

National Load Despatch Centre राष्ट्रीय भार प्रेषण केंद्र

POWER SYSTEM OPERATION CORPORATION LIMITED पाँवर 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: 24th Oct 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. कार्यकारी निदेशक, ऊ. पू. क्षे. भा. प्रे. के., डोंगतिएह, लोअर नोंग्रह, लापलंग, शिलोंग – 793006 Executive Director, NERLDC, Dongteih, Lower Nongrah, Lapalang, Shillong - 793006, Meghalaya

5. कार्यकारी निदेशक , द .क्षे .भा .प्रे .के.,२९ , रेस कोर्स क्रॉस रोड, बंगलुरु –५६०००९ Executive Director, SRLDC, 29, Race Course Cross Road, Bangalore-560009

Sub: Daily PSP Report for the date 23.10.2019.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-२०१० की धारा स.-5.5.१ के प्रावधान के अनुसार, दिनांक २३-अक्टूबर-२०१९ 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 23rd Oct 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 24-Oct-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 1900 hrs; from RLDCs)	43932	45515	35538	19221	2524	146730
Peak Shortage (MW)	495	0	0	0	88	583
Energy Met (MU)	932	1009	773	396	45	3155
Hydro Gen (MU)	154	57	146	84	11	454
Wind Gen (MU)	5	31	42			78
Solar Gen (MU)*	29.97	17.37	58.66	1.87	0.04	108
Energy Shortage (MU)	11.3	0.0	0.0	0.0	0.7	12.1
Maximum Demand Met during the day	46595	46539	37040	19794	2733	151999
(MW) & time (from NLDC SCADA)	18:53	18:29	18:50	18:10	17:59	18:53

B. Frequency Profile (%) Region All India FVI <49.7 49.7-49.8 49.8-49.9 <49.9 49.9-50.05 > 50.05 0.030 0.00

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	6015	0	124.5	64.4	-1.5	32	0.0
	Haryana	6685	0	137.0	114.9	0.2	116	0.0
NR	Rajasthan	10021	0	200.6	61.5	-0.9	440	0.0
	Delhi	3782	0	74.2	59.8	-1.4	166	0.0
	UP	14964	0	286.8	126.6	5.2	812	1.3
	Uttarakhand	1760	0	34.8	19.3	0.6	282	0.0
	HP	1542	0	27.8	16.1	0.5	124	0.0
	J&K	2120	530	42.3	34.2	-0.7	225	10.0
	Chandigarh	205	0	3.7	3.7	0.0	15	0.0
	Chhattisgarh	3454	0	75.7	24.6	-1.1	157	0.0
	Gujarat	15298	0	337.8	76.5	1.4	440	0.0
	MP	7855	0	164.3	105.8	-2.8	340	0.0
WR	Maharashtra	18125	0	387.9	133.9	-2.5	600	0.0
WK	Goa	541	0	11.5	10.7	0.2	57	0.0
	DD	342	0	7.6	7.0	0.6	49	0.0
	DNH	781	0	18.3	18.2	0.1	95	0.0
	Essar steel	319	0	6.2	6.2	0.0	256	0.0
	Andhra Pradesh	6931	0	144.4	53.3	-1.1	505	0.0
	Telangana	7029	0	146.2	43.8	-1.7	408	0.0
SR	Karnataka	7658	0	147.4	30.6	-2.1	571	0.0
3N	Kerala	3369	0	65.6	48.6	0.6	166	0.0
	Tamil Nadu	12883	0	262.0	134.7	-4.0	543	0.0
	Pondy	377	0	7.3	7.9	-0.6	52	0.0
	Bihar	4411	0	80.2	79.0	-1.1	100	0.0
	DVC	3000	0	61.7	-22.0	0.4	240	0.0
ER	Jharkhand	1051	0	23.6	19.0	-1.3	50	0.0
LIX	Odisha	3885	0	79.8	10.9	8.3	450	0.0
	West Bengal	7659	0	149.6	58.8	1.1	200	0.0
	Sikkim	100	0	1.1	1.6	-0.5	10	0.0
	Arunachal Pradesh	118	1	2,2	2.1	-0.1	17	0.0
	Assam	1661	53	26.7	22.1	-0.4	131	0.6
	Manipur	174	2	2.7	2.4	0.3	23	0.0
NER	Meghalaya	330	0	5.9	2.6	0.2	46	0.0
	Mizoram	97	2	1.7	0.4	0.6	22	0.0
	Nagaland	127	2	2.1	2.2	-0.3	3	0.0
	Tripura	279	0	3.8	3.8	0.1	68	0.0

