National Load Despatch Centre
Total Transfer Capability for July 2014

Issue Date: 23/05/2014 Issue Time: 1900 hrs Revision No. 5

Corridor	Date	Time Period (hrs)	Total Transfer Capability (TTC)	Reliability Margin	Available Transfer Capability (ATC)	Long Term Access (LTA)/ Medium Term Open Access (MTOA) #	Margin Available for Short Term Open Access (STOA)	Changes in TTC w.r.t. Last Revision	Comments
NR-WR *	1st July 2014 to 31st July 2014	00-24	2500	500	2000	297	1703		
WR-NR	1st July 2014 to 31st July 2014	00-17 23-24	4200	500	3700	3992	0		
		17-23	4200		3700		0		
NR-ER*	1st July 2014 to 31st July 2014	00-06	1000	200	800	293	507		
		06-17'			800	423	377		
		17-18'	1100		900	423	477		
		18-23			900	293	607		
		23-24	1000		800	293	507		
ER-NR$	1st July 2014 to 31st July 2014	00-17 23-24	4400	300	4100	2431	1669		
		17-23					1669		
W3-ER$	1st July 2014 to 31st July 2014	00-24	1900	300	1600	551	1049		
ER-W3	1st July 2014 to 31st July 2014	00-24	1000	300	700	874	0		
WR-SR	1st July 2014 to 31st July 2014	00-24	1000	0	1000	1000	0		
SR-WR *	1st July 2014 to 31st July 2014	00-24	1000	0	1000	0	1000		
ER-SR	1st July 2014 to 7th July 2014	00-06 18-24	2650	0	2650	1923	727		Refer to explanatory notes regarding the change in TTC representation given in the last page.
		06-18'				1968	682		
	8th July 2014 to 9th July 2014	00-06 18-24	2650	0	2650	2366	284		
		06-18'				2411	239		
	10th July 2014 to 31st July 2014	00-06 18-24	2650	0	2650	1923	727		
		06-18'				1968	682		
SR-ER*	1st July 2014 to 7th July 2014	00-24	1200	0	1200	148	1052		
	8th July 2014 to 9th July 2014					197	1003		
	10th July 2014 to 31st July 2014					148	1052		
ER-NER	1st July 2014 to 31st July 2014	00-06 18-24	520	50	470	205	265		
		06-18'	520		470	210	260		
NER-ER	1st July 2014 to 31st July 2014	00-17 23-24	450	100	350	0	350		
		17-23	550		450		450		

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S1-S2	1st July 2014 to 5th July 2014	00-24	2710	290	2420	2420	0		Refer to explanatory notes regarding the change in TTC representation given in the last page.
	6th July 2014 to 7th July 2014	00-24	2710		2420	2210	210		
	8th July 2014 to 9th July 2014	00-24	2710		2420	2445	0		
	10th July 2014 to 15th July 2014	00-24	2710		2420	2210	210		
	16th July 2014 to 31st July 2014	00-24	2400		2110	2100	10		
Import of Punjab	1st July 2014 to 31st July 2014	00-24	5700	300	5400	3790	1610		
Import TTC for DD & DNH	1st July 2014 to 31st July 2014	00-24	980	0	980	LTA and MTOA as per ex-pp schedule			
W3 zone Injection	1st July 2014 to 31st July 2014	00-17 23-24	9000	200	8800	7050	1750		
		17-23	9500		9300		2250		

* Fifty Percent (50 %) Counter flow benefit on account of LTA/MTOA transactions in the reverse direction would be considered for advanced transactions (Bilateral & First Come First Serve).

1) ER-SR TTC declared at Talcher Interconnector and Gazuwaka HVDC B/B seam
2) S1 comprises of AP and Karnataka: S2 comprises of Tamil Nadu, Kerala and Pondicherry
3) W3 comprises of the following regional entities :
a) Chattisgarh Sell transaction, b) Jindal Power Limited (JPL) Stage-I & Stage-II, c) Jindal Steel and Power Limited (JSPL), d) ACBL, e) LANCO Amarkantak
f) BALCO, g) Sterlite (#1,3,4), h) NSPCL, i) Korba, j) Sipat, k) KSK Mahanadi, L)DB Power, m) KWPCL, n)Vandana Vidyut

The figure is based on LTA/MTOA approved by CTU and Allocation figures as per RPCs RTA/REA. In actual Operation, due to Units being on Maintenance/ Fuel shortage/New units being commissionned the LTA/MTOA utilized would vary. RLDC/NLDC would factor this situation on day-ahead basis.
In the eventuality that net schedules exceed ATC, real time curtailments might be effected by RLDCs/NLDC.

