

## 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: 21st Jan 2020

To,

- 1. कार्यकारी निदेशक, पू.क्षे.भा.प्रे.के.,14, गोल्फ क्लब रोड, कोलकाता ७०००३३ 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 20.01.2020.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 20-जनवरी-2020 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> Jan 2020, 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-Jan-20

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)	48526	47898	39737	18105	2439	156705
Peak Shortage (MW)	640	0	0	0	28	668
Energy Met (MU)	952	1128	986	351	41	3459
Hydro Gen (MU)	132	45	86	37	7	309
Wind Gen (MU)	6	47	38			90
Solar Gen (MU)*	23.10	24.20	86.88	1.52	0.03	136
Energy Shortage (MU)	13.3	0.0	0.0	0.0	0.9	14.2
Maximum Demand Met during the day (MW) & time	48718	54730	46940	18351	2467	166529
(from NLDC SCADA)	19:00	11:01	08:11	18:44	18:00	09:45

B. Frequency Profile (%)

Region	FVI	<49.7	49.7-49.8	49.8-49.9	<49.9	49.9-50.05	> 50.05
All India	0.035	0.00	0.24	6.00	6.24	75.53	18.23

C. Power Supply Position in States

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	5706	0	105.1	53.1	-1.0	39	0.0
	Haryana	6668	0	126.4	87.5	0.7	258	0.0
	Rajasthan	13279	0	234.2	76.8	0.2	313	0.0
	Delhi	4548	0	77.7	60.8	0.4	265	0.0
NR	UP	16017	0	281.2	121.9	0.2	672	1.2
	Uttarakhand	2166	0	40.0	21.6	1.0	209	0.0
	HP	1759	0	32.2	23.0	1.7	275	0.0
	J&K(UT) and Ladakh(UT)	2573	643	51.0	42.5	0.3	302	12.1
	Chandigarh	272	0	4.5	4.4	0.1	52	0.0
	Chhattisgarh	3593	0	78.7	26.3	-1.0	160	0.0
	Gujarat	15607	0	324.8	79.3	4.4	680	0.0
	MP	13149	0	235.9	142.4	-3.4	353	0.0
WR	Maharashtra	22251	0	445.9	145.4	-0.7	434	0.0
WK	Goa	504	0	9.9	9.8	-0.2	34	0.0
	DD	320	0	7.0	6.6	0.4	37	0.0
	DNH	794	0	18.3	18.0	0.3	55	0.0
	Essar steel	407	0	7.8	7.4	0.4	275	0.0
	Andhra Pradesh	8978	0	177.3	63.5	0.5	504	0.0
	Telangana	10871	0	211.8	104.4	0.6	461	0.0
SR	Karnataka	12531	0	233.6	64.7	0.0	573	0.0
311	Kerala	3746	0	73.3	56.0	1.8	599	0.0
	Tamil Nadu	13978	0	283.0	157.1	1.0	491	0.0
	Pondy	353	0	6.9	7.1	-0.2	29	0.0
	Bihar	4519	0	78.2	75.5	0.9	300	0.0
	DVC	3090	0	64.6	-36.7	0.5	300	0.0
ER	Jharkhand	1308	0	25.3	16.1	0.1	150	0.0
EN	Odisha	3656	0	69.0	2.9	-0.3	350	0.0
	West Bengal	6314	0	112.2	20.3	0.4	250	0.0
	Sikkim	126	0	1.8	1.7	0.1	30	0.0
	Arunachal Pradesh	115	1	2.4	2.1	0.1	21	0.0
	Assam	1331	10	21.5	18.6	0.4	118	0.5
	Manipur	205	2	2.8	3.0	-0.2	42	0.0
NER	Meghalaya	380	0	6.5	3.6	0.8	75	0.3
	Mizoram	117	1	1.9	1.5	0.0	14	0.0
	Nagaland	126	1	2.3	2.0	0.1	31	0.0
	Tripura	223	0	3.5	1.8	-0.4	25	0.0

