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NR-WR    Sth March 2013 to 8th March 2013   150.24   1500   200   1300   286   1014   Revised d Gwaltor-E   1015   1014   Revised d Agra-Gwaltor-E   1015	ue to shutdown of 400 kV ikroli on 06.03.13. ue to Cancellation of 400 Bhinmal shutdown on ue to Cancellation of Agrasina shutdown. ue to upgradation work of diior-Bina. The on work would be carried erent stages from 9th 25th March 2013 and dynamic studies carried issess transfer capability ue to shutdown of 400 kV ikroli on 06.03.13. ue to Cancellation of 400
NR-WR   Sth March 2013   19-24   1500   200   1300   286   1014   Revised d Zerda-Kar	nkroli on 06.03.13.  ue to Cancellation of 400 Bhinmal shutdown on  ue to Cancellation of Agra- Bina shutdown.  ue to upgradation work of dior-Bina. The on work would be carried erent stages from 9th 25th March 2013  and dynamic studies carried ssess transfer capability  ue to shutdown of 400 kV nkroli on 06.03.13.  ue to Cancellation of 400
NR-WR    100	ue to Cancellation of 400 Bhinmal shutdown on ue to Cancellation of Agra- Sina shutdown. ue to upgradation work of dior-Bina. The on work would be carried erent stages from 9th 25th March 2013 and dynamic studies carried ssess transfer capability ue to shutdown of 400 kV nkroli on 06.03.13. ue to Cancellation of 400
NR-WR  9th March 2013	Bhinmal shutdown on ue to Cancellation of Agra- lina shutdown. ue to upgradation work of dior-Bina. The on work would be carried erent stages from 9th 25th March 2013  and dynamic studies carried sess transfer capability ue to shutdown of 400 kV nkroli on 06.03.13. ue to Cancellation of 400
9th March 2013   00-24   1500   200   1300   286   1014   Gwalior-E	Bina shutdown.  ue to upgradation work of ditor-Bina. The on work would be carried erent stages from 9th 25th March 2013  and dynamic studies carried seess transfer capability ue to shutdown of 400 kV nkroli on 06.03.13.  ue to Cancellation of 400
10th March 2013	dior-Bina. The on work would be carried erent stages from 9th 25th March 2013  and dynamic studies carried ssess transfer capability ue to shutdown of 400 kV nkroli on 06.03.13. ue to Cancellation of 400
11th March 2013 to 25th March 2013   00-24   1300   200   1100   286   814   upgradatic out in diff March 2013 to 31st March 2013 to 31st March 2013 to 5th March 2013   00-24   2000   200   1300   286   1014	on work would be carried erent stages from 9th 25th March 2013 and dynamic studies carried ssess transfer capability ue to shutdown of 400 kV nkroli on 06.03.13. ue to Cancellation of 400
25th March 2013 to 31st March 2013 to 31st March 2013 to 5th March 2013 to 5th March 2013 to 5th March 2013   00-24   2000   200   1800   1040   760   Review are out to reasonable for the march 2013   00-07, 19-24   2000   200   1800   1040   760   Review are out to reasonable for the march 2013   00-07, 19-24   2000   200   1800   1040   760   Revised decreased by the march 2013 to 31st	25th March 2013  and dynamic studies carried sesses transfer capability ue to shutdown of 400 kV nkroli on 06.03.13. ue to Cancellation of 400
31st March 2013 to 5th March 2013 to 5th March 2013 to 760   200   1800   1040   760   Review are out to reasonable of the March 2013   19-24   2000   200   1800   1040   760   Revised down and the reasonable of the March 2013   19-24   2000   200   1800   1040   760   Revised down and the reasonable of the March 2013 to 8th March 2	ue to shutdown of 400 kV nkroli on 06.03.13.
5th March 2013	ue to shutdown of 400 kV nkroli on 06.03.13.
6th March 2013 19-24 2000 200 1800 1040 760 Revised d	nkroli on 06.03.13. ue to Cancellation of 400
7th March 2013 to 8th March 2013 00-24 2000 200 1800 1040 760 kV Zerda-	ue to Cancellation of 400
7th March 2013 to 8th March 2013 00-24 2000 200 1800 1040 760 kV Zerda-	
07.03.13.	Bhinmal shutdown on
WR-NR         9th March 2013         00-24'         2000         200         1800         1040         760         Revised d Gwalior-E	ue to Cancellation of Agra- Bina
	ue to upgradation work of dior-Bina. The
03-24' 1500 1300 260 upgradatio	on work would be carried
	erent stages from 9th 25th March 2013
26th March 2013 00-24 2000 200 1800 1040 760	
27th March 2013 to 31st March 2013 00-24 2000 200 1800 1287 513 LTA revis of CGPL 1	sed due to commissioning Unit-50.
1.W 1.0010. 00-17 000 000 000 000	
NR-ER	
17-23 900 700 700 700 1-14 1-24 1-24 1-24 1-24 1-24 1-24 1-24	
1st March 2013 to 4th March 2013 23-24 2500 300 2200 1900 300	
17-23 1900 300 151 M = 1 2013 00-09 2500 200 2200 1000 300	
5th March 2013 09 24' 2200 300 1900 1900 0	
FP-NP 6th March 2013 00 24 2200 300 1900 1900 0 Revised d	ue to shutdown of 400 kV
7th March 2013 00-18 2200 300 1900 1900 0	n-Biharsharif I
7th March 2013   18-24   2500   300   2200   1700   300   300	
8th March 2013 to 23-24 2500 300 2200 1900 500	
5181 Walch 2015 17-23 1900 300	
W3-ER	
ER-W3	
WR-SR   1st March 2013 to 31st March 2013   00-24   1000   0   1000   992   8	
SR-WR 1st March 2013 to 31st March 2013 to 31st March 2013 to 00-24 1000 0 1000 0 1000	