$ As per Simulations, predominant direction of flow is on West to North Corridor. Hence, in case injection point is in Western Region (W1,W2,W3), STOA/PX transactions from West to North on West-East-North corridor shall not be allowed as such transaction increases congestion in the West to North Corridor.

Limiting Constraints

Corridor	Constraint
NR-WR	(n-1) contingency of 400kV Zerda-Bhinmal and (n-1) contingency of 220kV Badod-Modak.
WR-NR	High loading of 765 kV Agra-Gwalior (1250 MW SPS setting on each circuit of 765 kV Gwalior-Agra) and high loop flows on 400kV Kankroli-Zerda and 400kV Bhinmal-Zerda.
NR-ER	(n-1) contingency of 400 kV Allahabad-Pusauli
ER-NR	(n-1) contingency of one circuit of 400kV Farakka –Malda S/C
W3-ER	(n-1) contingency of 400kV Sterilte-Rourkela S/C
ER-W3	(n-1) contingency of 400kV Raigarh-Jharsuguda-Rourkela
WR-SR & ER-SR	1. Commissioning of 765kV Raichur-Sholapur S/C
	2. Based on the operational experience after the synchronization of SR grid with NEW grid and due to inadvertent variation of 765kV Raichur-Sholapur line flow, observation of Low Frequency Oscillations(LFO).
	3. ER-SR TTC has been declared assuming more than 1100 MW generation at Talcher Stage-2. In case Talcher Stage-2 generation goes below 1100 MW, then the ER-SR TTC would be revised downward as constraints within ER would emerge.
SR-WR	Bhadrawati HVDC B/B link capacity
SR-ER	(n-1) and (n-1-1) contingencies of 400kV Talcher-Rourkela D/C
ER-NER	(n-1) contingency of one circuit of 400 kV Balipara – Bongaigaon D/C
NER-ER	(n-1) contingency of 400/220 kV, 2x315 MVA ICTs at Misa
S1-S2	(n-1) contingency of 400 kV Kolar-Hosur D/C line, 400kV Hosur-Salem D/C
Import of Punjab	(n-1) contingency of ICT at Dhuri and (n-1) contingnecy of 220kV Moga(PG)-Moga(PSTCL)
W3 zone Injection	(n-1-1) contingency of 400 kV Raipur-Bhadrawati D/C section

*Primary constraints

Simultaneous Import Capability

Corridor	Date	Time Period (hrs)	Total Transfer Capability (TTC)	Reliability Margin	Available Transfer Capability (ATC)	Long Term Access (LTA)/ Medium Term Open Access (MTOA)	Margin Available for Short Term Open Access (STOA)	Changes in TTC w.r.t. Last Revision	Comments
ER									
NR	1st July 2014 to 31st July 2014	00-17 23-24	8600	800	7800	6423	1377		
		17-23	8600		7800		1377		
NER	1st July 2014 to 31st July 2014	00-06 18-24	520	50	470	205	265		
		06-18'	520		470	210	260		
WR									
SR	1st July 2014 to 7th July 2014	00-06 18-24	3650	0	3650	2923	727		Refer to explanatory notes regarding the change in TTC representation given in the last page.
		06-18'				2968	682		
	8th July 2014 to 9th July 2014	00-06 18-24	3650	0	3650	3366	284		
		06-18'				3411	239		
	10th July 2014 to 31st July 2014	00-06 18-24	3650	0	3650	2923	727		
		06-18'				2968	682		

