

CENTRAL ELECTRICITY REGULATORY COMMISSION

EXPLANATORY MEMORANDUM TO THE DRAFT CENTRAL ELECTRICITY REGULATORY COMMISSION (UNSCHEDULED INTERCHANGE CHARGES AND RELATED MATTERS) (AMENDMENT) REGULATIONS, 2010

1. A draft regulation proposing amendments to the UI Regulations 2009 (Copy enclosed) was posted on the website of CERC inviting comments/suggestions of the stakeholders by 20th Feb 2010.
2. About 28 stakeholders including State Regulatory Commissions, Generators, Beneficiaries, NLDC/PGCIL, RPCs, SLDCs etc. filed their written submissions. Commission also held an open hearing on 15.3.2010 and heard the stakeholders.
3. Some of the beneficiaries namely UPPCL, HPPCL etc has suggested to incorporate the principles and methodology for arriving at values of various rates and caps in the UI framework. The Commission has decided to incorporate the principles and methodology for arriving at values of various rates and caps in the UI Regulation.
4. Since the principles and methodology is being incorporated in the regulations itself, the values of various rates and caps in the UI framework arrived at based on the methodology prescribed is also being specified as schedule to the regulation which shall be re-notified after every six month by the Commission.
5. UPPCL has also sought to impose UI cap on under drawls. NLDC has sought to put limit on UI volumes on under drawls and over-injections. Putting hard limits on volumes on under drawls or over injections may not be desirable in power deficit condition. However, Commission is of the view that a cap rate may be imposed for the under drawls by the buyer or the beneficiaries in a time block in excess of 20% of the schedule or 250 MW whichever is less and for the over injection by the seller in excess of 120% of the schedule subject to limit of ex-bus generation corresponding to 105% of the Installed Capacity of the station in a time block or 101% of the Installed Capacity over a day. This is with a view to discourage the

buyer and the beneficiaries to under draw heavily through the UI mechanism instead of opting for scheduled route through bilateral arrangements and through PXs. Similarly, the seller including captive and merchant generators should also be discouraged to avail the UI mechanism for selling power as unscheduled energy rather than selling the power as scheduled power through bilateral arrangement or through the platform of PXs. It has been observed that one station in western region is pumping power as UI for months together. Such situation is also likely to arise in new capacity addition in Private Sector where entire power of the station may not be tied up in long term and the generator may have to sell the balance power in the medium term or the short term or at PX or as UI.

Accordingly, Commission has proposed to amend the regulation 5 and regulation 7.

6. The proposed methodology for specifying Charge for Unscheduled Interchange provided is as follows:

- (a) The Charge for Unscheduled Interchange shall be zero at grid frequency of 50.2 Hz and above.
- (b) The Charge for Unscheduled Interchange in grid frequency interval of below 50.02 Hz and not below 50.0 Hz shall be based on the highest of the average energy charge of coal/lignite based generating stations except Badarpur TPS of NTPC for the six months period of Aug 2009 to January 2010 and suitably adjusted upward to decide on the UI price vector.
- (c) The Charge for Unscheduled Interchange in grid frequency interval of below 49.70 Hz and not below 49.68Hz shall be such that it provide sufficient incentive to the generating station based on coal including imported coal to support the grid after meeting fixed and energy charge.
- (d) The Charge for Unscheduled Interchange at grid frequency of below 49.5 Hz shall be initially based on the highest of the average energy charges of generating stations for the six months period of Aug 2009 to January 2010 and suitably adjusted upward to decide on the UI price vector as provided here under,

(e) Accordingly, the UI Price Vector shall be in steps for a frequency interval of 0.02 Hz.

