

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

Issue Date: 1/12/2015

Issue Time: 1100 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 Dec 2015 to 31st Dec 2015	00-24	2500	500	2000	706	1294		
WR-NR*	1st Dec 2015	00-06	7700	500	7200	5818	1382		Revised due to shutdown of one pole of HVDC Mundra - Mohindergarh
		06-24'	6700	500	6200	5818	382		
	2nd Dec 2015 to 5th Dec 2015	00-06	7700	500	7200	5818	1382		
		06-24'	6700	500	6200	5818	382	-1000	
	6th Dec 2015 to 31st Dec 2015	00-24	7700	500	7200	5818	1382		
NR-ER*	1st Dec 2015 to 31st Dec 2015	00-06	2000	200	1800	293	1507		
		06-18'	2000		1800	358	1442		
		18-24	2000		1800	293	1507		
ER-NR*	1st Dec 2015 to 31st Dec 2015	00-24	3800	300	3500	2431	1069		
W3-ER ^s	1st Dec 2015 to 31st Dec 2015	00-24	No limit is being specified. No Re-routing is allowed via W3-ER-NR.						
ER-W3	1st Dec 2015 to 31st Dec 2015	00-24	No limit is being specified.						
WR-SR	1st Dec 2015 to 31st Dec 2015	00-24	3200	750	2450	2450	0		
SR-WR *	1st Dec 2015 to 31st Dec 2015	00-24	No limit is being Specified.						
ER-SR	1st Dec 2015 to 31st Dec 2015	00-06	2650	0	2650	2585	65		
		18-24				2650	0		
		06-18'							
SR-ER *	1st Dec 2015 to 31st Dec 2015	00-24	No limit is being Specified.						

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ER-NER	1st Dec 2015	00-07	1290	45	1245	210	1035			
		0700-1630	1160		1115		905			
		1630-1700	1290		1245		1035			
		17-23	1100		1055		845			
		23-24	1290		1245		1035			
	2nd Dec 2015	00-17	1290	45	1245	210	1035			
		23-24	1100		1055		845			
	3rd Dec 2015	00-07	1290	45	1245	210	1035			
		0700-1630	1160		1115		905			
		1630-1700	1290		1245		1035			
		17-23	1100		1055		845			
		23-24	1290		1245		1035			
	4th Dec 2015 to 31st Dec 2015	00-17	1290	45	1245	210	1035			
		23-24	1100		1055		845			
	NER-ER	1st Dec 2015	00-07	1480	45	1435	210	1225		
			0700-1630	1110		1065		855		
1630-1700			1480	1435		1225				
17-23			1340	1295		1085				
23-24			1480	1435		1225				
2nd Dec 2015		00-17	1480	45	1435	210	1225			
		23-24	1340		1295		1085			
3rd Dec 2015		00-07	1480	45	1435	210	1225			
		0700-1630	1110		1065		855			
		1630-1700	1480		1435		1225			
		17-23	1340		1295		1085			
		23-24	1480		1435		1225			
4th Dec 2015 to 31st Dec 2015		00-17	1480	45	1435	210	1225			
		23-24	1340		1295		1085			
W3 zone Injection		1st Dec 2015 to 31st Dec 2015	00-24	No limit is being specified (in case of skewed inter-regional flows or any constraints appearing in the system, W3 zone export would be revised accordingly)						
Note: TTC/ATC of S1-S2 corridor, Import of Punjab and Import of DD & DNH is uploaded on NLDC website under Intra-Regional Section in Monthly ATC.A7										

* 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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\$ 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) S1 comprises of Telangana, AP and Karnataka: S2 comprises of Tamil Nadu, Kerala and Puducherry

2) 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	1. (n-1) Contingency of 765kV Gwalior-Agra one ckt leads to 2750 MW loading on second circuit. 2.High Loading of 400kV Singrauli-Anpara S/C.
NR-ER	(n-1) contingency of 400 kV Saranath-Pusauli
ER-NR	1. n-1 contingency of one circuit of 400 kV Biharshariff- Lakhisarai leads to high loading on the other circuit 2. n-1 contingency of one circuit of 400 kV Farakka-Malda leads to high loading of the other circuit
WR-SR & ER-SR	(n-1) contingency of one circuit of 765 kV Raichur - Sholapur will lead to 2000 MW loading on the other circuit Low Voltage at Gazuwaka (East) Bus.
ER-NER	(n-1) contingency of 400/220 kV, 2x315 MVA ICTs at Misa results in high loading of other 400/220 kV, 315 MVA ICT at Misa. n-1 contingency of 400/132 kV, 2 x 200 MVA ICTs at Silchar
NER-ER	(n-1) contingency of 400/220 kV, 2x315 MVA ICTs at Misa results in high loading of other 400/220 kV, 315 MVA ICT at Misa
W3 zone Injection	---