Simultaneous Export Capability

Corridor	Date	Time Period (hrs)	Total Transfer Capability (TTC)	Reliability Margin	Available Transfer Capability (ATC)	Long Term Access (LTA)/ Medium Term Open Access (MTOA)	Margin Available for Short Term Open Access (STOA)	Changes in TTC w.r.t. Last Revision	Comments
NR*	1st July 2014 to 31st July 2014	00-06	3500	700	2800	590	2210		
		06-17'	3500		2800	720	2080		
		17-18	3600		2900	720	2180		
		18-23	3600		2900	590	2310		
		23-24	3500		2800	590	2210		
NER	1st July 2014 to 31st July 2014	00-17 23-24	450	100	350	0	350		
		17-23	550		450		450		
WR									
SR*	1st July 2014 to 7th July 2014	00-24	2200	0	2200	148	2052		
	8th July 2014 to 9th July 2014					197	2003		
	10th July 2014 to 31st July 2014					148	2052		

* Fifty Percent (50 %) Counter flow benefit on account of LTA/MTOA transactions in the reverse direction would be considered for advanced transactions (Bilateral & First Come First Serve).

Limiting Constraints

NR	**Import**	(n-1) contingency of one circuit of 400kV Farakka –Malda D/C High loading of 765 kV Agra-Gwalior (1250 MW SPS setting on each circuit of 765 kV Gwalior-Agra) and high loop flows on 400kV Kankroli-Zerda and 400kV Bhinmal-Zerda.
	Export	(n-1) contingency of 400kV Zerda-Bhinmal and (n-1) contingency of 220kV Badod-Modak. (n-1) contingency of 400 kV Allahabad-Pusauli
NER	**Import**	(n-1) contingency of one circuit of 400 kV Balipara – Bongaigaon D/C
	Export	(n-1) contingency of 400/220 kV, 2x315 MVA ICTs at Misa
SR	**Import**	1. Commissioning of 765kV Raichur-Sholapur S/C
		2. Based on the operational experience after the synchronization of SR grid with NEW grid and due to inadvertent variation of 765kV Raichur-Sholapur line flow, observation of Low Frequency Oscillations(LFO).
		3. ER-SR TTC has been declared assuming more than 1100 MW generation at Talcher Stage-2. In case Talcher Stage-2 generation goes below 1100 MW, then the ER-SR TTC would be revised downward as constraints within ER would emerge.
	Export	(n-1) and (n-1-1) contingencies of 400kV Talcher-Rourkela D/C

*Primary constraints

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Revision No	Date of Revision	Period of Revision	Reason for Revision	Corridor Affected
1	04-04-2014	Whole Month	Margin revised due to grant of 69 MW LTA to Jindal Power Limited Tamnar	W3/ ER-SR
2	11-04-2014	Whole Month	Margin revised due to addition of 139 MW LTA to TANGEDCO	ER-SR
			Margin Revised due to correction in LTA Figure and addition of 208 MW LTA to TANGEDCO	S1-S2
3	30-04-2014	Whole Month	Re-Routing of transactions on West-East-North Corridor discontinued on account of Inter-Regional Loop flows leading to physical congestion on WR-NR.	W3-ER
			Margin revised due to commissioning of Sasan Unit-4	WR-NR
4	01-05-2014	Whole Month	Margin revised due to incorporation of existing Power Allocation.	
			Margin revised due to incorporation of existing Solar Power Allocation to SR, ER, NER constituents between 6 hrs -18 hrs in LTA figures and allocation data avialable on RPCs RTA/REA.	NR-ER/ ER-NER
			Margin revised due to incorporation of existing LTA/MTOA allocation avialable in RPCs RTA/REA and Re-routing of existing MTOA granted by CTU.	W3-ER
			Margin revised due to incorporation of existing LTA/MTOA allocation avialable in RPCs RTA/REA.	ER-W3
			Margin revised due to incorporation of existing Solar Power Allocation to Karnataka between 6 hrs-18 hrs in LTA figures.	ER-SR
			Margin revised due to Allocation of 150 MW to TANGEDCO.	S1-S2
			Margin revised due to incorporation of existing LTA/MTOA allocation avialable in RPCs RTA/REA and existing MTOA granted by CTU.	W3 Zone Injection
			Revised due to augmentation/ modifications in Punjab control area network.	Import of Punjab
5	19-05-2014	Whole Month	Refer to explanatory notes regarding the change in TTC representation given in the last page.	ER-SR/ S1-S2

