

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

Issue Date: 29/04/2014

Issue Time: 1330 hrs

Revision No. 21

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 25th April 2014	00-17	4200	500	3700	3656	44		
		23-24	4200		3700		44		
	26th April 2014	00-09	4200	500	3700	3656	44		
		09-11'	3800		3700		0		
	27th April 2014 to 30th April 2014	11-24'	4200	500	3700	3656	44		
		00-17	4200		3700		44		
		23-24	4200		3700		44		
		17-23	4200		3700		44		
NR-ER*	1st April 2014 to 30th April 2014	00-17	1000	200	800	200	600		
		23-24	1100		900		700		
ER-NR ⁵	1st April 2014 to 07h April 2014	00-17	3300	300	3000	2789	211		
		23-24					211		
	08th April 2014 to 10th April 2014	00-17	3800	300	3500	2789	711		
		23-24					711		
	11th April 2014 to 20th April 2014	00-17	3800	300	3500	2789	711		
		23-24					711		
	21st April 2014 to 22nd April 2014	00-06	3800	300	3500	2789	711		
		19-24					2600		
23rd April 2014 to 24th April 2014	00-17	3800	300	3500	2789	711			
	23-24					711			
25th April 2014 to 30th April 2014	00-17	3800	300	3500	2789	711			
	23-24					711			
		17-23	3800		3500		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	1800	300	1500	0	1500		
		16-24	1600	300	1300	0	1300		
	15th April 2014 to 17th April 2014	00-24	1800	300	1500	0	1500		
	18th April 2014 to 27th April 2014	00-24	1800	300	1500	427	1073		
	28th April 2014	00-09	1800	300	1500	427	1073		
		09-24'	1500		1200		773		
29th April 2014	00-18'	1500	300	1200	427	773			
	18-24	1800		1500		1073			
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		

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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		750		243		
	13th April 2014	00-05 14-19	750	0	750	507	243		
		07-14' 05-07 19-24	450 750		450 750		0 243		
	14th April 2014 to 30th April 2014	00-05 10-19	750	0	750	507	243		
		05-10 19-24	750		750		243		
SR-ER *	1st April 2014 to 30th April 2014	00-17 23-24	1100	0	1100	197	903		
		17-23	1100		1100		903		
ER-NER ²	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	620	50	570	230	340		
		06-24'	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		
		23-24 17-23			610		380		
	14th April 2014 to 15th April 2014	00-05	720	50	670	230	440		
		05-17'	660		610		380		
		23-24 17-23			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		620			390				
23rd April 2014 to 24th April 2014	00-17 23-24	720	50	670	230	440			
	17-23	670		620		390			
25th April 2014 to 30th April 2014	00-17 23-24	720	50	670	230	440			
	17-23	670		620		390			

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NER-ER	1st April 2014	00-17	580	100	480	0	480		
		23-24			460		460		
		17-23	560						
	02nd April 2014 to 04th April 2014	00-06	580	100	480	0	480		
		06-17	110		10		10		
		23-24			10		10		
	05th April 2014 to 12th April 2014	00-17	580	100	480	0	480		
		23-24			460		460		
		17-23	560						
	13th April 2014	00-06	580	100	480	0	480		
		06-17	580		480		480		
		23-24			460		460		
	14th April 2014 to 15th April 2014	00-06	580	100	480	0	480		
		06-17	480		380		380		
		23-24			380		380		
	16th April 2014 to 30th April 2014	00-17	580	100	480	0	480		
		23-24			460		460		
		17-23	560						
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			9300		2399		
	11th April 2014 to 15th April 2014	00-17	8700	200	8500	6901	1599		
		23-24			9000		2099		
	16th April 2014 to 22nd April 2014	00-17	9000	200	8800	6901	1899		
		23-24			9300		2399		
	23rd April 2014 to 25th April 2014	00-17	8700	200	8500	6901	1599		
		23-24			9000		2099		
	26th April 2014 to 29th April 2014	00-17	9000	200	8800	6901	1899		
		23-24			9300		2399		
	30th April 2014	00-07	9000	200	8800	6901	1899		
		07-17	8500		8300		1399	-500	Revised due to shutdown of 400kV Raipur-Wardha Ckt-I
23-24			8800		1899				

* 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.

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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.

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 (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 24th April 2014	00-17 23-24	8000	800	7200	6445	755		
		17-23	8000		7200		755		
	25th April 2014	00-17 23-24	8000	800	7200	6445	755		
		17-23	8000		7200		755		
	26th April 2014	00-09'	8000	800	7200	6445	755		
		09-11'	7600		6800		355		
		11-24'	8000		7200		755		
	27th 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		
	23-24 17-23	660	610		380				

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	
NER ²	14th April 2014 to 15th April 2014	00-05	720	50	670	230	440			
		05-17'	660		610		380			
		23-24	660		610		380			
	16th April 2014 to 20th April 2014	00-17	720	50	670	230	440			
		23-24	670		620		390			
	21st April 2014 to 22nd April 2014	00-06	720	50	670	230	440			
		23-24	560		510		280			
		06-17'	670		510		390			
	23rd April 2014 to 24th April 2014	17-19	720	50	670	230	440			
		19-23	670		620		390			
	25th April 2014 to 30th April 2014	00-17	720	50	670	230	440			
		23-24	670		620		390			
	WR									
SR	1st April 2014 to 12th April 2014	00-05	1750	0	1750	1507	243			
		10-19	1750		1750		243			
	13th April 2014	05-10	1750	0	1750	1507	243			
		10-19	1450		1450		0			
		07-14'	1750		1750		243			
		19-24	1750		1750		243			
	14th April 2014 to 30th April 2014	00-05	1750	0	1750	1507	243			
		10-19	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

National Load Despatch Centre
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
16	24-04-2014	25/04/2014- 30/04/2014	Revised due to shutdown of 400kV Kahalgaon-Barh D/C	ER-NER/ ER-NR
17	24-04-2014	25/04/2014- 30/04/2015	Revised due to cancellation of 400kV Kahalgaon-Barh D/C shutdown.	ER-NER/ ER-NR

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18	25-04-2014	26-04-2014	Revised due to shutdown of 765kV Agra Bus-I	WR-NR
19	26-04-2014	26-04-2014	Revised due to 765kV Agra Bus-I shutdown not being availed.	WR-NR
20	27-04-2014	28/04/2014 - 29/04/2014	Revised due to shutdown of 400 kV Rourkela-Sundergarh-Raigarh Ckt-I	W3-ER
21	29/4/2014	30-04-2014	Revised due to Shutdown of 400kV Raipur-Wardha Ckt-1	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