

**National Load Despatch Centre
Total Transfer Capability for April 2015**

Issue Date: 21/04/2015

Issue Time: 1250 hrs

Revision No. 18

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 April 2015 to 30th April 2015	00-24	2500	500	2000	706	1294		
WR-NR *	1st April 2015 to 11th April 2015	00-17	5100	500	4600	5157	0		
		23-24			4600		0		
	12th April 2015	00-07	5100	500	4600	5157	0		
		07-24	4850		4350		0		
	13th April 2015 to 30th April 2015	00-17	5100	500	4600	5157	0		
		23-24			4600		0		
		17-23	5100		4600		0		
NR-ER*	1st April 2015 to 30th April 2015	00-06	2000	200	1800	293	1507		
		06-18'	2000		1800	358	1442		
		18-24	2000		1800	293	1507		
ER-NR *	1st April 2015 to 30th April 2015	00-17	3400	300	3100	2431	669		
		23-24			3100		669		
		17-23			3400			669	
W3-ER [§]	1st April 2015 to 30th April 2015	00-24	No limit is being specified. No Re-routing is allowed via W3-ER-NR.						
ER-W3	1st April 2015 to 30th April 2015	00-24	1000	300	700	874	0		
WR-SR	1st April 2015 to 6th April 2015	05-22	2300	750	1550	1350	200		
		00-05	2700		1950		600		
	7th April 2015	00-05	2700	750	1950	1350	600		
		05-06	2300		1550		200		
		06-08	2150		1400		50		
		08-22	1800		1050		0		
		22-24	2200		1450		100		
	8th April 2015 to 14th April 2015	00-05	2700	750	1950	1350	600		
		05-22	2300		1550		200		
		22-24	2300		1550		200		
	15th April 2015	00-05	2700	750	1950	1350	600		
		05-22	2300		1550		200		
		22-24	2300		1550		200		
	16th April 2015	05-22	2300	750	1550	1350	200		
		00-05	2700		1950		600		
		22-24	2300		1550		200		
	17th April 2015 to 18th April 2015	05-22	2300	750	1550	1350	200		
		00-05	2300		1550		200		
	19th April 2015	05-22	2300	750	1550	1350	200		
		00-05	2700		1950		600		
	20th April 2015 to 23rd April 2015	05-22	2300	750	1550	1350	200		
		00-05	2700		1950		600		
		22-24'	2300		1550		200		
	24th April 2015 to 30th April 2015	05-22	2300	750	1550	1350	200		
00-05		2700	1950		600				
		22-24	2700		1950		600		
SR-WR *	1st April 2015 to 30th April 2015	00-24	No limit is being Specified.						
ER-SR	1st April 2015 to 30th April 2015	00-06	2650	0	2650	2585	65		
		18-24					0		
		06-18'				2650	0		
SR-ER *	1st April 2015 to 30th April 2015	00-24	No limit is being Specified.						
ER-NER	1st April 2015 to 30th April 2015	00-17	1100	40	1060	210	850		
		23-24			880		670		
		17-23	920		880		670		
NER-ER	1st April 2015 to 30th April 2015	No limit is being Specified.							

