

National Load Despatch Centre राष्ट्रीय भार प्रेषण केंद्र

POWER SYSTEM OPERATION CORPORATION LIMITED

पॉवर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड

(Government of India Enterprise/ भारत सरकार का उद्यम) B-9, QUTUB INSTITUTIONAL AREA, KATWARIA SARAI, NEW DELHI -110016 बी-9, क़ुतुब इन्स्टीट्यूशनल एरिया, कटवारिया सराये, न्यू दिल्ली-110016

Ref: POSOCO/NLDC/SO/Daily PSP Report

दिनांक: 05th May 2019

To,

- 1. कार्यकारी निदेशक, पू .क्षे .भा .प्रे .के.,14 , गोल्फ क्लब रोड , कोलकाता 700033 Executive Director, ERLDC, 14 Golf Club Road, Tollygunge, Kolkata, 700033
- 2. कार्यकारी निदेशक, ऊ. क्षे. भा. प्रे. के., 18/ ए , शहीद जीत सिंह सनसनवाल मार्ग, नई दिल्ली 110016 Executive Director, NRLDC, 18-A, Shaheed Jeet Singh Marg, Katwaria Sarai, New Delhi – 110016
- 3. कार्यकारी निदेशक, प .क्षे .भा .प्रे .के., एफ3-, एम आई डी सी क्षेत्र , अंधेरी, मुंबई -400093 Executive Director, WRLDC, F-3, M.I.D.C. Area, Marol, Andheri (East), Mumbai-400093
- 4. मुख्य महाप्रबंधक, ऊ. पू. क्षे. भा. प्रे. के., डोंगतिएह, लोअर नोंग्रह , लापलंग, शिलोंग 793006 Chief General Manager, NERLDC, Dongteih, Lower Nongrah, Lapalang, Shillong - 793006, Meghalaya
- 5. कार्यकारी निदेशक , द .क्षे .भा .प्रे .के.,29 , रेस कोर्स क्रॉस रोड, बंगलुरु -560009 Executive Director, SRLDC, 29, Race Course Cross Road, Bangalore-560009

Sub: Daily PSP Report for the date 04.05.2019.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 04-मई-2019 की अखिल भारतीय प्रणाली की दैनिक ग्रिड निष्पादन रिपोर्ट रा॰भा॰प्रे॰के॰ की वेबसाइट पर उप्लब्ध है ।

As per article 5.5.1 of the Indian Electricity Grid Code, the daily report pertaining power supply position of All India Power System for the date 04th May 2019, is available at the NLDC website.

धन्यवाद,

पॉवर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड राष्ट्रीय भार प्रेषण केंद्र, नई दिल्ली

Date of Reporting Report for previous day 5-May-19

A. Power Supply Position at All India and Regional level

	NR	WR	SR	ER	NER	Total
Demand Met during Evening Peak hrs(MW) (at 2000 hrs; from RLDCs)	49941	48786	42914	18216	1419	161276
Peak Shortage (MW)	546	0	20	0	936	1502
Energy Met (MU)	1129	1211	1019	319	34	3711
Hydro Gen (MU)	228	55	78	94	17	472
Wind Gen (MU)	19	76	147			242
Solar Gen (MU)*	26.00	25.26	87.88	2.06	0.01	141
Energy Shortage (MU)	10.9	0.0	0.1	0.0	6.9	18.0
Maximum Demand Met during the day	53324	54701	43488	18544	1490	166591
MW) & time (from NLDC SCADA)	23:13	15:23	15:45	20:15	07:55	22:48

