

**National Load Despatch Centre
Total Transfer Capability for April 2014**

Issue Date: 22/04/2014

Issue Time: 1300 hrs

Revision No. 15

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 2014 to 30th April 2014	00-24	2500	500	2000	361	1639		
WR-NR ¹	1st April 2014 to 30th April 2014	00-17 23-24	4200	500	3700	3656	44		
		17-23	4200		3700		44		
NR-ER*	1st April 2014 to 30th April 2014	00-17 23-24	1000	200	800	200	600		
		17-23	1100		900		700		
ER-NR ⁵	1st April 2014 to 07th April 2014	00-17 23-24	3300	300	3000	2789	211		
		17-23					211		
	08th April 2014 to 10th April 2014	00-17 23-24	3800	300	3500	2789	711		
		17-23					711		
	11th April 2014 to 20th April 2014	00-17 23-24	3800	300	3500	2789	711		
		17-23					711		
	21st April 2014 to 22nd April 2014	00-06 19-24	3800	300	3500	2789	711		
		06-19'			2600		2300		
23rd April 2014 to 30th April 2014	00-17 23-24	3800	300	3500	2789	711			
	17-23					711			
W3-ER	1st April 2014 to 11th April 2014	00-24	1800	300	1500	0	1500		
	12th April 2014	00-07	1800	300	1500	0	1500		
		07-24'	1600	300	1300	0	1300		
	13th April 2014	00-24	1600	300	1300	0	1300		
	14th April 2014	00-07 16-24	1800	300	1500	0	1500		
		07-16'	1600	300	1300	0	1300		
	15th April 2014 to 17th April 2014	00-24	1800	300	1500	0	1500		
18th April 2014 to 30th April 2014	00-24	1800	300	1500	427	1073			
ER-W3	1st April 2014 to 30th April 2014	00-24	1000	300	700	700	0		
WR-SR	1st April 2014 to 30th April 2014	00-24	1000	0	1000	1000	0		
SR-WR *	1st April 2014 to 30th April 2014	00-24	1000	0	1000	0	1000		
ER-SR	1st April 2014 to 12th April 2014	00-05 10-19	750	0	750	507	243		
		05-10 19-24			750		243		
	13th April 2014	00-05 14-19	750	0	750	507	243		
		07-14'			450		0		
		05-07 19-24			750		243		
	14th April 2014 to 30th April 2014	00-05 10-19	750	0	750	507	243		
		05-10 19-24			750		243		

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SR-ER *	1st April 2014 to 30th April 2014	00-17	1100	0	1100	197	903		
		23-24							
		17-23	1100				903		
ER-NER²	1st April 2014	00-17	620	50	570	230	340		
		23-24							
		17-23	620		570		340		
	2nd April 2014 to 04th April 2014	00-06	620	50	570	230	340		
		06-24	350		300		70		
	05th April 2014 to 07th April 2014	00-17	620	50	570	230	340		
		17-23	620		570		340		
	08th April 2014 to 10th April 2014	00-17	720	50	670	230	440		
		23-24							
	11th April 2014 to 12th April 2014	17-23	670		620		390		
		00-17	720	50	670	230	440		
	23-24								
	13th April 2014	00-05	720	50	670	230	440		
		17-23	670		620		390		
		05-17	660		610		380		
	14th April 2014 to 15th April 2014	23-24	660	50	610	230	380		
		17-23	660		610		380		
		00-05	720		670		440		
	16th April 2014 to 20th April 2014	00-17	720	50	670	230	440		
		23-24							
	21st April 2014 to 22nd April 2014	17-23	670		620		390		
		00-06	720	50	670	230	440		
	23-24								
	06-17	560	510		280				
23rd April 2014 to 30th April 2014	17-19	670		620		390			
	19-23	670		620		390			
NER-ER	1st April 2014	00-17	580	100	480	0	480		
		23-24							
		17-23	560		460		460		
	02nd April 2014 to 04th April 2014	00-06	580	100	480	0	480		
		06-17	110		10		10		
		23-24							
	17-23	17-23	110		10		10		
		00-17	580	100	480	0	480		
	23-24								
	05th April 2014 to 12th April 2014	17-23	560		460		460		
		00-06	580	100	480	0	480		
		06-17	580		480		480		
	23-24								
	13th April 2014	17-23	560		460		460		
		00-06	580	100	480	0	480		
	06-17	480	380		380				
	23-24	480	380		380				
	14th April 2014 to 15th April 2014	17-23	480		380		380		
		00-17	580	100	480	0	480		
		23-24							
	16th April 2014 to 30th April 2014	17-23	560		460		460		
		00-17	580	100	480	0	480		
	23-24								