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)	Comments
	1st March 2013 to	00-05	950		950		780	Review of TTC due to change in load
	9th March 2013	10-19 05-10	950*	0	950*	170	780*	generation scenario
		19-24 00-05	950		950		780	
		1030-19	750		750		760	
	10th March 2013 to 11th March 2013	05-0830 19-24	950*	0	950*	170	780*	Revised due to shutdown of 400kV Vijayawada-Nellore D/C for chariot
		0830- 1000	750		250		80	crossing.
		1000- 1030'	250		250		80	
		00-05	950		950		780	
ER-SR	12th March 2013	10-19 05-10	950*	0	950*	170	780*	
		19-24 00-05	950^		950^		780^	
	13th March 2013 to 21st March 2013	10-19 05-10		0		170		
		19-24	950^^ 950^		950^^ 950^		780^^ 780^	
	22 134 1 2012	00-05 06-10'	750^^		750^^		580^^	
	22nd March 2013 to 23rd March 2013	10-19'	750^	0	750^	170	580^	Revised due to Shutdown of Gazuwaka HVDC Back To Back Ploe-1
	23rd March 2013	05-06 19-24	950^^		950^^		780^^	TO BUILTING T
	24th March 2013 to	00-05 10-19	950^	0	950^	170	780^	
	31st March 2013	05-10 19-24	950^^		950^^		780^^	
SR-ER	1st March 2013 to 31st March 2013	00-17 23-24	700	0	700	197	503	
	31st March 2013	17-23	700		700		503	
	1st March 2013 to 28th March 2013	00-17 23-24	400	35	365	228	137	
		17-23 00-17	400		365	228	137	
ER-NER#	29th March 2013 to 30th March 2013	23-24 17-23	475 475	35	440	228 228	212	Revised due to Load Generation Balance
		00-10	475		440	228	212	Revised due to shutdown of 400 kV
	31st March 2013	15-24 10-15'	415	35	380	228	152	Binaguri-Bongaigaon
	1st March 2013 to	00-17	510	100	410		410	
	27th March 2013	23-24 17-23	280	100	180	0	180	
	28th March 2013	00-10, 15-17,	510	100	410	0	410	Revised due to shutdown of 400 kV
	20th March 2013	23-24 10-15'	330	100	230	U	230	Binaguri-Bongaigaon
NER-ER		17-23	280		180		180	
	29th March 2013 to	00-17 23-24	510	100	410	0	410	
	30th March 2013	17-23	280		180		180	
	31st March 2013	00-10, 15-17, 23-24	510	100	410	0	410	Revised due to shutdown of 400 kV Binaguri-Bongaigaon
		10-15' 17-23	330 280		230 180		230 180	gan Dongagaon
	1st March 2013 to	Г						
S1-S2	31st March 2013	00-24	5800	200	5600	4400	1200	
Import of Punjab	1st March 2013 to 31st March 2013	00-24	5400	300	5100	3243	1857	
Import TTC for DD & DNH	1st March 2013 to 31st March 2013	00-24	980	0	980	LTA and MTO.		

