

## 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: 09<sup>th</sup> Feb 2020

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. 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.,29 , रेस कोर्स क्रॉस रोड, बंगलुरु -560009 Executive Director, SRLDC, 29, Race Course Cross Road, Bangalore-560009

Sub: Daily PSP Report for the date 08.02.2020.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 08-फरवरी-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 08<sup>th</sup> Feb 2020, is available at the NLDC website.

धन्यवाद,

Report for previous day Date of Reporting 9-Feb-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)	47681	48184	40929	18738	2406	157938
Peak Shortage (MW)	632	0	0	0	46	678
Energy Met (MU)	988	1164	1034	370	42	3596
Hydro Gen (MU)	125	37	88	31	5	286
Wind Gen (MU)	20	86	20			126
Solar Gen (MU)*	39.83	25.60	69.62	1.32	0.03	136
Energy Shortage (MU)	13.6	0.0	0.0	0.0	0.6	14.2
Maximum Demand Met during the day (MW) & time	49646	55546	49742	18929	2450	173217
(from NLDC SCADA)	09:15	09:40	09:11	18:58	18:04	09:15

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	0.041	0.00	0.51	6.93	7.44	72.69	19.87

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	6434	0	127.2	75.3	-1.0	90	0.0
	Harvana	6643	0	131.6	91.9	-0.1	187	0.0
	Rajasthan	14085	0	247.4	64.7	-0.6	303	0.0
	Delhi	3687	0	62.0	45.0	0.4	312	0.0
NR	UP	16627	150	295.4	122.3	-1.7	740	1.1
	Uttarakhand	2127	0	39.2	21.4	-0.8	120	0.0
	HP	1741	0	30.3	24.5	-1.4	186	0.0
	J&K(UT) and Ladakh(UT)	2572	643	50.7	45.0	-0.4	377	12.5
	Chandigarh	241	0	3.9	3.8	0.1	32	0.0
	Chhattisgarh	3238	0	72.8	24.0	1.6	239	0.0
	Gujarat	15853	0	333.9	77.5	5.0	512	0.0
	MP	14592	0	266.9	121.1	-3.5	535	0.0
WR	Maharashtra	21792	0	449.6	138.6	0.7	456	0.0
WK	Goa	463	0	9.6	9.3	-0.2	36	0.0
	DD	322	0	7.3	6.7	0.6	52	0.0
	DNH	769	0	18.0	18.0	0.0	36	0.0
	Essar steel	811	0	5.4	5.3	0.1	237	0.0
	Andhra Pradesh	9226	0	187.4	70.5	0.9	452	0.0
	Telangana	11278	0	220.6	116.3	0.4	442	0.0
SR	Karnataka	12615	0	230.7	75.1	-0.3	451	0.0
JI.	Kerala	3497	0	73.4	57.1	1.9	232	0.0
	Tamil Nadu	14557	0	314.6	167.7	-2.1	376	0.0
	Pondy	364	0	7.6	7.9	-0.3	20	0.0
	Bihar	4412	0	76.4	73.7	0.2	50	0.0
	DVC	3124	0	68.6	-38.4	0.7	180	0.0
ER	Jharkhand	1319	0	25.4	21.1	-0.9	70	0.0
Liv	Odisha	4235	0	77.0	11.8	0.6	320	0.0
	West Bengal	6292	0	120.2	36.2	-1.2	90	0.0
	Sikkim	140	0	1.9	1.8	0.1	15	0.0
	Arunachal Pradesh	120	1	2.0	2.2	-0.2	33	0.0
	Assam	1385	41	23.0	20.0	0.4	159	0.3
	Manipur	207	1	2.4	3.0	-0.6	45	0.0
NER	Meghalaya	386	0	6.7	6.0	-0.2	38	0.3
	Mizoram	106	2	1.7	1.7	-0.4	24	0.0
	Nagaland	125	1	2.2	2.1	0.1	10	0.0
	Tripura	229	1	3.4	1.6	-0.5	33	0.0

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	1.5	-10.0	-11.0
Day peak (MW)	422.0	-461.8	-860.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	227.9	-277.5	131.9	-89.6	7.2	-0.1
Actual(MU)	219.7	-313.3	171.0	-84.4	4.6	-2.4
O/D/U/D(MU)	-8.2	-35.8	39.0	5.2	-2.6	-2.4

F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	5881	14983	6872	1660	737	30133
State Sector	12595	15382	6620	6190	11	40798
Total	18476	30364	13492	7850	748	70930

G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	499	1219	535	452	12	2717
Lignite	21	17	58	0	0	96
Hydro	125	37	88	31	5	286
Nuclear	24	30	34	0	0	88
Gas, Naptha & Diesel	34	39	17	0	23	112
RES (Wind, Solar, Biomass & Others)	88	124	137	1	0	351
Total	790	1465	869	485	40	3650

Share of RES in total generation (%)	11.17	8.45	15.80	0.27	0.07	9.61
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	29.97	12.99	29.86	6.73	13.63	19.86