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S1-S2	1st April 2015 to 3rd April 2015	00-24	2885	315	2570	2535	35		
	4th April 2015	00-08 08-24'	2885 3330	315	2570 3015	2535	35 480		
	5th April 2015 to 6th April 2015	00-24	3330	315	3015	2535	480		
	7th April 2015	00-24	2970	315	2655	2535	120		
	8th April 2015	0000-1030	2970	315	2655	2535	120		
		1030-2400	3165	315	2850	2644	206		
	9th April 2015	00-08	3165	315	2850	2644	206		
		08-18'	3015		2700	2644	56		
		18-24'	2880		2565	2535	30		
	10th April 2015 to 12th April 2015	00-24	2880	315	2565	2535	30		
	13th April 2015	0000-1015	2880	315	2565	2535	30		
		1015-1800	2810		2495	2535	0		
		18-24'	2810		2495	2535	0		
	14th April 2015	00-24	2880	315	2565	2535	30		
	15th April 2015	00-1330	2880	315	2565	2535	30		
		1330-2400	3230		2915	2535	380		
	16th April 2015	00-24	3230	315	2915	2535	380		
	17th April 2015	00-12	3230	315	2915	2535	380		
		12-24'	3230		2915	2535	380		
	18th April 2015	00-13	3230	315	2915	2535	380		
		13-19	2880		2565	2535	30		
		19-24	3450		3135	2644	491		
	19th April 2015	00-24	3450	315	3135	2644	491		
	20th April 2015	00-12	3520	315	3205	2644	561		
12-24.		3450	3135		2535	600			
21st April 2015	00-12	3520	315	3205	2644	561			
	12-24'	3520		3205	2644	561	355	Revised due to extension of outage of NCTPS Stage 2 unit- 1	
22nd April 2015 to 23rd April 2015	00-24	3165	315	2850	2644	206			
24th April 2015 to 30th April 2015	00-24	2880	315	2565	2535	30			
Import of Punjab	1st April 2015 to 30th April 2015	00-24	5700	300	5400	3790	1610		
Import TTC for DD & DNH	1st April 2015 to 30th April 2015	00-24	1200	0	1200	LTA and MTOA as per ex-pp schedule			
W3 zone Injection	1st April 2015 to 30th April 2015	00-17 23-24	9400	200	9200	7094	2106		
		17-23			9900		9700	2606	

* 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).

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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
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\$ 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.

- 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) KWPCCL, 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 commissioned 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.

In case of TTC Revision due to any shutdown :

- 1) The TTC value will be revised to normal values after restoration of shutdown.
- 2) The TTC value will be revised to normal values if the shutdown is not being availed in real time.

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 400kV Singrauli-Anpara & High loading of 765 kV Agra-Gwalior (1250 MW SPS setting on each circuit of 765 kV Gwalior-Agra) and Loop flows on 400kV Kankroli-Zerda and 400kV Bhinmal-Zerda (power flowing from WR to NR on 765kV Gwalior-Agra D/C and from NR to WR on 400kV Kankroli-Zerda and 400kV Bhinmal-Zerda).
NR-ER	(n-1) contingency of 400 kV Saranath-Pusauli
ER-NR	(n-1) contingency of Kahalgaon-Banka S/C
ER-W3	1. n-1 of 400 kV Wardha – Parli will lead to 30 degrees angular separation between Wardha and Parli. 2. (n-1) contingency of one circuit of 400kV Parli(PG)-Sholapur(PG)
WR-SR & ER-SR	1. n-1 of 400 kV Wardha – Parli will lead to 30 degrees angular separation between Wardha and Parli. 2. (n-1) contingency of one circuit of 400kV Parli(PG)-Sholapur(PG) 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.
ER-NER	(N-1) contingency of 400/132 kV, 2x200 MVA ICTs at Silchar leads to high loading on 2nd ICT.
S1-S2	(n-1) contingency of one circuit of 400 kV Kolar-Hosur D/C
Import of DD & DNH	(n-1) contingency of 400/220KV 315MVA ICT at VAPI
Import of Punjab	(n-1) contingency of ICT at Dhuri and (n-1) contingency of 220kV Moga(PG)-Moga(PSTCL)
W3 zone Injection	1. n-1 of 400 kV Wardha – Parli will lead to 30 degrees angular separation between Wardha and Parli. 2. (n-1) contingency of one circuit of 400kV Parli(PG)-Sholapur(PG)