B. Frequency Profile (%)
Region
All India 49.7-49.8 FVI <49.7 49.8-49.9 <49.9 49.9-50.05 > 50.05 0.041 14.51

Region	States	Max. Demand Met during the day (MW)	Shortage during maximum Demand (MW)	Energy Met (MU)	Drawal Schedule (MU)	OD(+)/UD(-) (MU)	Max OD (MW)	Energy Shortage (MU
	Punjab	7000	0	144.5	74.2	-2.2	13	0.0
	Haryana	7698	0	148.6	118.6	0.2	280	0.0
	Rajasthan	9977	0	222.4	72.0	-0.7	394	0.0
NR	Delhi	4836	0	100.5	85.6	-1.0	217	0.0
	UP	19405	0	393.3	183.2	-0.1	702	0.0
	Uttarakhand	1937	0	41.8	18.4	0.6	95	0.0
	HP	1311	3	26.9	7.0	1.6	149	0.0
	J&K	2245	561	46.2	27.9	0.7	300	10.9
	Chandigarh	206	0	4.4	5.1	-0.7	0	0.0
	Chhattisgarh	4174	0	94.8	49.4	-3.0	405	0.0
	Gujarat	16927	0	377.9	105.5	3.9	565	0.0
	MP	9224	0	210.0	111.1	0.0	643	0.0
WR	Maharashtra	21925	0	485.1	144.7	-0.6	302	0.0
WK	Goa	541	0	11.6	11.1	-0.1	33	0.0
	DD	315	0	7.1	6.9	0.2	31	0.0
	DNH	783	0	18.3	18.2	-0.1	157	0.0
	Essar steel	349	0	6.3	5.7	0.6	286	0.0
	Andhra Pradesh	8986	0	189.4	48.5	0.3	563	0.0
	Telangana	7829	0	168.8	49.0	0.4	498	0.0
SR	Karnataka	11430	0	224.5	72.8	2.3	641	0.0
3N	Kerala	3872	0	80.8	55.4	1.3	199	0.0
	Tamil Nadu	15428	0	346.6	151.7	1.3	618	0.0
	Pondy	413	20	8.8	8.8	0.0	58	0.1
	Bihar	4954	0	80.4	78.5	-0.7	190	0.0
	DVC	3072	0	59.5	-35.0	-0.2	240	0.0
ER	Jharkhand	1082	0	18.7	9.3	-0.6	100	0.0
LIN	Odisha	3021	0	55.8	16.5	-2.0	220	0.0
	West Bengal	6825	0	103.6	32.3	-1.7	290	0.0
	Sikkim	98	0	1.1	1.7	-0.5	15	0.0
	Arunachal Pradesh	114	5	2.0	2.1	0.0	90	0.0
	Assam	877	156	18.7	13.3	1.1	107	6.7
	Manipur	158	6	2.3	2.1	0.2	30	0.0
NER	Meghalaya	240	0	4.7	1.7	-0.2	96	0.0
	Mizoram	64	5	1.5	1.3	0.1	15	0.0
	Nagaland	105	3	2.0	1.9	0.0	23	0.0
	Tripura	155	12	2.4	1.8	-0.3	109	0.2

D. Transnational Exchanges (MU) - Import(+ve)/Export(-ve)

, , , , , , , , , , , , , , , , , , ,	Bhutan	Nepal	Bangladesh
Actual(MU)	26.6	-6.6	-13.8
Day peak (MW)	1568.0	-510.4	-867.0

E. Import/export By Regions(in MU) - Import(+ve)/Export(-ve); OD(+)/UD(-)

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	260.2	-247.4	96.5	-96.8	-12.7	-0.2
Actual(MU)	261.0	-256.0	114.1	-108.0	-14.0	-3.0
O/D/U/D(MU)	0.8	-8.7	17.5	-11.3	-1.2	-2.8

F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	5466	11595	7852	1850	356	27119
State Sector	9730	14774	7160	4875	50	36589
Total	15196	26369	15012	6725	406	63707

G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	516	1211	475	364	11	2577
Lignite	17	15	42	0	0	74
Hydro	228	55	78	94	17	472
Nuclear	28	31	37	0	0	95
Gas, Naptha & Diesel	35	51	15	0	23	124
RES (Wind, Solar, Biomass & Others)	68	107	267	2	0	444
Total	892	1471	913	460	51	3787

Share of RES in total generation (%)	7.63	7.28	29.23	0.46	0.02	11.73
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	36.35	13.13	41.76	20.87	33.09	26.71

H. Diversity Factor
All India Demand Diversity Factor
Diversity factor = Sum of regional maximum demands / All India maximum demand

 $[\]textbf{*}\underline{\textbf{Source}}\textbf{:} \textbf{RLDCs} \ \text{for solar connected to ISTS; SLDCs} \ \text{for embedded solar.} \ Limited \ visibility \ \text{of embedded solar} \ \text{data}.$

