

# 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, कृतुब इन्स्टीट्यूशनल एरिया, कटवारिया सराये, न्यू दिल्ली-110016

Ref: POSOCO/NLDC/SO/Daily PSP Report

दिनांक: 21st July 2019

To,

- 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 20.07.2019.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 20-जुलाई-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 20<sup>th</sup> July 2019, is available at the NLDC website.

धन्यवाद,

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

#### Report for previous day Date of Reporting 21-Jul-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)	53529	49386	39760	21595	2795	167065
Peak Shortage (MW)	1383	0	0	0	196	1579
Energy Met (MU)	1277	1177	878	487	52	3871
Hydro Gen (MU)	340	32	42	117	29	560
Wind Gen (MU)	8	22	147			177
Solar Gen (MU)*	21.44	19.97	60.43	2.10	0.04	104
Energy Shortage (MU)	17.5	0.0	0.0	0.0	1.3	18.7
Maximum Demand Met during the day	57117	51352	39679	23359	2741	169195
(MW) & time (from NLDC SCADA)	22:21	14:35	19:45	23:30	19:57	21:28

B. Frequency Profile (%) Region All India FVI <49.7 49.7-49.8 49.8-49.9 49.9-50.05 0.040 24.64

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	9931	0	206.0	127.1	-2.1	50	0.0
	Harvana	8248	0	177.1	141.7	-0.7	321	1.9
	Rajasthan	11053	0	244.3	66.3	2.2	621	0.0
	Delhi	5508	0	111.1	95.0	-0.3	170	0.0
NR	UP	19005	1420	415.0	190.8	0.9	907	5.2
	Uttarakhand	2081	0	44.6	19.0	0.6	149	0.1
	HP	1460	0	30.3	-1.5	0.6	193	0.0
	J&K	2144	536	43.1	20.1	2.6	364	10.2
	Chandigarh	263	0	5.5	6.0	-0.5	10	0.0
	Chhattisgarh	4596	0	101.8	38.4	-0.5	311	0.0
	Gujarat	17577	0	387.4	112.7	5.3	518	0.0
	MP	9629	0	213.6	106.7	0.0	941	0.0
WR	Maharashtra	19185	0	430.9	117.9	-1.2	577	0.0
WK	Goa	541	0	11.4	10.7	0.2	113	0.0
	DD	341	0	7.7	7.1	0.7	55	0.0
	DNH	810	0	18.9	18.6	0.3	116	0.0
	Essar steel	289	0	5.4	5.5	-0.1	262	0.0
	Andhra Pradesh	7396	0	165.5	18.2	0.6	448	0.0
	Telangana	7904	0	165.9	80.9	0.6	626	0.0
SR	Karnataka	9561	0	186.6	66.6	0.9	564	0.0
311	Kerala	3004	0	60.5	42.0	1.9	300	0.0
	Tamil Nadu	13907	0	291.4	119.1	0.2	698	0.0
	Pondy	373	0	7.9	8.4	-0.5	40	0.0
	Bihar	5391	0	105.8	102.5	-1.4	500	0.0
	DVC	2980	0	67.6	-43.0	-0.1	150	0.0
ER	Jharkhand	1183	0	26.9	18.1	-0.5	100	0.0
	Odisha	4613	0	95.5	35.7	5.5	550	0.0
	West Bengal	9450	0	190.0	90.5	2.0	350	0.0
	Sikkim	78	0	1.2	1.1	0.1	18	0.0
	Arunachal Pradesh	140	1	2.2	3.1	-0.9	20	0.0
	Assam	1748	156	33.0	26.6	0.6	100	1.1
	Manipur	180	2	2.5	2.4	0.1	32	0.0
NER	Meghalaya	326	0	5.7	-1.2	0.0	43	0.0
	Mizoram	93	1	1.5	1.0	0.2	17	0.0
	Nagaland	128	2	2.3	2.1	0.0	19	0.0
	Tripura	297	11	5.0	4.7	-0.2	40	0.1

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	34.9	-2.0	-25.9
Day peak (MW)	1703.2	-223.0	-1136.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	259.7	-215.8	7.7	-40.7	-11.2	-0.2
Actual(MU)	274.7	-217.6	21.1	-64.7	-14.1	-0.5
O/D/U/D(MU)	15.0	-1.8	13.4	-24.0	-2.9	-0.3

F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	4589	16505	7572	2550	47	31262
State Sector	7255	13539	8380	4460	50	33684
Total	11844	30044	15952	7010	96	64946

G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	563	1193	477	446	15	2693
Lignite	22	14	44	0	0	79
Hydro	340	32	42	117	29	560
Nuclear	27	31	60	0	0	119
Gas, Naptha & Diesel	26	82	11	0	29	147
RES (Wind, Solar, Biomass & Others)	46	45	248	2	0	341
Total	1025	1396	881	564	72	3939

Share of RES in total generation (%)	4.46	3.22	28.13	0.38	0.06	8.65
Share of Non-fossil fuel (Hydro, Nuclear and	40.33	7.72	39.76	21.05	40.22	25.89
RES) in total generation (%)	40.55	1.13	39.70	21.05	40.22	25.09