ASSUMPTIONS IN BASECASE

Month : July '14

S.No.	Name of State/Area	Load		Generation	
		Peak Load (MW)	Off Peak Load (MW)	Peak (MW)	Off Peak (MW)
I	**NORTHERN REGION**				
1	Punjab	8805	8759	3237	3034
2	Haryana	7318	7018	3790	3790
3	Rajasthan	6840	6640	4731	4721
4	Delhi	5241	5044	1172	1172
5	Uttar Pradesh	12034	12134	6260	6283
6	Jammu & Kashmir	1935	1834	556	571
7	Uttarakhand	1559	1459	508	469
8	Himachal Pradesh	1489	1390	867	867
9	Chandigarh	291	277	0	0
10	ISGS/IPPs			19676	17746
	Total NR	**45512**	**44555**	**40797**	**38653**
II	**EASTERN REGION**				
1	West Bengal	6881	4919	4764	3604
2	Jharkhand	1070	850	365	370
3	Orissa	3740	3000	3049	2375
4	Bihar	2190	1820	80	80
5	Damodar Valley Corporation	2350	2139	3523	3008
6	Sikkim	86	40		
7	Bhutan	108	108	1425	1065
8	ISGS/IPPs	300	480	9351	8716
	Total ER	**16725**	**13356**	**22557**	**19218**
III	**WESTERN REGION**				
1	Chattisgarh	2709	2381	1653	1326
2	Madhya Pradesh	5556	3873	4367	2740
3	Maharashtra	15757	13648	9707	7696
4	Gujarat	11177	8813	8279	6437
5	Goa	330	356		
6	Daman and Diu	244	263		
7	Dadra and Nagar Haveli	629	613		
8	ISGS/IPPs	1255	1255	18036	17054
	Total WR	**37657**	**31202**	**42042**	**35253**

ASSUMPTIONS IN BASECASE

Month : July '14

S.No.	Name of State/Area	Load		Generation	
		Peak Load (MW)	Off Peak Load (MW)	Peak (MW)	Off Peak (MW)
IV	**SOUTHERN REGION**				
1	Andhra Pradesh	11750	10246	7877	6292
2	Tamil Nadu	12324	10506	7812	6808
3	Karnataka	8094	6969	6094	5005
4	Kerala	3394	2653	1512	907
5	Pondy	339	291		
6	Goa	84	83		
7	ISGS/IPPs			10422	9492
	Total SR	**35985**	**30748**	**33717**	**28504**
V	**NORTH-EASTERN REGION**				
1	Arunachal Pradesh	120	60	0	0
2	Assam	1350	970	220	200
3	Manipur	120	84	0	0
4	Meghalaya	310	217	80	70
5	Mizoram	75	53	8	4
6	Nagaland	120	84	12	12
7	Tripura	250	120	90	90
8	ISGS/IPPs			1309	1096
	Total NER	**2345**	**1588**	**1719**	**1472**
	Total All India	**138224**	**121449**	**140832**	**123100**

1. Explanatory Notes to the change in representation of ER-SR TTC/ATC

- Hitherto, ER-SR TTC was being declared at (A) Talcher Interconnector and (B) Gazuwaka BTB HVDC i.e., as shown in the Figure-1. This was being done considering the metering point for scheduling and accounting as well as the jurisdiction of Talcher stage-II (under SRLDC presently)