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	4.8	-9.3	-10.1
Day peak (MW)	466.4	-522.0	-762.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	236.8	-242.4	114.5	-112.3	3.3	0.0
Actual(MU)	227.8	-256.0	126.2	-104.9	3.5	-3.4
O/D/U/D(MU)	-9.0	-13.6	11.7	7.4	0.2	-3.5

F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	5816	15058	7422	1710	588	30594
State Sector	11575	16942	7310	4660	11	40498
Total	17391	31999	14732	6370	600	71092

G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	464	1183	495	450	13	2605
Lignite	22	15	49	0	0	86
Hydro	132	45	86	37	7	309
Nuclear	25	19	40	0	0	83
Gas, Naptha & Diesel	33	39	17	0	22	111
RES (Wind, Solar, Biomass & Others)	58	82	170	2	0	312
Total	735	1383	857	489	42	3505

Share of RES in total generation (%)	7.94	5.94	19.83	0.32	0.07	8.90
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	29.34	10.57	34.49	7.99	17.04	20.07

H. All India Demand Diversity Factor

Based on Regional Max Demands	1.028	
Based on State Max Demands	1.090	

Diversity factor = Sum of regional or state-wise maximum demands / All India maximum demand

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

		<u>IN'</u>	FER-REGI	ONAL EXCH	ANGES	Date of 1	Reporting :	21-Jan-20
								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)
		ER (With NR)						
5	HVDC	ALIPURDUAR-AGRA PUSAULI B/B	S/C	0	0 299	0.0	7.3	0.0 -7.3
1		GAYA-VARANASI	D/C	0	909	0.0	11.7	-11.7
2	765kV	SASARAM-FATEHPUR	S/C	0	451	0.0	5.8	-5.8
3		GAYA-BALIA	S/C	0	620	0.0	8.8	-8.8
6 7		PUSAULI-VARANASI PUSAULI -ALLAHABAD	S/C S/C	0	211 168	0.0	2.9	-4.2 -2.9
8	_	MUZAFFARPUR-GORAKHPUR	D/C	0	922	0.0	11.5	-11.5
9	400 kV	PATNA-BALIA	Q/C	0	1038	0.0	17.0	-17.0
10		BIHARSHARIFF-BALIA	D/C	0	509	0.0	6.5	-6.5
11		MOTIHARI-GORAKHPUR	D/C	0	4	0.0	0.0	0.0
12	220 kV	BIHARSHARIFF-VARANASI PUSAULI-SAHUPURI	D/C S/C	14 5	460 133	0.0	1.6	-4.8 -1.6
14	220 KV	SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	12217	GARWAH-RIHAND	S/C	30	0	0.7	0.0	0.7
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
Import/F	Evnout -P	ED (With WP)			ER-NR	0.7	74.8	-74.1
-	APOUT OF	ER (With WR)					0.0	
18	765 kV	JHARSUGUDA-DHARAMJAIGARH	Q/C	1279	0	19.4	0.0	19.4
19 20		NEW RANCHI-DHARAMJAIGARH JHARSUGUDA-DURG	D/C D/C	480 154	267 332	2.2 0.0	0.0	2.2 -1.4
21		JHARSUGUDA-RAIGARH	Q/C	195	261	0.0	0.3	-0.3
22	400 kV	RANCHI-SIPAT	D/C	160	89	0.8	0.0	0.8
23	220 kV	BUDHIPADAR-RAIGARH	S/C	0	102	0.0	1.4	-1.4
24		BUDHIPADAR-KORBA	D/C	159	0 ER-WR	2.5	0.0	2.5
Import/F	Export of	ER (With SR)			ER-WK	24.8	3.2	21.6
26		JEYPORE-GAZUWAKA B/B	D/C	0.0	625.0	0.0	12.2	-12.2
27	HVDC	TALCHER-KOLAR BIPOLE	D/C	0.0	2452.0	0.0	41.3	-41.3
25	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	2467.0	0.0	47.2	-47.2
28	400 kV	TALCHER-I/C	D/C	854.0	761.0	0.0	0.6	-0.6
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0 ER-SR	0.0	0.0 <b>100.7</b>	0.0 -100.7
Import/E	Export of	ER (With NER)			EK-5K	0.0	100.7	-100.7
30	T .	BINAGURI-BONGAIGAON	D/C	197	92	2.4	0.0	2
31	400 kV	ALIPURDUAR-BONGAIGAON	D/C	334	90	4.4	0.0	4
32	220 kV	ALIPURDUAR-SALAKATI	D/C	61	36	0.6	0.0	1
Import/E	Evnort of	NER (With NR)			ER-NER	7.4	0.0	7.4
33	HVDC	BISWANATH CHARIALI-AGRA	1 . 1	472	0	10.9	0.0	10.9
					NER-NR	10.9	0.0	10.9
Import/E	Export of	WR (With NR)			NER-NR	10.9	0.0	10.9
34		CHAMPA-KURUKSHETRA	D/C	0	2349	0.0	33.2	-33.2
34 35	Export of HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B	D/C	449	2349	0.0 11.5	33.2 0.0	-33.2 11.5
34 35 36		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG	D/C D/C	449	2349 0 1920	0.0 11.5 0.0	33.2 0.0 37.6	-33.2 11.5 -37.6
34 35 36 37		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	0 0	2349 0 1920 2701	0.0 11.5 0.0 0.0	33.2 0.0 37.6 46.3	-33.2 11.5 -37.6 -46.3
34 35 36	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG	D/C D/C	449	2349 0 1920	0.0 11.5 0.0	33.2 0.0 37.6	-33.2 11.5 -37.6
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	0 0 0	2349 0 1920 2701 1537	0.0 11.5 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8
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 0 631	2349 0 1920 2701 1537 897 0 1402	0.0 11.5 0.0 0.0 0.0 0.0 10.8	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6