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 Dec 2015	00-05	11000	800	10200	8249	1951		Revised due to shutdown of one pole of HVDC Mundra - Mohindergarh
		05-06'	11100		11100		2851		
		06-08'	9658		8858		609		
		08-19'	9571		8771		522		
		19-24	8919		8119		0		
	2nd Dec 2015 to 5th Dec 2015	00-05	11000	800	10200	8249	1951		
		05-06'	11100		11100		2851	-1442	
		06-08'	9658		8858		609	-1529	
		08-19'	9571		8771		522		
		19-24	8919		8119		0	-1331	
	6th Dec 2015 to 31st Dec 2015	00-05	11000	800	10200	8249	1951		
		05-08'	11100		10300		2051		
		08-19'	11000		10200		1951		
		19-24	10250		9450		1201		
	NER	1st Dec 2015	00-07	1290	45	1245	210	1035	
0700-1630			1160	1115		905			
1630-1700			1290	1245		1035			
17-23			1100	1055		845			
23-24			1290	1245		1035			
2nd Dec 2015		00-17	1290	45	1245	210	1035		
		23-24	1100		1055		845		
		17-23	1100		1055		845		
3rd Dec 2015		00-07	1290	45	1245	210	1035		
		0700-1630	1160		1115		905		
		1630-1700	1290		1245		1035		
		17-23	1100		1055		845		
		23-24	1290		1245		1035		
4th Dec 2015 to 31st Dec 2015		00-17	1290	45	1245	210	1035		
		23-24	1100		1055		845		
WR									
SR		1st Dec 2015 to 31st Dec 2015	00-06	5850	750	5100	5035	65	
			06-18'	5850		5100	5100	0	
	18-24		5850	5100		5035	65		

* 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).

* For approving STOA Bilateral transactions, margin available in Simultaneous Import of NR would be apportioned on WR-NR Corridor & ER-NR Corridor in the following ratio:

Margin in Simultaneous import of NR = A

WR-NR ATC = B

ER-NR ATC = C

Margin for WR-NR applicants = $A * B / (B + C)$

Margin for ER-NR Applicants = $A * C / (B + C)$

Example: Margin for WR-NR applicants from 00-05 hours = $1831 * 7200 / (7200 + 3100) = 1280$

Margin for ER-NR applicants from 00-05 hours = $1831 * 3500 / (7200 + 3500) = 599$

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 Dec 2015 to 31st Dec 2015	00-06	4500	700	3800	999	2801		
		06-18'			3800	1064	2736		
		18-24	4500		3800	999	2801		
NER	1st Dec 2015	00-07	1480	45	1435	210	1225		
		0700-1630	1110		1065		855		
		1630-1700	1480		1435		1225		
		17-23	1340		1295		1085		
		23-24	1480		1435		1225		
	2nd Dec 2015	00-17	1480	45	1435	210	1225		
		23-24	1340		1295		1085		
		17-23	1480		1435		1225		
	3rd Dec 2015	00-07	1480	45	1435	210	1225		
		0700-1630	1110		1065		855		
		1630-1700	1480		1435		1225		
		17-23	1340		1295		1085		
		23-24	1480		1435		1225		
	4th Dec 2015 to 31st Dec 2015	00-17	1480	45	1435	210	1225		
		23-24	1340		1295		1085		
WR									
SR *	1st Dec 2015 to 31st Dec 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 400 kV Biharshariff- Lakhisarai S/C 1. (n-1) Contingency of 765kV Gwalior-Agra one ckt leads to 2750 MW loading on second circuit. 2.High Loading of 400kV Singrauli-Anpara S/C.
	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 400/220 kV, 2x315 MVA ICTs at Misa results in high loading of other 400/220 kV, 315 MVA ICT at Misa. n-1 contingency of 400/132 kV, 2 x 200 MVA ICTs at Silchar
	Export	(n-1) contingency of 400/220 kV, 2x315 MVA ICTs at Misa results in high loading of other 400/220 kV, 315 MVA ICT at Misa.
SR	Import	(n-1) contingency of one circuit of 765 kV Raichur - Sholapur will lead to 2000 MW loading on the other circuit Low Voltage at Gazuwaka (East) Bus.