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S1-S2	1st April 2014 to 30th April 2014	00-24	5650	400	5250	4900	350		
Import of Punjab	1st April 2014 to 30th April 2014	00-24	5600	300	5300	3800	1500		
Import TTC for DD & DNH	1st April 2014 to 30th April 2014	00-24	980	0	980	LTA and MTOA as per ex-pp schedule			
W3 zone Injection	1st April 2014 to 10th April 2014	00-17	9000	200	8800	6901	1899		
		23-24	9500		9300		2399		
	11th April 2014 to 15th April 2014	00-17	8700	200	8500	6901	1599		
		23-24	9200		9000		2099		
	16th April 2014 to 22nd April 2014	00-17	9000	200	8800	6901	1899		
		23-24	9500		9300		2399		
	23rd April 2014 to 25th April 2014	00-17	8700	200	8500	6901	1599	-300	Revised due to shutdown of 400kV Bhilai-Seoni
		23-24	9200		9000		2099		
	26th April 2014 to 30th April 2014	00-17	9000	200	8800	6901	1899		
		23-24	9500		9300		2399		

* 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, b) Jindal Power Limited (JPL) , 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

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.

The figure is based on LTA/MTOA approved by CTU. In actual Operation, due to Units being on Maintenance/ Fuel shortage the LTA/MTOA utilized would be less. RLDC/ NLDC would factor this situation while issuing STOA approvals

\$ 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. WR-NR Total Transfer capability will be reduced to 3100 MW in case of outage of any one of the following sections:
• 765 kV Gwalior-Agra one circuit

2. ER-NER Total Transfer capability will be reduced to 450 MW in case of outage of any one of the 400kV Purnea-Biharshariff circuit.

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Limiting Constraints

Corridor	Constraint
NR-WR	(n-1) contingency of 400kV Zerda-Bhimmal and (n-1) contingency of 220kV Badod-Modak.
WR-NR	High loading of 765 kV Agra-Gwalior (1000 MW SPS setting on each circuit of 765 kV Gwalior-Agra)
NR-ER	(n-1) contingency of 400 kV Allahabad-Pusauli
ER-NR	(n-1) contingency of 400 kV Kahalgaon-Biharshariff
W3-ER	(n-1) contingency of 400kV Sterilte-Rourkela S/C
ER-W3	High loading of 400 kV Raipur-Bhadrawati T/C, Bhilai-Bhadrawati S/C, Bhilai-Koradi and Bhilai-Seoni* (n-1) contingency of 400kV Raigarh-Sterlite
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. Considering transfer capability assessment by CTU on NEW-SR corridor.
SR-WR	Bhadrawati HVDC B/B link capacity
SR-ER	
ER-NER	(n-1) contingency of 400 kV Kahalgaon-Biharshariff (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 S/C and 400kV Somanahalli-Salem S/C line.
Import of Punjab	(n-1) contingency of ICT at Patiala/Moga
W3 zone Injection	(n-1) contingency of 400 kV Raipur-Wardha-Parli 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									
NR¹	1st April 2014 to 7th April 2014	00-17 23-24	7500	800	6700	6445	255		
		17-23	7500		6700		255		
	08th April 2014 to 10th April 2014	00-17 23-24	8000	800	7200	6445	755		
		17-23	8000		7200		755		
	11th April 2014 to 20th April 2014	00-17 23-24	8000	800	7200	6445	755		
		17-23	8000		7200		755		
	21st April 2014 to 22nd April 2014	00-06 19-24	8000	800	7200	6445	755		
		06-19'	6800		6000		0		
	23rd April 2014 to 30th April 2014	00-17 23-24	8000	800	7200	6445	755		
		17-23	8000		7200		755		
NER²	1st April 2014	00-17 23-24	620	50	570	230	340		
		17-23	620		570		340		
	2nd April 2014 to 04th April 2014	00-06 06-24'	620	50	570	230	340		
			350		300		70		
	05th April 2014 to 07th April 2014	00-17 23-24	620	50	570	230	340		
		17-23	620		570		340		
	08th April 2014 to 10th April 2014	00-17 23-24	720	50	670	230	440		
		17-23	670		620		390		
	11th April 2014 to 12th April 2014	00-17 23-24	720	50	670	230	440		
		17-23	670		620		390		
	13th April 2014	00-05	720	50	670	230	440		
		05-17'	660		610		380		
		17-23	660		610		380		
	14th April 2014 to 15th April 2014	00-05	720	50	670	230	440		
		05-17'	660		610		380		
		17-23	660		610		380		
	16th April 2014 to 20th April 2014	00-17 23-24	720	50	670	230	440		
		17-23	670		620		390		
21st April 2014 to 22nd April 2014	00-06 23-24	720	50	670	230	440			
	06-17'	560		510		280			
	17-19			510					
	19-23	670		620		390			
23rd April 2014 to 30th April 2014	00-17 23-24	720	50	670	230	440			
	17-23	670		620		390			