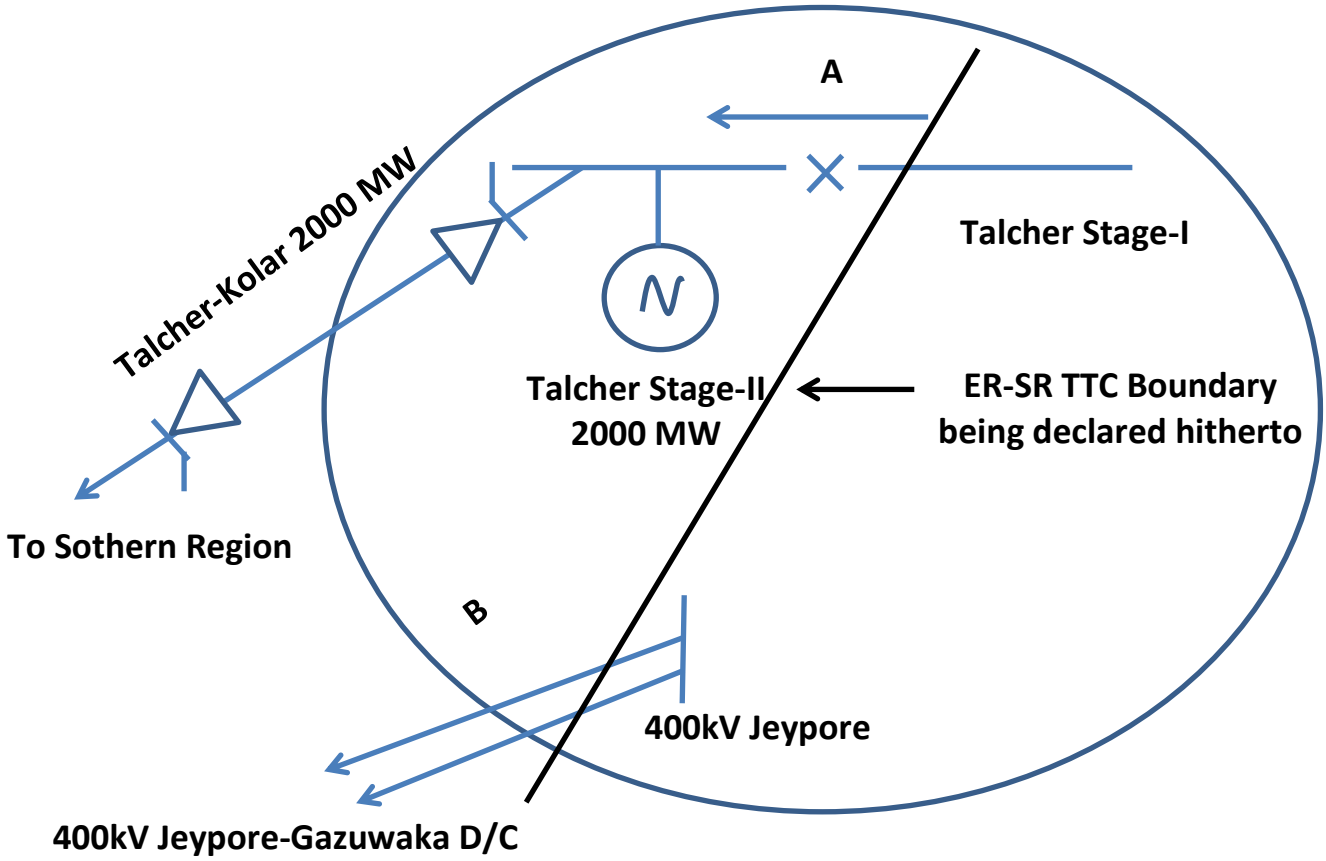

Figure-1

- However, the CEA, Government of India and CTU documents/reports consider Talcher-Kolar HVDC bipole as an inter-regional exchange point between ER & SR. Therefore, TTC declaration on ER-SR corridor has been changed to Talcher-Kolar Inter-regional Link and Gazuwaka BTB HVDC i.e., as shown in the Figure-2 w.e.f. 16th May 2014
- Scheduling & Metering interface between ER & SR will continue to be the same as per existing methodology.