H. Diversity Factor
All India Demand Diversity Factor

<sup>\*</sup>Source: RLDCs for solar connected to ISTS; SLDCs for embedded solar. Limited visibility of embedded solar data.

l		INI	ER-REGI	ONAL EXCH	ANGES	Date of 1	Reporting	: 21-Jul-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)
	Export of	ER (With NR)	1					1
2	765kV	GAYA-VARANASI SASARAM-FATEHPUR	D/C S/C	212	347 0	0.0 2.5	5.9 0.0	-5.9 2.5
3	7001	GAYA-BALIA	S/C	0	374	0.0	7.6	-7.6
4	HVDC	ALIPURDUAR-AGRA	-	0	1801	0.0	41.0	-41.0
5	пуве	PUSAULI B/B	S/C	0	249	0.0	6.3	-6.3
6 7	4	PUSAULI-VARANASI	S/C	0	212	0.0	5.0	-5.0 -1.3
8		PUSAULI -ALLAHABAD MUZAFFARPUR-GORAKHPUR	S/C D/C	5	85 447	0.0	7.8	-1.3 -7.8
9	400 kV	PATNA-BALIA	Q/C	0	632	0.0	13.0	-13.0
10	1	BIHARSHARIFF-BALIA	D/C	0	244	0.0	4.5	-4.5
11		MOTIHARI-GORAKHPUR	D/C	0	331	0.0	6.7	-6.7
12		BIHARSHARIFF-VARANASI	D/C	86	103	0.0	0.1	-0.1
13	220 kV	PUSAULI-SAHUPURI	S/C	0	176	0.0	3.3	-3.3
14		SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	132 kV	GARWAH-RIHAND	S/C	30	0	0.6	0.0	0.6
16	4	KARMANASA-SAHUPURI	S/C	0	0	0.0	0.0	0.0
17		KARMANASA-CHANDAULI	S/C	0	0 ER-NR	0.0	0.0	0.0
Import/F	Export of	ER (With WR)			ER-NK	3.1	102.4	-99.4
_	Saport OI		0.75	100-	150		0.0	
18	765 kV	JHARSUGUDA-DHARAMJAIGARH	Q/C	1225	178	5.9	0.0	5.9
19 20	- 00 RV	NEW RANCHI-DHARAMJAIGARH	D/C	1408	0	26.6	0.0	26.6
20		JHARSUGUDA-DURG JHARSUGUDA-RAIGARH	D/C Q/C	937	20 69	2.5 16.0	0.0	2.5 16.0
22	400 kV	RANCHI-SIPAT	D/C	465	0	7.9	0.0	7.9
23	220 kV	BUDHIPADAR-RAIGARH	S/C	29	32	0.0	0.0	0.0
24	220 KV	BUDHIPADAR-KORBA	D/C	138	0	2.1	0.0	2.1
					ER-WR	61.1	0.0	61.0
		ER (With SR)						1
25	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	1414.0	0.0	15.8	-15.8
26	HVDC LINK	JEYPORE-GAZUWAKA B/B	D/C	0.0	327.0	0.0	7.5	-7.5
27 28	1	TALCHER-KOLAR BIPOLE TALCHER-I/C	D/C D/C	0.0 1067.0	1285.0 0.0	0.0 18.9	0.0	-22.2 18.9
29	400 kV 220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0	0.0	0.0	0.0
- 27	220 K	BALIMELA OFFER SILLARO	5/-C	1.0	ER-SR	0.0	45.5	-45.5
Import/F	Export of	ER (With NER)			-			
30	400 kV	BINAGURI-BONGAIGAON	D/C	0	758	0.0	11.5	-11
31	400 KV	ALIPURDUAR-BONGAIGAON	D/C	480	103	5.5	0.0	6
32	220 kV	ALIPURDUAR-SALAKATI	D/C	0	97	0.0	0.9	-1
					ER-NER	5.5	12.4	-6.9
		NER (With NR)	1 1	1002	1 0 1	0.0	22.5	1 22.5
33	HVDC	BISWANATH CHARIALI-AGRA	-	1003	0	0.0	23.5	-23.5 -23.5
					NED ND			-43.5
- import/F	Export of	WR (With NR)			NER-NR	0.0	23.5	1
	Export of	WR (With NR)	D/C	0				
34		CHAMPA-KURUKSHETRA	D/C D/C	0 449	1503 0	0.0	27.3	-27.3
			D/C D/C D/C		1503			
34 35		CHAMPA-KURUKSHETRA V'CHAL B/B	D/C	449	1503	0.0 7.3	27.3 0.0	-27.3 7.3
34 35 36		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG	D/C D/C	449	1503 0 1171	0.0 7.3 0.0	27.3 0.0 28.6	-27.3 7.3 -28.6
34 35 36 37 38 39	HVDC	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	0 0 0 0 0	1503 0 1171 2505 1341 1032	0.0 7.3 0.0 0.0 0.0 0.0	27.3 0.0 28.6 46.6 23.3 40.4	-27.3 7.3 -28.6 -46.6 -23.3 -40.4
34 35 36 37 38 39 40		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI	D/C D/C D/C D/C D/C S/C	0 0 0 0 0 0 531	1503 0 1171 2505 1341 1032 0	0.0 7.3 0.0 0.0 0.0 0.0 0.0	27.3 0.0 28.6 46.6 23.3 40.4 0.0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7
34 35 36 37 38 39 40 41	HVDC	CHAMPA-KURUKSHETRA V'CHAL 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	0 0 0 0 0 0 531	1503 0 1171 2505 1341 1032 0 1356	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6
34 35 36 37 38 39 40 41 42	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA	D/C D/C D/C D/C D/C S/C S/C D/C	449 0 0 0 0 0 531 0 329	1503 0 1171 2505 1341 1032 0 1356 497	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5
34 35 36 37 38 39 40 41 42 43	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI	D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C	449 0 0 0 0 0 531 0 329 146	1503 0 1171 2505 1341 1032 0 1356 497 65	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4
34 35 36 37 38 39 40 41 42 43 44	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL	D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C	449 0 0 0 0 531 0 329 146 151	1503 0 1171 2505 1341 1032 0 1356 497 65 168	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3
34 35 36 37 38 39 40 41 42 43 44 45	HVDC - 765 kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND	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	449 0 0 0 0 0 531 0 329 146 151 965	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2
34 35 36 37 38 39 40 41 42 43 44 45	HVDC - 765 kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR	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	449 0 0 0 0 531 0 329 146 151 965 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3
34 35 36 37 38 39 40 41 42 43 44 45	HVDC - 765 kV - 400 kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND	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	449 0 0 0 0 0 531 0 329 146 151 965	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2