		INT	ER-REGI	ONAL EXCH	ANGES	Date of l	Reporting :	5-May-19
								Import=(+ve) /Export =(-ve) for NET (MU)
Sl No	Voltage Level	Line Details	Circuit	Max Import (MW)	Max Export (MW)	Import (MU)	Export (MU)	NET (MU)
Import/E		ER (With NR)						
1	7651-37	GAYA-VARANASI	D/C	0	594	0.0	10.2	-10.2
3	765kV	SASARAM-FATEHPUR GAYA-BALIA	S/C S/C	0	474 264	0.0	7.7 3.8	-7.7 -3.8
4	HVDC	ALIPURDUAR-AGRA	-	0	500	0.0	3.0	-3.0
5	HVDC	PUSAULI B/B	S/C	0	50	0.0	1.3	-1.3
6	_	PUSAULI-VARANASI	S/C	0	49	0.0	0.7	-0.7
7		PUSAULI -ALLAHABAD	S/C	0	45	0.0	0.4	-0.4
9	400 kV	MUZAFFARPUR-GORAKHPUR	D/C	0	1308	0.0	25.3	-25.3
10	400 KV	PATNA-BALIA	Q/C D/C	0	1291 733	0.0	24.4 12.6	-24.4 -12.6
11		BIHARSHARIFF-BALIA MOTIHARI-GORAKHPUR	D/C D/C	0	416	0.0	7.6	-7.6
12		BIHARSHARIFF-VARANASI	D/C	3	306	0.0	1.9	-1.9
13	220 kV	PUSAULI-SAHUPURI	S/C	0	207	0.0	3.7	-3.7
14		SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	132 kV	GARWAH-RIHAND	S/C	30	0	0.5	0.0	0.5
16	132 KV	KARMANASA-SAHUPURI	S/C	0	0	0.0	0.0	0.0
17		KARMANASA-CHANDAULI	S/C	0	0	0.0	0.0	0.0
					ER-NR	0.5	102.5	-102.0
Import/E	xport of	ER (With WR)						
18		JHARSUGUDA-DHARAMJAIGARH S/C	D/C	1460	0	25.3	0.0	25.3
19		NEW RANCHI-DHARAMJAIGARH	D/C	539	151	6.2	0.0	6.2
20		JHARSUGUDA-DURG	D/C	8	185	0.0	1.8	-1.8
21	400 kV	JHARSUGUDA-RAIGARH	Q/C	125	308	0.0	4.5	-4.5 0.5
22	-	RANCHI-SIPAT	D/C S/C	0	101 122	0.5	2.2	-2.2
24	220 kV	BUDHIPADAR-RAIGARH BUDHIPADAR-KORBA	D/C	127	10	1.0	0.0	1.0
24		BUDHIFADAR-KUKBA	D/C	127	ER-WR	33.0	8.5	24.5
Import/E	Export of	ER (With SR)				5510	o.c	2
25		ANGUL-SRIKAKULAM	D/C	0.0	1787.0	0.0	35.2	-35.2
26	HVDC	JEYPORE-GAZUWAKA B/B	D/C	0.0	691.0	0.0	16.1	-16.1
27	LINK	TALCHER-KOLAR BIPOLE	D/C	0.0	1585.0	0.0	35.2	-35.2
28	400 kV	TALCHER-I/C	D/C	676.0	136.0	4.6	0.0	4.6
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0	0.0	0.0	0.0
					ER-SR	0.0	86.5	-86.5
	export of	ER (With NER)	D /G	520	102	5.0	0.0	
30	400 kV	BINAGURI-BONGAIGAON ALIPURDUAR-BONGAIGAON	D/C D/C	538 626	102 114	5.9 8.5	0.0	6 8
32	220 kV	ALIPURDUAR-SALAKATI	D/C D/C	110	31	1.3	0.0	1
32	220 K Y	ALII OKDUAK-SALAKATI	D/C	110	ER-NER	15.7	0.0	15.7
Import/E	Export of	NER (With NR)						
33	HVDC	BISWANATH CHARIALI-AGRA	-	403	750	0.9	0.0	0.9
			1		NER-NR	0.9	0.0	0.9
-	Export of	WR (With NR)						
34	ĺ	CHAMPA-KURUKSHETRA	D/C	0	322	0.0	2.2	-2.2
34 35	ĺ	CHAMPA-KURUKSHETRA V'CHAL B/B	D/C	47	322	0.0	2.2	-2.2 3.5
34 35 36	ĺ	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG	D/C D/C	47 0	322 0 1545	0.0 3.5 0.0	2.2 0.0 38.2	-2.2 3.5 -38.2
34 35 36 37	ĺ	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	47 0 0	322 0 1545 2493	0.0 3.5 0.0 0.0	2.2 0.0 38.2 46.9	-2.2 3.5 -38.2 -46.9
34 35 36 37 38	ĺ	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR	D/C D/C D/C D/C	47 0 0 0	322 0 1545 2493 1240	0.0 3.5 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9	-2.2 3.5 -38.2 -46.9 -25.9
34 35 36 37 38 39	ĺ	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI	D/C D/C D/C D/C D/C D/C	47 0 0 0 0	322 0 1545 2493 1240 877	0.0 3.5 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6	-2.2 3.5 -38.2 -46.9 -25.9 -34.6
34 35 36 37 38 39 40	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI	D/C D/C D/C D/C D/C S/C	47 0 0 0 0 0 524	322 0 1545 2493 1240 877 0	0.0 3.5 0.0 0.0 0.0 0.0 10.7	2.2 0.0 38.2 46.9 25.9 34.6 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7
34 35 36 37 38 39	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI	D/C D/C D/C D/C D/C S/C S/C	47 0 0 0 0	322 0 1545 2493 1240 877	0.0 3.5 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6	-2.2 3.5 -38.2 -46.9 -25.9 -34.6
34 35 36 37 38 39 40 41	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI	D/C D/C D/C D/C D/C S/C	47 0 0 0 0 0 0 524	322 0 1545 2493 1240 877 0	0.0 3.5 0.0 0.0 0.0 0.0 10.7	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5
34 35 36 37 38 39 40 41 42	HVDC 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA	D/C D/C D/C D/C D/C S/C S/C D/C	47 0 0 0 0 0 524 0 98	322 0 1545 2493 1240 877 0 1366 696	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7