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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)	Comments
	1st March 2013 to	00-17, 23-24	8000	200	7800	6413	1387	6413 MW corresponds to maximum effective LTA from W3. Export Margin from W3 would vary as per
	12th March 2013	17-23	8500	200	8300	0413	1887	the maintenance schedule of generators in the zone.
		00-08, 23-24	8000		7800		1387	Revised due to shutdown of 400kV
	13th March 2013 to 14th March 2013	08-17'	7600	200	7400	6413	987	Bhilai-Koradi on 13.3.13 & 14.3.13
	14th March 2013	17-18'	8100		7900		1487	for stringing work of upcoming 765 kV Raipur Pooling Station.
		18-23	8500		8300		1887	KV Kaipur Pooling Station.
	15th March 2013 to 20th March 2013	00-17, 23-24	8000	200	7800	6413	1387	
		17-23	8500		8300		1887	
W3 zone		00-07, 23-24	8000	200	7800	6413	1387	Revised due to shut down of 400kV
Injection	21st March 2013	07-17'	7600		7400		987	Raipur-Bhilai and 400kV Raipur-
		17-19'	8100		7900		1487	Bhadrawati-1
		19-23	8500		8300		1887	
	22nd March 2013 to 27th March 2013	00-17, 23-24	8000	200	7800	6413	1387	
		17-23	8500		8300		1887	
		00-07, 23-24	8000		7800		1387	Revised due to shut down of 400kV
	28th March 2013	07-17'	7600	200	7400	6413	987	Raipur-Bhilai and 400kV Raipur-
		17-19'	8100		7900		1487	Bhadrawati-1
		19-23	8500		8300		1887	
	29th March 2013 to 31st March 2013	00-17, 23-24	8000	200	7800	6413	1387	
	518t March 2015	17-23	8500	500	8300		1887	

- 1) ER-SR TTC declared at Talcher Interconnector and Gazuwaka HVDC B/B seam

- 1) ER-SR TTC declared at Talcher Interconnector and Gazuwaka HVDC B/B seam
  2) ^SI comprises of AP and Karnataka: S2 comprises of Tamil Nadu, Kerala and Pondicherry
  3) W3 comprises of the following regional entities and would be operational wef 0000 hrs of 18th September 2012
  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
  \* additional 250 MW can be transferred to SR if injection point is South Odisha
  ^ additional 350 MW can be transferred to SR if injection point is South Odisha