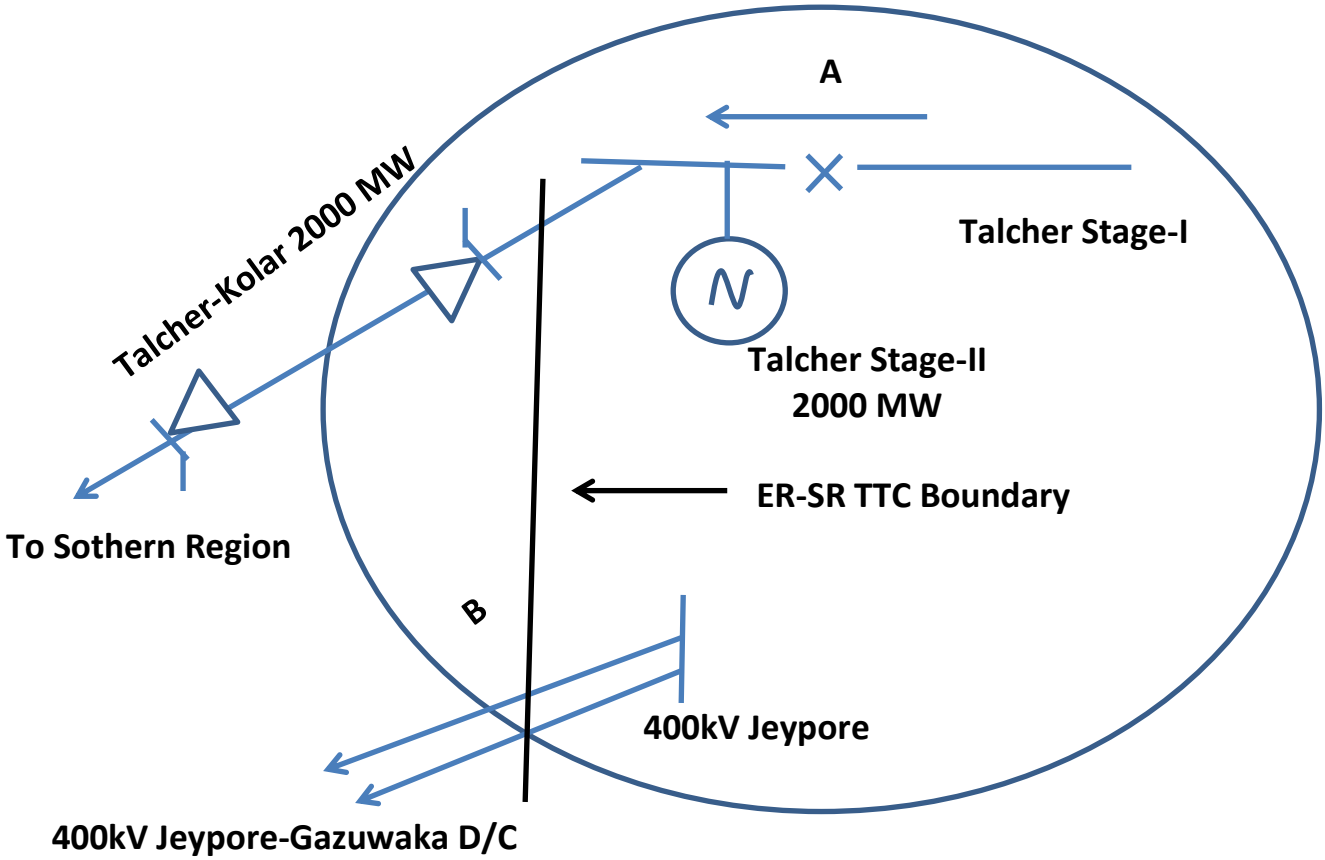

Figure-2

2. Explanatory Notes to the change in representation of S1-S2 TTC/ATC

- Hitherto, S1-S2 TTC was being declared as a scheduling limit which included maximum physical flow possible from S1 to S2 area plus total injection from central sector generating stations located in S2 Area, such as NLC TPS-II Stage-I & II, NLC TPS-II Expn, NLC TPS-I Expn, Vallur STPS, MAPS.
- In order to make S1-S2 TTC more comprehendible, the TTC has been changed to Physical flow gate limit consisting of following lines.
    - 400kV Nellore – Alamathi S/C
    - 400kV Nellore – Sriperumbudur S/C
    - 400kV Nellore – Thiruvallam D/C
    - 400kV Chittor – Thiruvallam D/C
    - 400kv Kolar – Thiruvallam S/C
    - 400kV Kolar – Hosur D/C

- 400kV Somanahally – Hosur S/C
- 400kV Chittoor – Sriperumbudur S/C
- 230kV Chittoor – Thiruvallam S/C
- 230kV Sulurpet-Gumudipoondi S/C
- 230kV Yerandhahalli – Hosur S/C
- 220kV Kadakola – Kaniyampetah S/C