*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 April 2015 to 30th April 2015	00-17 23-24	8500	800	7700	7588	112		
		17-23	8500		7700		112		
NER	1st April 2015 to 30th April 2015	00-17 23-24	1100	40	1060	210	850		
		17-23	920		880		670		
WR									
SR	1st April 2015 to 6th April 2015	00-05	5350	750	4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
		22-24	5350		4600	3935	665		
	7th April 2015	00-05	5350	750	4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-08'	4800		4050	4000	50		
		08-18'	4450		3700	4000	0		
		18-22	4450		3700	3935	0		
	8th April 2015 to 14th April 2015	22-24	4850	750	4100	3935	165		
		00-05	5350		4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
	15th April 2015	22-24	5350	750	4600	3935	665		
		00-05	5350		4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
	16th April 2015	22-24	4950	750	4200	3935	265		
		00-05	5350		4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
	17th April 2015 to 18th April 2015	22-24	4950	750	4200	3935	265		
		00-05	4950		4200	3935	265		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
	19th April 2015	22-24	5350	750	4600	3935	665		
		00-05	5350		4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
	20th April 2015 to 23rd April 2015	22-24	4950	750	4200	3935	265		
		00-05	5350		4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		
	24th April 2015 to 30th April 2015	22-24	4950	750	4200	3935	265		
		00-05	5350		4600	3935	665		
		05-06'	4950		4200	3935	265		
		06-18'	4950		4200	4000	200		
		18-22	4950		4200	3935	265		

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 April 2015 to 30th April 2015	00-06	4500	700	3800	999	2801		
		06-17'			3800	1064	2736		
		23-24	4500		3800	999	2801		
NER	1st April 2015 to 30th April 2015	00-24	No limit is being Specified.						
WR									
SR *	1st April 2015 to 30th April 2015	00-24	No limit is being Specified.						

* 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 Kahalgaon-Banka S/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 (power flowing from WR to NR on 765kV Gwalior-Agra D/C and from NR to WR 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 Saranath-Pusauli
NER	Import	(N-1) contingency of 400/132 kV, 2x200 MVA ICTs at Silchar leads to high loading on 2nd ICT.
SR	Import	1. n-1 of 400 kV Wardha – Parli will lead to 30 degrees angular separation between Wardha and Parli. 2. (n-1) contingency of one circuit of 400kV Parli(PG)-Sholapur(PG)
		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.

*Primary constraints

**National Load Despatch Centre
Total Transfer Capability for April 2015**

Revision No	Date of Revision	Period of Revision	Reason for Revision	Corridor Affected
1	12-02-2015	Whole Month	Margin revised due to cancellation of LTA/MTOA.	NR-WR/ ER-W3
2	02-03-2015	Whole Month	STOA Margins revised due to grant of MTOA from Chattisgarh to KSEB by CTU.	W3-ER/ W3 Zone
			Revised due to commissioning of Kudankulam Unit-1, Coastal energen Unit-1 and Vallur Unit-3	S1-S2
3	20-03-2015	Whole month	Revised considering maintenance schedule of Singrauli - Rihand complex and reviewed HVDC set points.	WR-NR
			Revised considering revised thermal ratings of the lines in ER and expected flows on ER-NR corridor	ER-NR
			Revised considering the present Maharashtra Demand pattern and the commissioning of 765kV Pune-Sholapur S/C.	WR-SR
4	31-03-2015	Whole month	STOA margin revised due to commissioning of Sasan Unit-6	WR-NR
			Revised considering the revised thermal ratings of the lines in ER and network topology changes in NER.	ER-NER
5	04-04-2015	04.04.2015 - 06.04.2015	Revised due to NCTPS Unit Outage.	S1-S2
		07.04.2015 - 30.4.2015	Revised due to 765kV level Charging of Kurnool - Thiruvallam D/c and LGBR Changes.	
6	06-04-2015	07-04-2015	Revised due to Shutdown of HVDC Bhadrawati Block-1 and 400 kV 400kV Ramagundam-Bhadrawati-Ckt-1.	WR-SR
7	08-04-2015	08-04-2015	Revised due to outage of Vallur unit 1	S1-S2
		09-04-2015	Revised due to outage of Vallur unit 1 and shutdown of 220 kV Kadakola - Kaniyampetta	
		10-04-2015 - 30-04-2015	Revised after a corrected calculation in the simulation	
8	09-04-2015	4/9/20145	Revised due to revival of Vallur Unit-1	S1-S2
9	13-04-2015	13-04-015	Revised due to shutdown of 400 kV Nellore - Sriperumbudur S/C	S1-S2
10	13-04-2015	13-04-2015	Revised due to extension of shutdown of 400 kV Nellore - Sriperumbudur S/C	S1-S2
11	13-04-2015	13-04-2015	Revised due to extension of shutdown of 400 kV Nellore - Sriperumbudur S/C	S1-S2