  ^ additional 350 MW can be transferred to SR if injection point is South Odisha

#### **Limiting Constraints**

Corridor	Constraint
NR-WR	(n-1) contingency of 400kV Bina(PG)-Bina(MP)
WR-NR	(n-1) contingency of 400 kV Bina-Satna leading to high loading of 765/400 kV Bina transformer
NR-ER	(n-1) contingency of 400 kV Pusauli-Biharsharif
ER-NR	(n-1) contingency of 400 kV Farakka-Malda
W3-ER	(n-1) contingency of 400 kV Sterlite-Rourkela
ER-W3	High loading of 400 kV Raipur-Wardha, Raipur-Bhadrawati T/C, Bhilai-Bhadrawati S/C, Bhilai-Koradi and Bhilai-Seoni* (n-1) contingency of 400kV Rourkela-Raigarh
WR-SR	Bhadrawati HVDC B/B link capacity
SR-WR	Bhadrawati HVDC B/B link capacity
ER-SR	(n-1) contingency of 400 kV Vijaywada-Nellore* Low Voltage in Chennai Area (n-1) contingency of 400 kV Rourkela-Talcher*
SR-ER	(n-1) contingency of 400 kV Farakka-Malda* (n-1) contingency of 400 kV Kadappa-Kolar and Neyvelli- Sriperumbudur
ER-NER	(n-1) contingency of 400 kV Farakka-Malda* High Loading of 220 kV BTPS-Agia (n-1) contingency of 400 kV Balipara – Bongaigaon-I
NER-ER	(n-1) contingency of 400 kV Balipara-Bongaigaon-I (n-1) contingency of 220 kV Samaguri – Saruajai I*
S1-S2	(n-1) contingency of 400 kV Hosur-Salem line
Import of Punjab	(n-1) contingency of ICT at Moga
W3 zone export TTC	(n-1) contingency of $400~\rm kV$ Raipur-Wardha and High loading of $400~\rm kV$ Bhilai-Koradi

\*Primary constraints

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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)	Comments	
ER									
	1st March 2013 to 4th March 2013	00-17 23-24 17-23	4500	500	4000	2940 2940	1060 1060	Review and dynamic studies carried out to reassess transfer capability	
	5th March 2013	00-09	4500 4200	500	4000 4000 3700	2940	1060 1060 760	Revised due to shutdown of     400 kV Kahalgaon-Biharsharif	
	6th March 2013	00-07, 19- 24	4200	500	3700	2940	760	I. 2.Shutdown of 400 kV Zerda-Kankroli on 06.03.13. 3.Revised due to	
	7th March 2013	07-19'	4000	500	3500 3700	2940	760 760	Cancellation of 400 kV Zerda- Bhinmal shutdown on	
	8th March 2013	18-24' 00-24	4500 4500		4000 4000		1060 1060	07.03.13.	
NR	9th March 2013	00-24	4500		4500		1560	Revised due to Cancellation of Agra-Gwalior-Bina shutdown.	
	10:1.16 1.2012	00-03	4500	500	4000	2940	1060	Revised due to upgradation	
	10th March 2013	03-24'	4000		3500		560	work of Agra-Gwalior-Bina. The upgradation work would	
	11th March 2013 to 25th March 2013	00-24	4000		3500		560	be carried out in different stages from 9th March to 25th March 2013.	
	26th March 2013	00-17 23-24	4500	500	4000	2940	1060	Review and dynamic studies carried out to reassess transfer	
		17-23 00-17			4000	2940	1060	capability LTA revised due to	
	27th March 2013 to 31st March 2013	23-24	4500	500	4000	3187 3187	813 813	commissioning of CGPL Unit- 50.	
	1st March 2013 to	00-17	400		365	228	137	50.	
	28th March 2013	23-24 17-23	400	35	365	228	137		
	29th March 2013 to	00-17	475		440	228	212	Revised due to Load	
NER#	30th March 2013	23-24 17-23	475		440	228	212	Generation Balance	
	31st March 2013	00-10 15-24	475	35	440	228	212	Revised due to shutdown of	
		10-15'	415		380	228	152	400 kV Binaguri-Bongaigaon	
WR									
	1st March 2013 to	00-05 10- 19	1950	_	1950		788		
	31st March 2013	05-10 19- 24	1950*	0	1950*	1162	788*	Review of TTC due to change in load generation scenario	
		00-05 1030-19	1950		1950		788	-	
	10th March 2013 to 11th March 2013	05-0830 19-24	1950*	0	1950*	1162		Revised due to shutdown of 400kV Vijayawada-Nellore D/C	
	11th March 2013	0830-10 1000-	1750		1750		588	for chariot crossing.	
		1030' 00-05 10-	1250		1250		88		
SR	12th March 2013	19 05-10 19-	1950*	0	1950*	1162	788 788*		
S.K		24 00-05 10-			1950^		788^		
	13th March 2013 to 21st March 2013	19 05-10 19-	1950^^	0	1950^^	1162	788^^		
		24 00-05	1950^		1950^		788^		
	22nd March 2013 to	06-10'	1750^^		1750^^	1162	588^	Revised due to Shutdown of	
	23rd March 2013 to 23rd March 2013	10-19' 05-06 19-	1750^ 1950^^	0	1750^ 1950^^	1162	588^ 788^^	Gazuwaka HVDC Back To Ba Ploe-1	
	24th Monet 2012 :	00-05 10-	1950^		1950^		788^		
	24th March 2013 to 31st March 2013	19 05-10 19- 24	1950^^	0	1950^^	1162	788^^		
	•								