34 35 36 37 38 39 40 41 42 43 44 45 46 47	HVDC - 765 kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR	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	449 0 0 0 0 531 0 329 146 151 965 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47	HVDC - 765 kV - 400 kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-KANKROLI ZERDA-SHIIMMAL V'CHAL-RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK	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	449 0 0 0 0 531 0 329 146 151 965 0 10	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	HVDC - 765 kV - 400 kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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	449 0 0 0 0 531 0 329 146 151 965 0 10 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.0	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9 1.9	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8
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 V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR	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	449 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.0 0.0 0.8 0.1	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 1.9 0.0 0.2	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1
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 V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATTA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.0 2.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/F 52	HVDC  765 kV  400 kV  220 kV  132kV  Export of HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.2 0.2 0.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/F 52 53	HVDC - 765 kV - 400 kV - 220 kV - 132kV	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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	449 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.0 20.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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 V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA - BHINMAL V'CHAL - RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.0 20.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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 V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.0 20.3.8	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-BHINMAL V'CHAL-RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  WR (With SR) BHASSUR-L-SILERU 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 S/C S/C D/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	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR 806 0 882 1975 0	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.0 203.8 0.0 0.0 1.9 0.0 1.9 0.0 1.9 0.0 1.9 0.0 1.9 0.0 1.9 0.0 1.9 0.0 0.0 1.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.2 0.9 0.0 3 0.9 1.9 0.0 0.2 0.0 20.3.8	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHASPUR-LSILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI 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 S/C D/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	449 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 1112 0 29 0 WR-NR 806 0 882 1975 0	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 0.0 0.0 20.8 0.0 0.0 20.8 0.0 0.0 1.9 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-27.3 7.3 7.3 -28.6 -46.6 -43.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK 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 D/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 S/C S/C S/C S/C S/C S/C S/C S	449 0 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0 0 192 0 986 193 1049 0 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 1112 0 29 0 WR-NR 806 0 882 1975 0	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 0.0 0.0 203.8 0.0 0.0 203.8	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK 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 XELDEM-AMBEWADI	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	449 0 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0 0 192 0 986 193 1049 0 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 1112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 0.0 0.2 0.0 203.8 0.0 0.0 203.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-WARIAYA MALANPUR-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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	449 0 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0 0 192 0 986 193 1049 0 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 1112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 0.0 0.2 0.0 203.8 0.0 0.0 203.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-27.3 7.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1  0.0 0.0 4.6 -18.8 17.4 0.0 -1.2 0.8 2.8
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	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK 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 XELDEM-AMBEWADI	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	449 0 0 0 0 0 0 531 0 329 146 151 965 0 10 0 79 36 0 0 192 0 986 193 1049 0 0	1503 0 1171 2505 1341 1032 0 1356 497 65 168 0 425 77 1112 0 29 0 WR-NR	0.0 7.3 0.0 0.0 0.0 0.0 0.0 10.7 0.0 2.7 1.6 1.2 22.2 0 0.0 0.0 0.8 0.1 0.0 46.6	27.3 0.0 28.6 46.6 23.3 40.4 0.0 28.6 2.2 0.9 0.0 3 0.9 0.0 0.2 0.0 203.8 0.0 0.0 203.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-27.3 7.3 -28.6 -46.6 -23.3 -40.4 10.7 -28.6 0.5 1.4 0.3 22.2 -3 -0.9 -1.9 0.8 -0.1 0.0 -157.1