34 35 36 37 38 39 40 41 42	HVDC	CHAMPA-KURUKSHETRA VCHAL 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 0 631 0 33	2349 0 1920 2701 1537 897 0 1402 900	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5
34 35 36 37 38 39 40 41 42 43	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	D/C D/C D/C D/C D/C S/C S/C S/C S/C	449 0 0 0 0 0 631 0 33 105	2349 0 1920 2701 1537 897 0 1402 900 145	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5
34 35 36 37 38 39 40 41 42	HVDC	CHAMPA-KURUKSHETRA VCHAL 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 0 631 0 33	2349 0 1920 2701 1537 897 0 1402 900	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5
34 35 36 37 38 39 40 41 42 43	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	D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C	449 0 0 0 0 631 0 33 105 31	2349 0 1920 2701 1537 897 0 1402 900 145 440	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2
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 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	449 0 0 0 0 0 631 0 33 105 31 986	2349 0 1920 2701 1537 897 0 1402 900 145 440 0	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7
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 CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -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 0 631 0 33 105 31 986 149 14	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134	0.0 11.5 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	HVDC - 765 kV - 400 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-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 0 631 0 33 105 31 986 149 14 12 90	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134	0.0 11.5 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7
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 CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -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	449 0 0 0 0 0 631 0 33 105 31 986 149 14 12 90 54	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134 0 29	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	HVDC - 765 kV - 400 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-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 0 631 0 33 105 31 986 149 14 12 90	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134	0.0 11.5 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 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	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	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 0 631 0 33 105 31 986 149 14 12 90 54	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134 0 29 0	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1
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	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	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 0 631 0 33 105 31 986 149 14 12 90 54 0	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134 0 29 0	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1
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	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-WALIANYA MALANPUR-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 0 631 0 33 105 31 986 149 14 12 90 54 0	2349 0 19201 2701 1537 897 0 1402 900 1445 440 363 85 134 0 29 WR-NR	0.0 11.5 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1 0.0 -165.2
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	CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-WORAK 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 D/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	449 0 0 0 0 0 631 0 33 105 31 986 149 14 12 90 54 0	2349 0 1920 2701 1537 897 0 1402 900 1445 440 0 363 85 134 0 29 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4 12.8 0.0 23.2	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 -22.7 -1 -0.5 -1.4 -0.7 -0.1 -0.0 -165.2 -12.8 -0.0 -22.5