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Revision No	Date of Revision	Period of Revision	Reason for Revision	Corridor Affected
1	24/9/2015	Whole Month	Revised due to revision in 765kV Gwalior-Agra Ckt-1&2 SPS setting.	WR-NR/ Import of NR
			Revised due to commissioning of 765kV Dharamjaigarh-Jabalpur D/C.	W3 Zone Injection
2	16/10/2015	Whole Month	STOA margin revised due to operationalization of MTOA.	WR-NR/ Import of NR
			Revised due to commissioning of 765kV Dharamjaigarh-Jabalpur D/C.	ER-W3
			Revised due to commissioning of 765 kV Aurangabad - Sholapur D/C	WR- SR/Import of SR
			Revised due commissioning of 765 kV Aurangabad-Sholapur D/C, 765 kV Dharamjaigarh - Jabalpur D/C and considering the present inter regional power flow pattern	W3 Zone Injection
3	23-11-2015	Whole month	Margin available in Simultaneous Import of NR would be apportioned on WR-NR Corridor & ER-NR Corridor in the ratio of ATCs - Example	WR-NR/ Import of NR
4	24-11-2015	Whole Month	Revised due comissioning of new transmission elements	ER-NR
5	30-11-2015	01-12-2015	Revised due to shutdown of one pole of HVDC Mundra - Mohindergarh	WR-NR/ Import of NR
		Whole Month	STOA margin revised after an inadvertent error in LTA/MTOA summation figure is fixed	WR-NR/ Import of NR
		Whole Month	Revised due commissioning of 400kV Kolhapur(PG)-Kudgi(PG) one ckt	WR- SR/Import of SR
		01-12-2015	Revised due to shutdown of 220 kV Balipara- Samaguri	ER-NER/ NER- ER
		03-12-2015		
6	01-12-2015	02-12-2015 to 05-12-2015	Revised due to shutdown of one pole of HVDC Mundra - Mohindergarh	WR-NR/ Import of NR

ASSUMPTIONS IN BASECASE					
					Month : December '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	5559	3491	2152	2085
2	Haryana	6228	2948	2217	2217
3	Rajasthan	9325	8655	5570	5514
4	Delhi	3175	1549	790	790
5	Uttar Pradesh	12198	11682	5569	5587
6	Uttarakhand	1679	1218	525	228
7	Himachal Pradesh	1376	925	336	263
8	Jammu & Kashmir	2339	2352	401	255
9	Chandigarh	172	75	0	0
10	ISGS/IPPs	0	0	19083	11552
	Total NR	42053	32894	36643	28491
II	EASTERN REGION				
1	Bihar	2831	2132	180	120
2	Jharkhand	1049	914	540	360
3	Damodar Valley Corporation	2517	2132	3660	2748
4	Orissa	3672	2946	3365	1842
5	West Bengal	6333	5916	4695	3051
6	Sikkim	125	102	0	0
7	Bhutan	0	0	0	0
8	ISGS/IPPs	609	559	10625	9607
	Total ER	17137	14700	23065	17728
III	WESTERN REGION				
1	Maharashtra	20822	13093	14523	7312
2	Gujarat	13593	9878	10498	7289
3	Madhya Pradesh	9763	6885	4479	3426
4	Chattisgarh	3676	2005	2743	1102
5	Daman and Diu	306	229	0	0
6	Dadra and Nagar Haveli	783	562	0	0
7	Goa-WR	511	288	0	0
8	ISGS/IPPs	982	973	27229	23303
	Total WR	50436	33913	59472	42431

IV	SOUTHERN REGION				
1	Andhra Pradesh	5629	5313	4759	4284
2	Telangana	6366	6065	2427	1899
3	Karnataka	7697	5550	6984	5307
4	Tamil Nadu	11912	11319	6646	5746
5	Kerala	3445	2132	1796	826
6	Pondy	336	220	0	0
7	Goa-SR	85	85	0	0
8	ISGS/PPs	0	0	10043	9773
	Total SR	35470	30684	32655	27835
V	NORTH-EASTERN REGION				
1	Arunachal Pradesh	94	40	0	0
2	Assam	954	698	267	198
3	Manipur	103	56	0	0
4	Meghalaya	301	179	155	87
5	Mizoram	69	41	4	4
6	Nagaland	82	63	8	6
7	Tripura	224	131	106	106
8	ISGS/PPs	7	7	1303	847
	Total NER	1834	1215	1843	1248
	Total All India	146930	113407	153679	117734