34 35 36 37 38 39 40 41 42 43	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI	D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C	47 0 0 0 0 0 524 0 98 158	322 0 1545 2493 1240 877 0 1366 696	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7
34 35 36 37 38 39 40 41 42 43	HVDC 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C	47 0 0 0 0 0 524 0 98 158 51	322 0 1545 2493 1240 877 0 1366 696 77	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2
34 35 36 37 38 39 40 41 42 43 44 45	HVDC 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C	47 0 0 0 0 524 0 98 158 51 489	322 0 1545 2493 1240 877 0 1366 696 77 170 0	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2
34 35 36 37 38 39 40 41 42 43 44 45	HVDC - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABAL-PUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA - BHINMAL VCHAL - RIHAND RAPP-SHUJALPUR	D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C D/C S/C S/C D/C S/C S/C D/C S/C S/C S/C S/C	47 0 0 0 0 524 0 98 158 51 489 52	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -2
34 35 36 37 38 39 40 41 42 43 44 45 46 47	HVDC 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-BANASKANTHA ZERDA-BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55	0.0 3.5 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0 2	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -2 -0.5
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	HVDC - 765 kV - 400 kV - 220 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0 11.2 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0 2 0.6 1.3 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -2 -0.5 -1.3 0.3 -0.4
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	HVDC - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-MOTA BHANPURA-MOTA BHANPURA-MORAK MEHGAON-AURAIYA	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5	0.0 3.5 0.0 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0 11.2 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0 2 0.6 1.3 0.0 0.4 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -2 -0.5 -1.3 0.3 -0.4 0.0
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	HVDC - 765 kV - 400 kV - 220 kV - 132kV	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATTNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA-BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0 11.2 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0 2 0.6 1.3 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -2 -0.5 -1.3 0.3 -0.4
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	HVDC - 765 kV - 400 kV - 220 kV - 132kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR)	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0 11.2 0 0.0 0.0 0.0 26.8	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0 2 0.6 1.3 0.0 0.0 1.4 0.0 1.5 1.6 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -2 -0.5 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/E	HVDC - 765 kV - 400 kV - 220 kV 132kV Export of HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI GWALIOR-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0 11.2 0 0.0 0.3 0.0 0.6 26.8	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 1.3 0.0 0.0 1.3 0.0 0.0 1.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 -1.2 -1.3 -0.3 -0.4 -0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/E 52 53	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of - HVDC - LINK	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA-BHINMAL VCHAL-RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0.0 11.2 0 0.0 0.0 0.0 2.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.0 2 0.0 1.3 0.0 0.0 1.3 0.0 0.0 1.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 -1.2 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54	HVDC - 765 kV - 400 kV - 220 kV 132kV Export of HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 11.2 0.0 0.0 0.0 0.3 0.0 0.2 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54 55	HVDC - 765 kV - 400 kV - 220 kV - 132kV Export of HVDC LINK - 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA-BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L-SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 11.2 0.0 11.2 0.0 0.0 26.8	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 -1.2 -0.5 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/E 52 53 54 55	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of - HVDC - LINK	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADBURA-MORAK BHADBURA-WAITB/B BARSUR-LSILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 11.2 0.0 0.0 0.0 0.3 0.0 0.2 0.