transmission charges shall be considered as on the date of the completion of all transmission lines/substations in each of the High Capacity Power Transmission Corridor i.e. the date of commissioning of the last transmission line/substation in the concerned corridor.
- (ii) **Step 9** - For relinquishment charges, 66% of NPV for the transmission charges for stranded capacity for 12 years shall be calculated. The discount rate applicable for computing the net present value shall be the discount rate to be used for bid evaluation in the Commission's Notification issued from time to time in accordance with the Guidelines for Determination of Tariff by Bidding Process for Procurement of Power by Distribution Licensees issued by the Ministry of Power in accordance with Regulation 18 (2) of the Connectivity Regulations. The relinquishment charges shall be apportioned amongst the LTA customers in the ratio of relinquishment sought by them after taking into account Step 7 at para 121 of this Order.

4.0 The discount rate for NPV calculation for various timeframe as per CERC directions is as under:

Sl.No.	Timeframe	Discount rate
1	Apr'13 - Mar'14	13.10%
2	Apr'14 - Mar'15	10.69%
3	Apr'15 - Mar'16	12.07%
4	Apr'16 - Mar'17	9.78%
5	Apr'17 - Sep'17	8.41%
6	Oct'17 - Mar'18	10.06%
7	Apr'18 - Mar'19	9.33%

5.0 The charges have been determined for following two components:

- (i) **Stranded Capacity Charges:** Amount equal to 66% of the estimated transmission charges (net present value) for the stranded transmission capacity for the period falling short of 12 (twelve) years of access rights
- (ii) **Notice Period Charges:** Amount equal to 66% of the estimated transmission charges (net present value) for the stranded transmission capacity for the period falling short of a notice period of one (1) year.

6.0 The study results including stranded capacity and compensation (relinquishment charges) are given in the table below:

Determination of Stranded Capacity and Relinquishment Charges in accordance with the directions under petition no 92/MP/2015 vide order dated 08-03-2019

Sl. No.	Applicant	Region	LTA Granted (MW)	LTA Relinquished (MW)	LTA effectiveness date	Relinquishment date	Stranded Capacity among identified elements (MW)	Stranded Capacity Charges (in lacs)	Notice to CTU/CERC	Charges for Notice Period (In Lacs)	Total Compensation (in lacs)
HCPTC-I											
1	Jindal India Thermal Power Ltd	ER	1044	949	27/01/16	27/01/16	94	4780	25/11/14	0	4780
2	Lanco Babandh Power Pvt Ltd	ER	800	800	27/01/16	27/01/16	93	4695	27/01/16	678	5373
3	Monnet Power Company Limited	ER	900	900	27/01/16	27/01/16	104	5292	27/01/16	765	6057
4	Navabharat Power Pvt. Ltd	ER	720	720	27/01/16	27/01/16	83	4225	26/06/13	0	4225
5	Sterlite Energy Ltd (Erstwhile Vedanta)	ER	400	400	27/01/16	23/02/16	11	1170	31/12/15	156	1325
6	GMRKamalangaEnergy Ltd (800 MW)	ER	800	153	27/01/16	24/06/16	0	0	30/09/15	0	0
7	Ind Barath Energy (Utkal) Ltd	ER	616	616	27/01/16	19/07/18	43	1679	19/07/18	249	1928
	Lanco Babandh Power Pvt Ltd - already relinquished with no liability vide CERC order in petition 118/MP/2012 dated 08.06.2013	ER	800	800							
	Sub Total		6080	5338			429	21840		1848	23689
HCPTC-II											
8	Corporate Power Ltd Ph-I	ER	480	480	22/10/16	22/10/16	133	1476	20/06/15	0	1476
9	Corporate Power Ltd Ph-II	ER	480	480	22/10/16	22/10/16	133	1476	20/06/15	0	1476
10	Adhunik Power & Natural Resources Limited	ER	450	250	22/10/16	01/01/17	6	137	23/08/16	12	149
11	Essar Power (Jharkhand) Ltd.	ER	1100	1100	22/10/16	12/04/17	421	5055	20/01/16	0	5055
	WBSEDCL	ER	1000	-							
	Sub Total		3510	2310			692	8144		12	8156
HCPTC-III											
12	PTC India Ltd (Teesta-III HEP)	ER	1200	216	23/02/19	23/02/19	108	4387	28/07/17	0	4387
13	PTC India Ltd (Teesta-III HEP)	ER		340	23/02/19	23/02/19	170	6905	31/12/18	825	7730
14	PTC India Ltd (Teesta-III HEP)	ER		383	23/02/19	23/02/19	191	7778	22/02/19	1010	8788
15	Lanco Teesta Hydro Power Limited	ER	500	500	23/02/19	23/02/19	250	10154	23/02/19	1319	11473
16	Jal Power Corporation Limited	ER	120	120	23/02/19	23/02/19	60	2437	15/12/17	0	2437
17	Madhya Bharat Power Corporation Limited	ER	96	96	23/02/19	23/02/19	48	1950	08/01/19	233	2183
18	Gati Infrastructure Bhasmey Power Pvt Ltd	ER	51	51	23/02/19	23/02/19	25	1036	22/11/18	102	1138
	DANS Energy Pvt. Ltd. (Jorethang)	ER	96	-							
	Gati Infrastructure Ltd (Chuzachen)	ER	99	-							
	Sub Total		2162	1706			852	34646		3489	38135
HCPTC-IV											
19	Aryan MP Power Generation Pvt. Ltd.	WR	1122	1122	24/08/15	24/08/15	82	2458	08/07/14	0	2458
20	Dheeru Power Gen	WR	450	450	24/08/15	24/08/15	33	986	24/08/15	142	1128
21	Jaiprakash Power Ventures Ltd (Bina Power)	WR	265.35	265.35	24/08/15	03/09/15	26	758	03/09/15	110	868
22	Jaiprakash Power Ventures Ltd.	WR	1240.8	775.5	24/08/15	28/01/16	59	1720	28/01/16	253	1973
23	CSPTTrCL_HCPTC-IV	WR	432	418	01/10/17	01/10/17	17	655	05/07/16	0	655
	Maruti Clean Coal	WR	250	-							
	Sub Total		3760.15	3030.85			217	6578		505	7083