 $<sup>^{\</sup>ast}$  additional 250 MW can be transferred to SR if injection point is South Odisha  $^{\wedge}$  additional 100 MW can be transferred to SR if injection point is South Odisha  $^{\wedge}$  additional 350 MW can be transferred to SR if injection point is South Odisha

## Simultaneous Export Capability

ER-NER         31st March 2013         23-24         350         2425         2132         293         Balance           1st March 2013 to 31st March 2013         00-17 23-24         2300         200         2100         286         1814         1914         1814         Revised kV Zero         1814         Revised kV Zero         17-23         2400         200         1900         286         1614         400 kV         400 kV         2000         1714         7.03.13	ed due to Shutdown of 400 rda-Kankroli on 06.03.13 & V Zerda-Bhinmal on
1st March 2013 to 31st March 2013	ed due to Shutdown of 400 rda-Kankroli on 06.03.13 & V Zerda-Bhinmal on
1st March 2013 to 31st March 2013	rda-Kankroli on 06.03.13 & V Zerda-Bhinmal on
6th March 2013	rda-Kankroli on 06.03.13 & V Zerda-Bhinmal on
6th March 2013	rda-Kankroli on 06.03.13 & V Zerda-Bhinmal on
6th March 2013   07-17'   2100   200   1900   286   1614   400 kV   17-19   2200   2200   1914   7.03.13	V Zerda-Bhinmal on
17-19   2200   2000   1714   7.03.13   19-23'   2400   2200   1914   7.03.13	
19-23' 2400 2200 1914	13.
/tn March 2013 to     2300     2100     1814	ed due to Cancellation of V Zerda-Bhinmal shutdown
17-23 2400 2200 1914 on 07.0	7.03.13.
NR 9th March 2013   00-17   2300   200   2100   286   1814   Reviser	ed due to Cancellation of
17-23 2400 2200 1914 Agra-G	Gwalior-Bina shutdown.
00-03 2300 2100 1814 Paging	ad due to ungradation
10th March 2013   03-17   2100   200   1900   286   1614   work o	ed due to upgradation of Agra-Gwalior-Bina. The adation work would be
I   17-23   2200     2000     1714   1°	ed out in different stages
11th March 2013 to 25th March 2013 200 200 286 1614 from 9 2013	9th March to 25th March
17-23   2200   2000   1714	
26th March 2013 to 31st March 2013	
17-23 2400 2200 1914	
1st March 2013 to 27th March 2013	
17-23 280 180 180	
	sed due to shutdown of
10-15' 330 230 230 400 k <sup>3</sup>	kV Binaguri-Bongaigaon
17-23 280 180 180	
NER 20th March 2013 to 00-17 510 410 410	
30th March 2013   23-24   310   100   410   0   410   0	
17-23   280   18	
15-17, 510 410 Revise	sed due to shutdown of
10-15' 330 230 230 400 k <sup>3</sup>	xV Binaguri-Bongaigaon
17-23 280 180 180	
WR	
SR 1st March 2013 to 00-17 23-24 1700 0 1700 197 1503	
31st March 2013 23-24 1700 1700 1503	