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54 55	HVDC - 765 kV - 400 kV - 220 kV - 132kV Export of HVDC LINK - 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA-BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L-SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 31 7 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 11.2 0.0 11.2 0 0.0 0.0 26.8	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -0.5 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/E 52 53 54 55	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of HVDC LINK - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHASBUR-LSILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-KUDGI KOLHAPUR-KUDGI KOLHAPUR-CHIKODI	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C D/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 0 31 7 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR 992 0 2252 1824 0	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 11.2 0.0 11.2 0 0.0 0.0 26.8	2.2 0.0 38.2 46.9 25.9 34.6 0.0 29.5 4.7 0.0 1.2 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4 0.0	-2.2 3.5 -38.2 -46.9 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 11.2 -0.5 -1.3 0.3 -0.4 0.0 -150.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54 55 56 57 58	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of HVDC LINK - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-KOTA BHANPURA-WORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-CHIKODI PONDA-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C D/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 0 0 0 0 0 0 0 0 0 0 0 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR 992 0 0 2252 1824 0 0	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-2.2 3.5 -38.2 -38.2 -25.9 -34.6 10.7 -29.5 4.7 1.2 -11.2 -1.2 -1.3 -0.3 -0.4 -0.0 -150.9 -23.7 -26.3 -24.4 -7.0 -0.0 -0.0 -1.3
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54 55 56 57 58	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of HVDC LINK - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-KOTA BHANPURA-WORAK MEHGAON-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 0 0 0 0 0 0 0 0 0 0 0 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 11.2 0 0.0 0.3 0.0 0.0 26.8	2.2 0.0 38.2 46.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-2.2 3.5 -38.2 -38.2 -25.9 -34.6 10.7 -29.5 4.7 1.2 -1.2 -1.2 -1.3 -0.3 -0.4 -0.0 -150.9 -23.7 -26.3 -24.4 -7.0 -0.0 -0.0 -0.0
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54 55 56 57 58	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of HVDC LINK - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 0 0 0 0 0 0 0 0 0 0 0 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-2.2 3.5 -38.2 -38.2 -38.2 -25.9 -34.6 10.7 -29.5 4.7 1.2 -11.2 -1.2 -1.3 -0.3 -0.4 -0.0 -150.9 -23.7 -0.0 -26.3 -24.4 -7.0 -0.0 -0.0 -1.3 -66.2
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54 55 56 57 58	HVDC - 765 kV - 400 kV - 220 kV - 132kV - Export of HVDC LINK - 765 kV - 400 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-KOTA BHANPURA-KOTA BHANPURA-WORAK MEHGAON-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	47 0 0 0 0 524 0 98 158 51 489 52 24 0 0 0 0 0 0 0 0 0 0 0 0 0	322 0 1545 2493 1240 877 0 1366 696 77 170 0 268 55 81 5 39 0 WR-NR	0.0 3.5 0.0 0.0 0.0 0.0 10.7 0.0 0.0 1.2 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	2.2 0.0 38.2 46.9 34.6 0.0 29.5 4.7 0.0 2 0.6 1.3 0.0 0.4 0.0 187.1 23.7 0.0 26.3 24.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-2.2 3.5 -38.2 -38.2 -25.9 -34.6 10.7 -29.5 4.7 1.2 -11.2 -1.2 -1.3 -0.3 -0.4 -0.0 -150.9 -23.7 -26.3 -24.4 -7.0 -0.0 -0.0 -1.3