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HCPTC-V											
24	GMR Chhattisgarh Energy Ltd.	WR	816	386	01/10/17	01/10/17	101	6866	07/12/16	238	7104
25	GMR Chhattisgarh Energy Ltd.	WR		430	01/10/17	01/10/17	112	7648	17/05/17	697	8345
26	Visa Power	WR	678	678	01/10/17	01/10/17	177	12065	01/10/17	1614	13678
27	SKS Power Generation (Chhattisgarh) Limited	WR	683	513	01/10/17	01/10/17	134	9129	25/10/17	1221	10350
28	SKS Power Generation (Chhattisgarh) Limited	WR		170	01/10/17	01/10/17	44	3025	31/05/17	276	3301
29	KSK Mahanadi Power Co. Ltd	WR	2340	440	01/10/17	01/12/17	0	0	08/11/17	0	0
30	Athena Chhattisgarh Power Ltd	WR	683	683	01/10/17	01/10/17	178	12154	01/10/17	1626	13780
31	Lanco Amarkantak Power Ltd	WR	858	858	01/10/17	01/10/17	224	15260	01/10/17	2041	17301
32	Vandana Vidyut Ltd	WR	265	265	01/10/17	01/10/17	69	4718	01/10/17	631	5349
33	CSPTTrCL_HCPTC-V	WR	4871	4281	01/10/17	01/10/17	888	60444	05/07/16	0	60444
34	RKM Powergen Pvt td	WR	819	269	01/10/17	01/11/17	35	2355	03/10/17	316	2671
35	RKM Powergen Pvt td	WR		200	01/10/17	01/01/18	20	1762	20/12/17	238	2000
36	Jindal Power Ltd	WR	1400	300	01/10/17	01/02/18	0	0	22/01/18	0	0
	Korba West Power Co. Ltd.	WR	240	-							
	DB Power Ltd.	WR	705	-							
	Jindal Power Ltd.	WR	400	-							
	TRN Energy Pvt. Ltd	WR	393	-							
	BALCO	WR	200	-							
	Sub Total		15351	9473			1983	135426		8897	144323
HCPTC-VI											
37	Meenakshi Energy Power Ltd	SR	910	727	11/12/15	20/07/17	484	12699	20/07/17	1732	14431
38	Meenakshi Energy Power Ltd	SR		183	02/05/18	20/07/17	122	3404	20/07/17	110	3514
39	Simhapuri Energy Private Ltd.	SR	546	146	11/12/15	01/06/18	97	2268	28/04/17	0	2268
40	Simhapuri Energy Private Ltd.	SR		400	11/12/15	09/08/18	266	6151	09/08/18	924	7074
	Thermal Powertech Corporation India Limited	SR	1240	-							
	NCC Power Projects Limited	SR	740	-							
	Sub Total		3436	1456			969	24522		2765	27287
HCPTC-VII											
41	Coastal Energen Pvt Ltd	SR	1100	542	01/12/16	01/03/18	266	4412	29/11/16	0	4412
42	Ind Barath Power (madras) Ltd	SR	900	495	01/12/16	01/12/16	243	4336	17/07/17	577	4913
43	Ind Barath Power (madras) Ltd	SR	0	405	02/05/18	02/05/18	199	3620	17/07/17	122	3742
	Sub Total		2000	1442			709	12368		699	13067
HCPTC-VIII											
44	East Coast Energy Pvt Ltd	SR	1240.8	1240.8	01/12/18	01/12/18	0	0	20/09/17	0	0
	Sub Total		1240.8	1240.8			0	0		0	0