7. Commission proposes to specify UI charges based on the average energy charges of generating station regulated by CERC on different fuels for the six month period. The Energy Charges of the generating stations regulated by CERC for the 6 months from Aug 2009 to Jan 2010 is as follows:

Sl. No.	Name of the Generating Station	Energy Charges [@] in Paise/ kWh						
		Aug.,09	Sept.,09	Oct.,09	Nov.,09	Dec.,09	Jan., 2010	Average Energy Charges
Years								
Units								
Coal Based thermal generating Stations of NTPC								
A.	<u>Pit head Generating Stations</u>							
1	Rihand STPS St-I	104	100	111	109	122	117	111
2	Rihand STPS St-II	105	105	114	113	123	120	113
3	Singrauli STPS	98	109	109	106	115	118	109
4	Vindhyachal STPS St-I	105	107	110	117		129	95
5	Vindhyachal STPS St-II	102	103	107	113	122	124	112
6	Vindhyachal STPS St-III	102	103	107	113	122	124	112
7	Korba STPS	60	67	67	66	70	82	69
8	Ramagundam STPS St-I & II	123	122	139	143	145	160	139
9	Ramagundam STPS St-III	121	125	128	136	137	147	133
10	Talcher TPS	93	99	78	77	79	92	86
11	Talcher STPS St-I	85	80	81	85	93	112	89
12	Talcher STPS St-II	85	80	81	85	93	112	89

13	Sipat STPs-II	76	83	78	84	87	95	84
	Sub-Total							102
B. <u>Non-Pit head Generating Stations</u>								
13	FGUTPP TPS St-I	154	155	151	162	175	179	163
14	FGUTPP St-II	156	156	150	161	174	176	162
15	FGUTPP St-III	155	156	150	161	175	176	162
16	NCTP Dadri	209	183	193	217	234	234	212
17	Farrakka STPS	203	175	174	190	217	231	198
18	Tanda TPS	258	170	181	193	190	241	206
19	Badarpur TPS	275	250	252	242	249	265	255
20	Kahalgaon STPS	189	149	144	177	186	182	171
21	Kahalgaon STPS-II ²	183	144	139	170	179	188	167
22	Simhadri	148	158	142	150	143	163	151
<u>Gas /Liquid Fuel Based Stations of NTPC</u>								
A.	<u>Using Natural Gas as Fuel</u>	-	-	-	-		-	
1	Dadri CCGT	123	123	123	123	123	123	123
2	Faridabad	97	97	97	97	97	97	97
3	Anta CCGT	101	101	101	165	187	186	140
4	Auraiya GPS	125	125	138	125	138	125	129
5	Gandhar GPS	122	123	122	123	126	128	124
6	Kawas GPS	109	109	109	109	109	109	109
B.	<u>Using LNG as Fuel</u>							
1	Dadri CCGT	387	399	399	399	374	374	389
2	Anta CCGT	313	322	253	258	282	273	283
3	Gandhar GPS	336	317	306	330	371	318	330
4	Auraiya GPS	365	365	365	365	365	365	365
5	Kawas GPS	333	328	317	319	379	334	335
6	Faridabad	307	307	307	307	307	307	307
C.	<u>Using Liquid Fuel (Naphtha/HSD) as Fuel</u>							
1	Dadri CCGT	720	724	723	723	716	719	721

2	Faridabad	691	704	701	722	736	770	721
3	Anta CCGT	756	761	778	793	794	794	779
4	Auraiya GPS	870	884	839	814	871	935	869
5	Kayamkulam CCGT	575	674	640	676	712	738	669

The energy charges of the lignite fired generating stations of the NLC and gas based stations of NEEPCO during 2009-10 is as follows:

Sl. No.	Name of Station	Average Energy Charge in Paise/kWh
Lignite Fired Stations of NLC		
1.	TPS-I	152
2.	TPS_II Stage-I	138
3.	TPS-II Stage-II	138
4.	TPS-I (Expansion)	130
Gas based Stations of NEEPCO		
1	Agartala GPS	180
2.	Assam GPS	211

It can be seen that the coal based station of NCTP, Dadri excluding Badarpur TPS has the highest average energy charge of 212 Paise/kWh. The highest average energy charge is 869 Paise/kWh for Auraiya GPS on liquid fuel Naptha.

The landed cost of imported coal for the kahalgaon, Farrakka and Talcher stations is in the range of Rs 6200/ton to Rs. 6800/ton having a GCV of the order of 6200 kCal/kg. The energy charge on imported coal thus works out to be of the order of Rs. 2.63 to 3.00/kWh and including fixed charges of the order of Rs. 1.00/kWh TO 1.2/kWh for a new station the total cost on imported coal shall be of the order of Rs. 4.00/kWh.