$\textbf{D. Transnational Exchanges} \ \ (\textbf{MU}) \textbf{-Import} (+\textbf{ve}) / \textbf{Export} (-\textbf{ve})$

	Bhutan	Nepal	Bangladesh
Actual(MU)	22.6	-1.4	-26.2
Day peak (MW)	1071.0	-202.4	-1122.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	239.6	-224.6	40.5	-61.6	5.9	-0.1
Actual(MU)	236.5	-232.6	31.1	-41.4	7.8	1.4
O/D/U/D(MU)	-3.1	-8.0	-9.4	20.3	1.8	1.6

F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	3005	16316	7552	2630	660	30163
State Sector	10851	18681	12223	6060	11	47826
Total	13856	34997	19775	8690	672	77989

G. Sourcewise generation (MU)

NR	WR	SR	ER	NER	All India
453	1013	349	383	11	2209
16	16	51	0	0	83
154	57	147	84	11	454
27	29	60	0	0	115
25	70	16	0	23	134
43	53	129	2	0	227
719	1238	751	469	45	3220
	453 16 154 27 25 43	453 1013 16 16 154 57 27 29 25 70 43 53	453 1013 349 16 16 51 154 57 147 27 29 60 25 70 16 43 53 129	453 1013 349 383 16 16 51 0 154 57 147 84 27 29 60 0 25 70 16 0 43 53 129 2	453 1013 349 383 11 16 16 51 0 0 154 57 147 84 11 27 29 60 0 0 25 70 16 0 23 43 53 129 2 0

Share of RES in total generation (%)	6.00	4.28	17.13	0.40	0.09	7.04
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	31.18	11.23	44.59	18.38	25.70	24.70