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
WR									
SR	1st April 2014 to 12th April 2014	00-05 10-19	1750	0	1750	1507	243		
		05-10 19-24	1750		1750		243		
	13th April 2014	00-05 14-16	1750	0	1750	1507	243		
		07-14'	1450		1450		0		
		05-07 19-24	1750		1750		243		
	14th April 2014 to 30th April 2014	00-05 10-19	1750	0	1750	1507	243		
		05-10 19-24	1750		1750		243		

1. WR-NR Total Transfer capability will be reduced to 3100 MW in case of outage of any one of the following sections:
 • 765 kV Gwalior-Agra one circuit

2. ER-NER Total Transfer capability will be reduced to 450 MW in case of outage of any one of the 400kV Purnea-Biharshariff circuit.

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 2014 to 30th April 2014	00-17 23-24	3500	700	2800	561	2239		
		17-23	3600		2900		2339		
NER	1st April 2014	00-17 23-24	580	100	480	0	480		
		17-23	560		460		460		
	02nd April 2014 to 04th April 2014	00-06	580	100	480	0	480		
		06-17 23-24	110		10		10		
		17-23	110		10		10		
	05th April 2014 to 12th April 2014	00-17 23-24	580	100	480	0	480		
		17-23	560		460		460		
	13th April 2014	00-06	580	100	480	0	480		
		06-17 23-24	580		480		480		
		17-23	560		460		460		
	14th April 2014 to 15th April 2014	00-06	580	100	480	0	480		
		06-17 23-24	480		380		380		
		17-23	480		380		380		
	16th April 2014 to 30th April 2014	00-17 23-24	580	100	480	0	480		
17-23		560	460		460				
WR									
SR*	1st April 2014 to 30th April 2014	00-17 23-24	2100	0	2100	197	1903		
		17-23	2100		2100		1903		

* 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 400 kV Kahalgaon-Biharshariff High loading of 765 kV Agra-Gwalior (1000 MW SPS setting on each circuit of 765 kV Gwalior-Agra)
	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 400 kV Kahalgaon-Biharshariff and (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. Considering transfer capability assessment by CTU on NEW-SR corridor.
	Export	

*Primary constraints

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Total Transfer Capability for April 2014**