Accordingly, UI price vector has been set in the following manner:

The Charge for Unscheduled Interchange in grid frequency interval of below 50.02 Hz and not below 50.0 Hz is set at 215 Paise/kWh.

The Charge for Unscheduled Interchange in grid frequency interval of below 49.70 Hz and not below 49.68Hz is set at 415 Paise/kWh

The Charge for Unscheduled Interchange at grid frequency of below 49.5 Hz is set at 870 Paise/kWh.

8. ADDITIONAL UNSCHEDULE INTERCHANGE CHARGES

The present UI regulation in force provide for imposition of an additional UI charge at 40% of the UI charge at 49.20 Hz for over draws and under injections below 49.2 Hz. The additional UI charges were proposed to be increased to the 100% of the UI charge at 49.20 Hz for over draws and under injections below 49.2 Hz in the draft order dated 7.10.2009 due to persistent over draws by the some of the States.

It was observed that the over drawal position in respect of Northern region constituents was grim and over drawal by Uttar Pradesh (U.P) was alarming high. The other constituents of the region were also overdrawing from time to time. In its order in petition No. 105/2009 (Suo-motu) Commission have concluded that UP has overdrawn in 453 time-blocks below 49.2 Hz during the period 13th April '09 to 9th May '09.

In the southern region, TNEB had overdrawn repeatedly. In its order in petitions namely Petition No. 106/2009 (Suo-motu) and 130/2009 (Suo-motu) Commission have concluded that the Tamil Nadu (TN) has overdrawn during the period 10.04.2009 to 10.05.2009 and 25.05.2009 to 31.05.2009 respectively. In petition 106/2009, over drawal by TN was more than 50 MW during 455 time blocks. In petition 130/2009 it was stated that the TN has over drawn by more than 12% on 102 occasions in excess of schedule when the frequency was below 49.5 Hz The drawal of TN was also stated be to the extent of 1121 MW where the frequency was below 49.2 Hz. In petition No. 137/2009 (suo-motu), UP has over

drawn in 471 time-blocks at frequency below 49.2Hz during the period 11.06.2009 to 19.06.2009. Continuation of such over draws by the power utilities of many states below the mandated frequency of 49.2 Hz was responsible for the deteriorated frequency profile in June, July & August '09 as made out in the draft order. Such persistent over draws are still continuing time and again by the States. Commission therefore, has now proposed that the Additional Unscheduled Interchange Charge for over-drawal of electricity for each time-block when grid frequency is below 49.5 Hz shall be equivalent to 100% of the Unscheduled Interchange Charge of 870.0 Paise/kWh corresponding to the grid frequency of below 49.5 Hz.

It was also found that there were few instances of under injections by the generating stations below 49.2Hz. It is not expected that a generator would back down under very low frequency conditions unless there is unit tripping due to forced outages. Bringing back unit immediately after such forced outage is not always under the control of the generator. Further, grid indiscipline is more prevalent amongst the beneficiaries/buyers. Therefore, Commission proposes to retain the existing provision for the sellers. Accordingly, the Additional Unscheduled Interchange Charge for under-injection of electricity for each time-block when grid frequency is below 49.5 Hz shall be equivalent to 40% of the Unscheduled Interchange Charge of 870.0 Paise/kWh corresponding to the grid frequency of below 49.5 Hz”.

Similarly, it is proposed to retain the provision of additional UI for the generating stations using coal or lignite or gas supplied under APM as fuel. Accordingly, the Additional Unscheduled Interchange Charge for under-injection of electricity during the time-block when grid frequency is below 49.5 Hz for the generating stations using coal or lignite or gas supplied under Administered Price Mechanism (APM) as the fuel shall be equivalent to 40% of the UI Cap Rate of 415.0 Paise/kWh.

9. In view of the implementation difficulties, the Commission also proposes to do away with gaming provision in the Regulation 6 (3) and (4) and has proposed an economic disincentive for over injection by a generating stations other than the hydro generating

stations in excess of 105% of the Declared Capacity of the station in a time block or in excess of 101% of the average Declared Capacity over a day.

10. Commission has decided to circulate the draft amendments again for suggestion and comments of the stakeholders.