H. Diversity Factor All India Demand Diversity Factor

1.005 Diversity factor = Sum of regional maximum demands / All India maximum demand

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

		IN	TER-REGIO	ONAL EXCHA	ANGES	Date of 1	Reporting :	24-Oct-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	417	0.0	5.4	-5.4
3	765kV	SASARAM-FATEHPUR GAYA-BALIA	S/C S/C	164 0	141 326	0.5	6.4	0.5 -6.4
4	HVDC	ALIPURDUAR-AGRA	-	0	500	0.0	11.9	-11.9
5	HVDC	PUSAULI B/B	S/C	0	198	0.0	4.9	-4.9
6		PUSAULI-VARANASI	S/C	0	190	0.0	3.8	-3.8
7	4	PUSAULI -ALLAHABAD	S/C	0	93	0.0	0.9	-0.9
9	400 kV	MUZAFFARPUR-GORAKHPUR	D/C	51 0	575	0.0	6.5	-6.5
10	400 KV	PATNA-BALIA BIHARSHARIFF-BALIA	Q/C D/C	0	988 232	0.0	16.4 2.8	-16.4 -2.8
11	1	MOTIHARI-GORAKHPUR	D/C	0	8	0.0	0.0	0.0
12	1	BIHARSHARIFF-VARANASI	D/C	182	119	1.2	0.0	1.2
13	220 kV	PUSAULI-SAHUPURI	S/C	2	119	0.0	2.1	-2.1
14		SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	132 kV	GARWAH-RIHAND	S/C	30	0	0.3	0.0	0.3
16	102111	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
Innr -: 4/*	F *	ED (With WP)			ER-NR	2.0	61.1	-59.0
	export of	ER (With WR)						1
18	765 1.37	JHARSUGUDA-DHARAMJAIGARH	Q/C	1240	0	18.0	0.0	18.0
19	765 kV	NEW RANCHI-DHARAMJAIGARH	D/C	1255	0	16.6	0.0	16.6
20	1	JHARSUGUDA-DURG JHARSUGUDA-RAIGARH	D/C	179 197	74 223	1.6 0.9	0.0	1.6 0.9
21	400 kV	JHARSUGUDA-RAIGARH RANCHI-SIPAT	Q/C D/C	426	0	7.1	0.0	7.1
23		BUDHIPADAR-RAIGARH	S/C	10	67	0.0	0.6	-0.6
24	220 kV	BUDHIPADAR-KORBA	D/C	156	0	2.5	0.0	2.5
		Bedim i Bilk Rokbii	D, C	150	ER-WR		0.6	46.0
Import/F	Export of	ER (With SR)						
25	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	1453.0	0.0	19.4	-19.4
26	HVDC	JEYPORE-GAZUWAKA B/B	D/C	0.0	504.0	0.0	10.8	-10.8
27	LINK	TALCHER-KOLAR BIPOLE	D/C	0.0	1188.0	0.0	21.0	-21.0
28	400 kV	TALCHER-I/C	D/C	887.0	0.0	9.8	0.0	9.8
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0	0.0	0.0	0.0
Immout/E	Ermont of	ER (With NER)			ER-SR	0.0	51.2	-51.2
30	Export of	BINAGURI-BONGAIGAON	D/C	0	467	0.0	6.2	-6
31	400 kV	ALIPURDUAR-BONGAIGAON	D/C	0	341	0.0	3.8	-4
32	220 kV	ALIPURDUAR-SALAKATI	D/C	0	112	0.0	1.5	-2
					ER-NER	0.0	11.5	-11.5
Import/E	Export of	NER (With NR)						
33	HVDC	BISWANATH CHARIALI-AGRA	-	0	304	0.0	5.2	-5.2
		WD (WALNE)			NER-NR	0.0	5.2	-5.2
v	Export of							
	T		D/G		751	0.0	160	160
34		CHAMPA-KURUKSHETRA	D/C	0	751	0.0	16.9	-16.9
34 35	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B	D/C	293	3	7.1	0.0	7.1
		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG			_			
34 35 36		CHAMPA-KURUKSHETRA V'CHAL B/B	D/C D/C	293 0	3 1462	7.1 0.0	0.0 33.9	7.1 -33.9
34 35 36 37	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	293 0 0	3 1462 2404	7.1 0.0 0.0	0.0 33.9 48.0	7.1 -33.9 -48.0
34 35 36 37 38		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR	D/C D/C D/C D/C	293 0 0 0	3 1462 2404 1271	7.1 0.0 0.0 0.0	0.0 33.9 48.0 25.7	7.1 -33.9 -48.0 -25.7
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	293 0 0 0 0	3 1462 2404 1271 821	7.1 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4	7.1 -33.9 -48.0 -25.7 -34.4
34 35 36 37 38 39 40	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	293 0 0 0 0 0 470	3 1462 2404 1271 821	7.1 0.0 0.0 0.0 0.0 0.0 8.3	0.0 33.9 48.0 25.7 34.4 0.0	7.1 -33.9 -48.0 -25.7 -34.4 8.3
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	293 0 0 0 0 0 470 0 0 14	3 1462 2404 1271 821 0 1444 806 94	7.1 0.0 0.0 0.0 0.0 0.0 8.3 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8
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 CHITTORGARH-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 S/C S/C	293 0 0 0 0 470 0 0 14 0	3 1462 2404 1271 821 0 1444 806 94 258	7.1 0.0 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5
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 CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -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 S/C	293 0 0 0 0 470 0 0 14 0 971	3 1462 2404 1271 821 0 1444 806 94 258	7.1 0.0 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -111.0 -0.8 -3.5
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	293 0 0 0 0 470 0 0 14 0 971 39	3 1462 2404 1271 821 0 1444 806 94 258 0	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 0.0 19.1	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1
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	293 0 0 0 0 470 0 0 14 0 971 39 19	3 1462 2404 1271 821 0 1444 806 94 258 0 226	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 0.0 19.1 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2	7.1 -33.9 -48.0 -25.7 -34.4 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5
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 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	293 0 0 0 0 470 0 0 14 0 971 39 19 0	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5 -1.0
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	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	293 0 0 0 0 470 0 14 0 971 39 19 0 38	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5 -1.0 0.1