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 - 220 kV - 132kV - Export of 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 RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-RANPUR BHANPURA-WORAK 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 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	449 0 0 0 0 0 631 0 33 105 31 986 149 14 12 90 54 0	2349 0 1920 2701 1537 897 0 1402 900 1445 440 0 363 85 134 0 29 0 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.1 0.1 0.1 0.0 211.4	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1 0.0 -165.2
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 CHITTORGARH-BANASKANTHA ZERDA-BHINMAL VCHAL-RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  WR (With SR) BHASUL-SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI	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 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 0 631 0 33 105 31 986 149 14 12 90 54 0	2349 0 1920 2701 1537 897 0 1402 900 1445 440 0 363 85 134 0 29 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4 12.8 0.0 23.2	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 -1 -0.5 -1.4 -0.7 -1 -0.1 -0.0 -165.2
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	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-WORAK 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 0 631 0 33 105 31 986 149 14 12 90 54 0 0 0 0 467 0 699	2349 0 1920 2701 1537 897 0 1402 900 1445 440 0 363 85 134 0 29 0 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 22.7 0 0.2 0.0 0.7 0.2 0.0 46.2	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4 12.8 0.0 23.2 39.0 0.1	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1 0.0 -165.2 -12.8 0.0 -22.5 -39.0 6.9
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56 57	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	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 S/C S/C S/C S/C S/C S/C S/C S	449 0 0 0 0 0 0 631 0 105 31 986 149 14 12 90 54 0 0 0 0 699	2349 0 1920 2701 1537 897 0 1402 900 145 440 0 363 85 134 0 29 0 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 22.7 0 0.2 0.0 0.7 0.2 0.0 46.2 0.0 0.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4 12.8 0.0 23.2 39.0 0.1 0.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 -22.7 -1 -0.5 -1.4 -0.7 -1.1 -0.0 -165.2 -12.8 -0.0 -22.5 -39.0 -6.9 -0.0
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 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-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 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 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 0 631 0 0 33 105 31 986 149 14 12 90 54 0 0 0 0 467 0 699 0 1	2349 0 19201 1537 897 0 1402 900 1445 40 363 85 134 0 29 0 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 12.8 0.0 211.4 12.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1 0.0 -165.2 -12.8 0.0 -22.5 -39.0 6.9 0.0 0.0
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 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-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-LSILERU SOLAPUR-RICAMBEWADI 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 D/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	449 0 0 0 0 0 0 631 0 0 33 105 31 986 149 14 12 90 54 0 0 0 0 467 0 699 0 1	2349 0 19201 1537 897 0 1402 900 1445 40 363 85 134 0 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4 12.8 0.0 23.2 39.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1 0.0 -165.2 -12.8 0.0 -22.5 -39.0 -6.9 0.0 0.0 1.6
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 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-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-LSILERU SOLAPUR-RICAMBEWADI 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 D/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	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2349 0 19201 1537 897 0 1402 900 1445 40 363 85 134 0 WR-NR	0.0 11.5 0.0 0.0 0.0 0.0 10.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	33.2 0.0 37.6 46.3 22.0 29.9 0.0 28.6 5.5 0.2 4.4 0.0 1 0.7 1.4 0.0 0.1 0.0 211.4 12.8 0.0 23.2 39.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	-33.2 11.5 -37.6 -46.3 -22.0 -29.9 10.8 -28.6 -5.5 -0.2 -4.4 22.7 -1 -0.5 -1.4 0.7 0.1 0.0 -165.2 -12.8 0.0 -22.5 -39.0 -6.9 0.0 0.0 1.6