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HCPTC-XI											
45	PEL Power Ltd	SR	987	987	26/01/19	26/07/13	984	9014	26/07/13	0	9014
46	IL & FS Tamil Nadu Power Company Limited	SR	1150	540	01/12/16	03/05/17	539	5929	30/12/16	509	6438
	Sub Total		2137	1527			1523	14943		509	15452
LTA with system augmentation											
47	Sterlite Energy Ltd (Erstwhile Vedanta)	ER	1000	1000	0	31/03/19	133	1388	09/09/13	0	1388
48	GMRKamalangaEnergy Ltd (Ph-II) (220 MW)	ER	220	220	0	31/03/19	29	305	19/10/15	0	305
49	OPGC	ER	600	600	0	31/03/19	600	10276	13/12/18	1012	11288
50	MPPMCL (DVC Durgapur)	ER	94	94	01/12/14	01/12/17	7	105	25/11/17	17	122
51	Telangana State Southern Power Distribution Company Ltd	SR	2000	1000	01/11/18	01/11/18	376	25017	19/02/18	1114	26131
52	PTC India Ltd (Budhil)	NR	61.6	61.6	0	19/06/18	62	16	18/06/18	19	34
53	Essar Power Gujarat Ltd.	WR	250	250	0	09/06/16	251	49007	09/06/16	6481	55488
54	Essar Power MP Ltd	WR	1200	750	0	12/04/17	441	168678	22/12/16	15891	184570
55	Essar Power MP Ltd	WR		450	01/10/17	04/05/18	265	96988	30/04/18	12595	109583
56	Spectrum Coal & Power Ltd	WR	60	30	12/09/12	01/04/17	8	33	23/03/17	6	39
57	Jhabua Power Ltd	WR	109.25	5.75	22/12/16	13/01/16	0	0	29/12/15	0	0
58	Torrent (Sugen Power Limited)	WR	300	25	01/03/09	01/02/18	8	31	17/01/18	11	43
59	Adani Power Ltd	WR	342	342	0	01/04/18	0	0	20/03/18	0	0
60	Adani Power Ltd	WR	200	200	05/07/09	01/04/18	125	1010	20/03/18	334	1343
61	MB Power (MP) Limited	WR	392	200	26/08/15	05/05/18	11	5265	23/04/18	795	6060
62	Jindal Power Ltd.(4x250)	WR	500	500	15/06/08	01/11/17	499	668	29/09/17	251	919
63	Maruti Clean Coal and Power Limited	WR	205	55	01/04/17	09/05/18	17	612	03/05/18	84	696
64	Sarda Energy & Minerals Ltd.	WR	156	156	0	29/09/17	79	9720	06/07/15	0	9720
	Sub Total		7689.85	5939.35			2911	369118		38609	407727
LTA with existing system											
65	MPPMCL (from DVC Projects: Mejia 5&6 and Chandrapura 7&8)	ER	356	356	01/07/07	01/03/18	0	3692	27/01/18	2589	6281
66	K V K Nilachal Power Pvt Ltd	ER	560	560	0	10/12/18	0	30328	10/12/18	3939	34267
67	Himachal Sorang Power Pvt Ltd	NR	100	100	01/04/12	01/10/17	0	3705	29/09/17	736	4441
	Sub Total		1016	1016			0	37725		7263	44988
	Grand Total		48383	34479			10285	665310		64597	729907