Revision No	Date of Revision	Period of Revision	Reason for Revision	Corridor Affected
1	22-01-2014	Whole Month	Revised due to commissioning of 765kV Raichur-Sholapur S/C	WR-SR / ER-SR
2	19-02-2014	Whole Month	Revised due to change in Inter-regional flow pattern & COD of Sasan UMPP Unit-2	WR-NR
			Revised considering operational experience and margins on HVDC	WR-SR / ER-SR
			Review of flow pattern due to network topology change and Load Generation Balance.	W3 Zone Injection
3	07-03-2014	Whole Month	STOA/PX transactions on West-East-North Corridor discontinued on account of Inter-Regional Loop flows leading to physical congestion on WR-NR.	ER-NR/ WR-NR
4	13-03-2014	Whole Month	Margin revised due to withdrawal/cancellation of 150MW MTOA from Corporate Power Limited	ER-SR
5	25-03-2014	Whole Month	Revised due to Non commissioning of Kudankulam U-1 & Vallur U-3	S1-S2
6	30-03-2014	01/04/2014 - 10/04/2014	Revised due to shutdown of 400 kV Barh-Patna D/C	ER-NER / ER-NR
		Whole Month	Margin Revised due to Non commissioning of Neyveli TS2 expn	S1-S2
7	01-04-2014	02/04/2014 - 04/04/2014	Revised due to shutdown of 400 kV Balipara-Misa D/C and 220 kV Samaguri-Sarusujai D/C	ER-NER / NER-ER
8	07-04-2014	08/04/2014 - 10/04/2014	Revised due to return of 400 kV Barh-Patna D/C shutdown	ER-NER / ER-NR
9	10-04-2014	12/04/2014 - 13/04/2014	Revised due to shutdown of 400 kV Ranchi-Sipat D/C	W3-ER
		11/04/2014 - 15/04/2014	Revised due to shutdown of 400 kV Seoni-Bhilai	W3
10	11-04-2014	13/04/2014 - 15/04/2014	Revised due to shutdown of 220 kV Birpara-Salakati D/C	ER-NER / NER-ER
		13-04-2014	Revised due to emergency shutdown of 400 kV Anugul-JITPL	ER-SR
11	12-04-2014	13-04-2014	Revised due to rescheduling of 220 kV Birpara-Salakati D/C shutdown	ER-NER / NER-ER
12	13-04-2014	14-04-2014	Revised due to shutdown of 400 kV Rourkela-Jharsuguda Ckt 1	W3-ER
13	17-04-2014	18/04/2014 - 30/04/2014	Allocation of Power from WR to Bangladesh and Southern region Incorporated.	W3-ER
14	20-04-2014	21/04/2014 - 22/04/2014	Revised due to emergency shutdown of Main Bus-I & II of Koderma and 400 kV Maithon-Koderma-Biharsariff S/C	ER-NR/ ER-NER
15	22-04-2014	23/04/2014- 25/04/2014	Revised due to shutdown of 400kV Bhilai-Seoni	W3 Zone Injection

ASSUMPTIONS IN BASECASE

Month : April '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	5971	5191	2258	2229
2	Haryana	5885	5116	3178	3178
3	Rajasthan	7955	6916	5132	5116
4	Delhi	4102	3566	1296	1296
5	Uttar Pradesh	11500	10090	6358	6354
6	Jammu & Kashmir	2133	1854	387	420
7	Uttarakhand	1628	1415	461	416
8	Himachal Pradesh	1413	1228	469	385
9	Chandigarh	238	192	0	0
10	ISGS/IPPs			17197	11973
	Total NR	40825	35568	36736	31367
II	EASTERN REGION				
1	West Bengal	6600	5100	4797	3999
2	Jharkhand	1000	800	450	450
3	Orissa	3400	2600	2404	1600
4	Bihar	2000	1600	0	0
5	Damodar Valley Corporation	2600	2350	3600	3397
6	Sikkim	90	50	0	0
7	Bhutan	110	110	200	200
8	ISGS/IPPs	250	250	6850	6490
	Total ER	16050	12860	18301	16136
III	WESTERN REGION				
1	Chattisgarh	3409	2219	1628	1629
2	Madhya Pradesh	7452	5051	3847	3003
3	Maharashtra	16644	16097	12273	11027
4	Gujarat	12328	10980	10791	9002
5	Goa	384	352		
6	Daman and Diu	195	260		
7	Dadra and Nagar Haveli	545	582		
8	ISGS/IPPs	1344	1244	18231	16949
	Total WR	42301	36785	46770	41610

IV	SOUTHERN REGION				
1	Andhra Pradesh	12114	10011	7509	6688
2	Tamil Nadu	11539	10115	7173	6000
3	Karnataka	8407	7250	6874	5088
4	Kerala	3310	2451	1724	461
5	Pondy	329	286		
6	Goa	84	84		
7	ISGS/IPPs			10280	9536
	Total SR	35783	30197	33560	27773
V	NORTH-EASTERN REGION				
1	Arunachal Pradesh	120	84	0	0
2	Assam	1300	955	220	190
3	Manipur	120	84	0	0
4	Meghalaya	310	217	70	50
5	Mizoram	75	53	0	0
6	Nagaland	120	84	12	10
7	Tripura	230	130	105	100
8	ISGS/IPPs			963	597
	Total NER	2275	1607	1370	947
	Total All India	137234	117017	136736	117833