H. All India Demand Diversity Factor

Based on Regional Max Demands	1.018	
Based on State Max Demands	1.072	

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

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

1		IN	FER-REGI	ONAL EXCH	ANGES	Date of l	Reporting :	9-Feb-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)
	Export of	ER (With NR)	1		1			
5	HVDC	ALIPURDUAR-AGRA PUSAULI B/B	S/C	0	0 379	0.0	9.4	0.0 -9.4
1		GAYA-VARANASI	D/C	163	719	0.0	5.9	-5.9
2	765kV	SASARAM-FATEHPUR	S/C	215	180	0.0	0.2	-0.2
3		GAYA-BALIA	S/C	0	540	0.0	8.0	-8.0
6 7		PUSAULI-VARANASI PUSAULI -ALLAHABAD	S/C S/C	0	314 178	0.0	6.3 2.9	-6.3 -2.9
8		MUZAFFARPUR-GORAKHPUR	D/C	207	153	0.6	0.0	0.6
9	400 kV	PATNA-BALIA	Q/C	0	818	0.0	12.6	-12.6
10		BIHARSHARIFF-BALIA	D/C	0	320	0.0	4.0	-4.0
11		MOTIHARI-GORAKHPUR	D/C	0	486	0.0	8.2	-8.2
12	220 kV	BIHARSHARIFF-VARANASI PUSAULI-SAHUPURI	D/C S/C	257 31	139 56	0.0	0.0	1.3 -0.5
14	220 11 1	SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	132 kV	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/E	xport of	ER (With WR)			ER-NR	2.6	58.1	-55.4
-	Aport Of		0/0	2020		21.0	0.0	21.0
18	765 kV	JHARSUGUDA-DHARAMJAIGARH	Q/C	2029	0	31.9	0.0	31.9
19 20	1	NEW RANCHI-DHARAMJAIGARH JHARSUGUDA-DURG	D/C D/C	891 362	0 55	11.5 4.2	0.0	11.5 4.2
21	400 kV	JHARSUGUDA-RAIGARH	Q/C	354	64	2.4	0.0	2.4
22	400 KV	RANCHI-SIPAT	D/C	323	0	4.5	0.0	4.5
23	220 kV	BUDHIPADAR-RAIGARH	S/C	0	0	0.0	0.0	0.0
24		BUDHIPADAR-KORBA	D/C	120	0 ER-WR	2.0 56.4	0.0	2.0
Import/E	Export of	ER (With SR)			ER-WK	30.4	0.0	56.4
26		JEYPORE-GAZUWAKA B/B	D/C	0.0	582.0	0.0	10.3	-10.3
27	HVDC	TALCHER-KOLAR BIPOLE	D/C	0.0	2457.0	0.0	48.9	-48.9
25	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	3032.0	0.0	55.6	-55.6
28	400 kV	TALCHER-I/C	D/C	397.0	1003.0	0.0	6.2	-6.2
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0 ER-SR	0.0	0.0 114.9	0.0 -114.9
Import/E	Export of	ER (With NER)			ZA SA	0.0	114.7	-114.5
30	400 kV	BINAGURI-BONGAIGAON	D/C	0	512	0.0	8.8	-9
31	400 KV	ALIPURDUAR-BONGAIGAON	D/C	0	684	0.0	12.2	-12
32	220 kV	ALIPURDUAR-SALAKATI	D/C	0	129	0.0	2.1	-2
Import/E	export of	NER (With NR)			ER-NER	0.0	23.1	-23.1
33	HVDC	BISWANATH CHARIALI-AGRA	-	0	703	0.0	15.4	-15.4
					1			
Import/E			1		NER-NR	0.0	15.4	-15.4
	export of	WR (With NR)						
34		CHAMPA-KURUKSHETRA	D/C	0	0	0.0	18.8	-18.8
34 35	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B	D/C	447	0 487	0.0 6.8	18.8	-18.8 5.7
34 35 36		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG	D/C D/C	447	0 487 2378	0.0 6.8 0.0	18.8 1.1 30.8	-18.8 5.7 -30.8
34 35		CHAMPA-KURUKSHETRA V'CHAL B/B	D/C	447	0 487	0.0 6.8	18.8	-18.8 5.7
34 35 36 37	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	0 0	0 487 2378 2757	0.0 6.8 0.0 0.0	18.8 1.1 30.8 47.2	-18.8 5.7 -30.8 -47.2
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 0 689	0 487 2378 2757 1580 1062 0	0.0 6.8 0.0 0.0 0.0 0.0 0.0	18.8 1.1 30.8 47.2 22.4 33.1 0.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6
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	447 0 0 0 0 0 0 689	0 487 2378 2757 1580 1062 0 1536	0.0 6.8 0.0 0.0 0.0 0.0 0.0 10.6	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7
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	447 0 0 0 0 0 0 689 0 76	0 487 2378 2757 1580 1062 0 1536 1026	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1
34 35 36 37 38 39 40 41	HVDC - 765 kV	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	447 0 0 0 0 0 0 689	0 487 2378 2757 1580 1062 0 1536	0.0 6.8 0.0 0.0 0.0 0.0 0.0 10.6	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7
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	447 0 0 0 0 0 689 0 76 164	0 487 2378 2757 1580 1062 0 1536 1026 179	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2
34 35 36 37 38 39 40 41 42 43 44 45 46	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	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	447 0 0 0 0 0 689 0 76 164 256 991 198	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3
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	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	447 0 0 0 0 0 689 0 76 164 256 991 198 61	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0	0.0 6.8 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 23.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2
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 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	447 0 0 0 0 689 0 76 164 256 991 198 61 38	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78	0.0 6.8 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 23.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.0 3 1.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9
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	447 0 0 0 0 689 0 76 164 256 991 198 61 38 94	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 0.2 0.0 0.5 0.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.0 3 0.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4
34 35 36 37 38 39 40 41 42 43 44 45 46 47	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	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	447 0 0 0 0 689 0 76 164 256 991 198 61 38	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78	0.0 6.8 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 23.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.0 3 1.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9