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 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	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	293 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	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	293 0 0 0 0 470 0 14 0 971 39 19 0 38	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 19.1 0 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5 -1.0 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 SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-BHINMAL V'CHAL-RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-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	293 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 19.1 0 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5 -1.0 0.1 -0.6 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 SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR 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	293 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 19.1 0 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5 -1.0 0.1 -0.6 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 CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR 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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	293 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3	3 1462 2404 1271 821 0 1444 8006 94 258 0 226 41 79 28 51 0	7.1 0.0 0.0 0.0 0.0 8.3 0.0 0.0 0.0 19.1 0 0.0 0.0 0.0 0.0 19.1 0 0.0 0.0 0.0 19.1 0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0	7.1 -33.9 -48.0 -25.7 -34.4 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-JURAIYA 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	293 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51 0	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 2 20.5 1.0 0.0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -2.5 -2.0 -2.5 -2.5 -2.5 -2.5 -2.5 -2.5 -2.5 -2.5
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 S1 S2 S3 S3 S4 S5 S5 S5 S5 S5 S5 S5 S5 S5 S5	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 CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -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	293 0 0 0 0 0 470 0 14 0 971 39 19 0 38 3 0	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 2 0.5 1.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	7.1 -33.9 -48.0 -25.7 -34.4 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0
34 35 36 37 38 39 40 41 42 43 44 45 50 51 Import/F 52 53 54 55 56	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) BHASPUR-LSILIERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-RUDGI	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	293 0 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3 0 195 0 856	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 2.5 0.0 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.1 -33.9 -48.0 -25.7 -34.4 8.3 -31.6 -11.0 -0.8 -3.5 19.1 -2 -0.5 -1.0 0.1 -0.6 0.0 -175.0
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	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATINA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BHASWATI B/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 D/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	293 0 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3 0 195 0 856 0	3 1462 2404 1271 821 0 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR 312 0 1116 1950 0 0	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 0.3 1.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -0.0 -0.2 -2.7 -1.3.7 -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 LINK - 765 kV	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-WARAI 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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	293 0 0 0 0 470 0 14 0 971 39 19 0 38 3 0 195 0 856 0 956	3 1462 2404 1271 821 0 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR 312 0 0 1116 1950 0 0 63	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 0.0 1.7 2.7 0.0 0.0 1.7 0.0 0.0 1.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -0.0 -12.1
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	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATINA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BHASWATI B/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 D/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	293 0 0 0 0 0 470 0 0 14 0 971 39 19 0 38 3 0 195 0 856 0	3 1462 2404 1271 821 0 1444 8006 94 258 0 226 41 79 28 51 0 WR-NR 312 0 1116 11550 0 0 63 36	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 5.7 2.7 0.0 0.0 1.2 0.0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -0.0 -0.2 -22.7 -13.7 -0.0 -1.2 -0.7
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 [mport/F] 52 53 54 55 56 57 58	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-WARAK 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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	293 0 0 0 0 0 470 0 14 0 971 39 19 0 38 3 0 195 0 856 0 0 0 0	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 0.0 1.7 2.7 0.0 0.0 1.7 0.0 0.0 1.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -0.0 -0.2 -22.7 -13.7 -0.0 -1.2
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 51 52 53 54 55 56 57 58 59	HVDC	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA-BHINMAL VCHAL-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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	293 0 0 0 0 470 0 14 0 971 39 19 0 38 3 0 195 0 856 0 956	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 5.7 2.7 0.0 0.0 1.2 0.0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -0.0 -0.2 -22.7 -13.7 -0.0 -1.2 -1.2 -1.2
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	CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-WARAK 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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	293 0 0 0 0 0 470 0 14 0 971 39 19 0 38 3 0 195 0 856 0 0 0 0	3 1462 2404 1271 821 0 1444 806 94 258 0 226 41 79 28 51 0 WR-NR	7.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 33.9 48.0 25.7 34.4 0.0 31.6 11.0 0.8 3.5 0.0 2 0.5 1.0 0.1 0.6 0.0 209.7 2.5 0.0 5.7 2.7 0.0 0.0 1.2 0.0	7.1 -33.9 -48.0 -25.7 -34.4 -8.3 -31.6 -11.0 -0.8 -3.5 -19.1 -2 -0.5 -1.0 -0.1 -0.6 -0.0 -175.0 -2.5 -0.0 -0.2 -22.7 -13.7 -0.0 -1.2 -0.7