## **Limiting Constraints**

NR	Import	(n-1) contingency of 400 kV Farakka-Malda*
		(n-1) contingency of 400 kV Bina-Satna leading to high loading of 765/400 kV Bina transformers*
	Export	(n-1) contingency of 400kV Bina(PG)-Bina(MP)
		(n-1) contingency of 400 kV Pusauli-Biharsharif
NER	Import	High Loading of 220 kV BTPS-Agia
		(n-1) contingency of 400 kV Balipara – Bongaigaon-I
		(n-1) contingency of 400 kV Farakka-Malda*
	Export	(n-1) contingency of 220 kV Samaguri – Saruajai I*
		(n-1) contingency of 400 kV Balipara-Bongaigaon-I
SR	Import	(n-1) Coningency of 400kV Gooty-Somanhalli & 400kV Gooty-Nelamangala line
		(n-1) contingency of 400 kV Rourkela-Talcher*
		Bhadrawati HVDC B/B link capacity
		(n-1) contingency of 400 kV Vijaywada-Nellore
	Export	(n-1) contingency of 400 kV Farakka-Malda
		(n-1) contingency of 400 kV Maithon-Kahalgaon
		(n-1) contingency of 400 kV Kadappa-Kolar and Neyvelli- Sriperumbudur
ER-NR + ER-NER	Exmont	(n-1) contingency of 400 kV Farakka-Malda*

# **ASSUMPTIONS IN BASECASE**

		Loa	ad	Generation		
S.No.	Name of State/Area	Peak Load (MW)	Off Peak Load (MW)	Peak (MW)	Off Peak (MW)	
ı	NORTHERN REGION					
1	Punjab	5678	4250	2437	2318	
2	Haryana	5592	4591	3623	3623	
3	Rajasthan	7243	6793	4084	4089	
4	Delhi	4090	3299	1206	1206	
5	Uttar Pradesh	10774	9516	6020	5839	
6	Jammu & Kashmir	1800	1359	333	339	
7	Uttarakhand	1365	1100	523	302	
8	Himachal Pradesh	1043	959	218	131	
9	Chandigarh	188	86	0	0	
10	ISGS			16384	11062	
	Total NR	37773	31952	34828	28910	
II	EASTERN REGION					
1	West Bengal	6457	5456	4744	4088	
2	Jharkhand	964	650	354	354	
3	Orissa	3009	2300	1710	1611	
4	Bihar	1805	1450	101	101	
5	Damodar Valley Corporation	2303	2000	2954	2954	
6	Sikkim	44	44	0	0	
7	Bhutan	112	112	245	245	
8	ISGS			6505	5995	
	Total ER	14694	12012	16613	15348	
III	WESTERN REGION					
1	Chattisgarh	3153	2242	2518	2025	
2	Madhya Pradesh	7200	5146	3443	2802	
3	Maharashtra	15717	13582	13113	9454	
4	Gujarat	10497	8800	9933	7564	
5	Goa	420	280			
6	Daman and Diu	252	190			
7	Dadra and Nagar Haveli	602	504			
8	ISGS			11920	11796	
	Total WR	37841	30744	40927	33641	

# **ASSUMPTIONS IN BASECASE**

	7.000IIII I	10110 111			
IV	SOUTHERN REGION				
1	Andhra Pradesh	10835	9993	8217	6817
2	Tamil Nadu	10456	8310	5148	4619
3	Karnataka	8521	7469	5482	4397
4	Kerala	3314	2209	2248	645
5	Pondy	320	231		
6	Goa	84	84		
7	ISGS			10955	10772
	Total SR	33530	28296	32050	27250
٧	NORTH-EASTERN REGION				
1	Manipur	100	70	0	0
2	Meghalaya	280	196	99	71
3	Mizoram	70	49	4	3
4	Nagaland	110	77	11	10
5	Assam	1230	840	222	203
6	Tripura	221	155	94	91
7	Arunachal Pradesh	105	74	0	0
8	ISGS	0	0	934	499
	Total NER	2116	1461	1364	877
	Total All La Pa	40	40445	108-77	100
	Total All India	125954	104465	125782	106026