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	447 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 23.0 0 0.5 0.1 1.4	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.0 3 0.0 0.0 0.0 0.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5
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-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	447 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0	0.0 6.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.0 3 0.0 0.0 1.3 0.0 0.0 1.3 0.0 1.3 0.0 1.3 0.0 0.0 1.0 0.0 1.0 0.0 0.0 0.0	-18.8 5.7 -30.8 47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
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	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	447 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.0 0.0 0.0 0.1 1.4 0.5 0.0 43.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 0.0 198.4	-18.8 5.7 -30.8 47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
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	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-WARIYA 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	447 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.0 0.2 0.0 0.0 23.0 0 0.5 0.1 1.4 0.5 0.0 43.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 0.0 198.4	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
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	447 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 0.5 0.1 1.4 0.5 0.0 43.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 0.0 198.4	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/F 52 53 54 55	HVDC - 765 kV - 400 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	447 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 0.5 0.1 1.4 0.5 0.0 43.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 0.0 198.4	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
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 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	447 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 0.5 0.1 1.4 0.5 0.0 43.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 0.0 198.4	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
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 - 765 kV	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-RANPUR BHANPURA-WORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  WR (With SR) BHASBURL-SILEEU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI	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	447 0 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 0.0 10.6 0.0 0.0 23.0 0 0.5 0.1 1.4 0.5 0.0 43.1	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 1.0 0.0 0.0 198.4	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3  -22.4 0.0 -37.5 -48.5 -6.5
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  - 765 kV  - 400 kV  - 220 kV  - 132kV  - Xxport of  - 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-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	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	447 0 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0 0 0 0 0 768	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 0.0 0.0 198.4  22.4 0.0 0.7 48.5 0.0 0.0	-18.8 5.7 -30.8 -47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3  -22.4 0.0 -37.5 -48.5 6.5 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  - 765 kV  - 400 kV  - 220 kV  - 132kV  - Xxport of  - 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-ANPUR 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	447 0 0 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0 0 0 0 1	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 10.6 0.0 0.0 0.0 23.0 0 0.5 0.1 1.4 0.5 0.0 43.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 0.0 198.4 22.4 0.0 37.5 48.5 0.0 0.0 0.0 0.0	-18.8 5.7 -30.8 47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 S1 S2 S3 S4 S5 S5 S5 S5 S5 S5 S5 S5 S5 S5	HVDC  - 765 kV  - 400 kV  - 220 kV  - 132kV  - Xxport of  - HVDC  - 765 kV  - 400 kV	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 WARDHA-NIZHAMBAD KOLHAPUR-KUDGI 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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	447 0 0 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0 0 0 0 1	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 0.5 0.1 1.4 0.5 0.0 43.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 198.4 22.4 0.0 37.5 48.5 0.0 0.0 0.0 0.0 0.0 0.0	-18.8 5.7 -30.8 47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3  -22.4 0.0 -37.5 -48.5 6.5 0.0 0.0 1.3 -100.5
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 <b>Import/E</b> 52 53 54 55 56 57 58	HVDC  - 765 kV  - 400 kV  - 220 kV  - 132kV  - Xxport of  - 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 MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-LSILERU SOLAPUR-RICAMBEWADI KOLHAPUR-CHIKODI PONDA-AMBEWADI XELDEM-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 S/C S/C S/C S/C S/C S/C S	447 0 0 0 0 0 0 0 689 0 76 164 256 991 198 61 38 94 50 0 0 0 0 1 0 0 768	0 487 2378 2757 1580 1062 0 1536 1026 179 385 0 385 78 106 0 18 0 WR-NR	0.0 6.8 0.0 0.0 0.0 0.0 10.6 0.0 0.0 0.2 0.0 0.5 0.1 1.4 0.5 0.0 43.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	18.8 1.1 30.8 47.2 22.4 33.1 0.0 30.7 9.1 0.0 1.3 0.0 3 0.3 1.0 0.0 198.4 22.4 0.0 37.5 48.5 0.0 0.0 0.0 0.0 0.0 0.0	-18.8 5.7 -30.8 47.2 -22.4 -33.1 10.6 -30.7 -9.1 0.2 -1.3 23.0 -3 0.2 -0.9 1.4 0.5 0.0 -155.3