12	14-04-2015	15-04-2015	Revised due to shutdown 400 KV Sholapur(PG) Bus-2	WR-SR
13	15-04-2015	15-04-2015 - 17-04-2015	Revised due to outage of NCTPS Stage 2 - Unit- 1	S1-S2
		16-04-2015 - 18-04-2015	Revised due to shutdown of 400 kV Pune - GIS- Parli D/C	WR-SR
14	17-04-2015	17-04-2015 - 18-04-2015	Revised due to extension of outage of NCTPS Stage 2 - Unit- 1	S1-S2
15	18-04-2015	18-04-2015 23-04-2015	Revised due to outage of NCTPS stage 2 Unit-1 , Coastal energy Unit 1and Valur Unit 3	S1-S2
16	19-04-2015	20-04-2015- 23-04-2015	Revised due to shutdown of 400 Sholapur(PG) Bus#1	WR-SR
17	20-04-2015	20-04-2015	Revised due to extension of outage of NCTPS Stage 2 - Unit- 1 and Coastal Energen Unit - 1	S1-S2
		21-04-2015	Revised due to extension of outage of NCTPS Stage 2 - Unit- 1	
18	21-04-2015	21-04-2015	Revised due to extension of outage of NCTPS Stage 2 unit- 1	S1-S2

ASSUMPTIONS IN BASECASE

Month : Apr '15

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	5409	4445	3101	2272
2	Haryana	5737	4159	1726	1522
3	Rajasthan	7500	5646	5073	4432
4	Delhi	4025	2614	1009	650
5	Uttar Pradesh	11849	12777	5434	5454
6	Jammu & Kashmir	2100	1779	650	588
7	Uttarakhand	1344	1113	480	343
8	Himachal Pradesh	1293	927	530	423
9	Chandigarh	186	114	0	0
10	ISGS/IPPs	0	0	15905	12209
	Total NR	39443	33574	33908	27893
II	EASTERN REGION				
1	West Bengal	7200	5800	5000	4000
2	Jharkhand	1100	850	470	350
3	Orissa	3800	3100	2900	2150
4	Bihar	2550	2100	110	0
5	Damodar Valley Corporation	2650	2200	3300	2750
6	Sikkim	95	60	-	-
7	Bhutan	-	-	235	175
8	ISGS/IPPs			9520	8395
	Total ER	17395	14110	21535	17820
III	WESTERN REGION				
1	Chattisgarh	3486	3181	1610	1473
2	Madhya Pradesh	7270	5274	3570	1181
3	Maharashtra	19386	15678	15142	10934
4	Gujarat	13740	9287	9985	5532
5	Goa	410	340	0	0
6	Daman and Diu	253	261	0	0
7	Dadra and Nagar Haveli	588	626	0	0
8	ISGS/IPPs	0	0	20446	20446
	Total WR	45133	34647	50753	39566

ASSUMPTIONS IN BASECASE

Month : Apr '15

S.No.	Name of State/Area	Load		Generation	
		Peak Load (MW)	Off Peak Load (MW)	Peak (MW)	Off Peak (MW)
IV	SOUTHERN REGION				
1	Telangana	5832	5116	2399	2197
2	Andhra Pradesh	5307	4653	5314	4759
3	Tamil Nadu	10840	9969	6783	5823
4	Karnataka	7890	6637	6897	4860
5	Kerala	3341	2427	2082	1081
6	Pondy	340	245		
7	Goa	89	89		
8	ISGS/IPPs			7730	7730
	Total SR	33639	29136	31205	26450
V	NORTH-EASTERN REGION				
1	Arunachal Pradesh	69	31	0	0
2	Assam	749	566	225	160
3	Manipur	68	40	0	0
4	Meghalaya	201	106	104	44
5	Mizoram	51	31	4	3
6	Nagaland	63	53	10	6
7	Tripura	228	161	104	104
8	ISGS/IPPs			856	578
	Total NER	1429	988	1303	895
	Total All India	137039	112455	138704	112624