

## 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)
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बी-9, कृतुब इन्स्टीट्यूशनल एरिया, कटवारिया सराये, न्यू दिल्ली-110016

Ref: POSOCO/NLDC/SO/Daily PSP Report

दिनांक: 02<sup>st</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 01.02.2020.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 01-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  $01^{st}$  Feb 2020, is available at the NLDC website.

धन्यवाद,

Report for previous day

Date of Reporting 2-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)	46495	47849	41290	17755	2445	155834
Peak Shortage (MW)	651	0	0	0	26	677
Energy Met (MU)	950	1154	1021	356	42	3524
Hydro Gen (MU)	126	40	78	30	5	279
Wind Gen (MU)	6	60	34			100
Solar Gen (MU)*	37.34	27.30	90.08	1.54	0.04	156
Energy Shortage (MU)	14.0	0.0	0.0	0.0	0.5	14.5
Maximum Demand Met during the day (MW) & time	47885	55810	48717	18177	2447	168671
(from NLDC SCADA)	09:56	11:00	10:11	18:35	18:24	09:45

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 0.033 0.00 0.00 3.41 3.41 75.29 21.30

C	Down	Cumple	Position	:	Ctatas

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	5804	0	111.6	67.4	-1.2	64	0.0
	Haryana	6291	0	124.7	89.1	0.3	162	0.0
	Rajasthan	13796	0	243.7	76.9	-0.3	452	0.0
	Delhi	4006	0	68.0	53.0	-1.2	173	0.0
NR	UP	15176	545	276.9	112.8	0.9	740	2.1
	Uttarakhand	2100	0	39.2	23.9	0.3	132	0.0
	HP	1742	0	30.8	24.3	-1.0	136	0.0
	J&K(UT) and Ladakh(UT)	2603	651	51.1	45.5	0.3	384	11.9
	Chandigarh	245	0	4.0	3.9	0.1	37	0.0
	Chhattisgarh	3792	0	80.8	38.0	-1.4	216	0.0
	Gujarat	15562	0	324.0	72.8	2.5	663	0.0
	MP	14444	0	264.8	126.9	-3.5	319	0.0
WR	Maharashtra	21830	0	443.4	144.5	-2.4	406	0.0
WK	Goa	534	0	10.6	10.4	0.1	49	0.0
	DD	309	0	7.0	6.9	0.1	31	0.0
	DNH	766	0	17.8	18.0	-0.2	30	0.0
	Essar steel	667	0	5.8	6.1	-0.3	244	0.0
	Andhra Pradesh	9299	0	188.6	64.9	-0.1	326	0.0
	Telangana	10994	0	210.8	105.7	0.9	784	0.0
SR	Karnataka	12311	0	233.8	68.3	-0.5	405	0.0
JK.	Kerala	3585	0	73.7	57.5	2.1	382	0.0
	Tamil Nadu	14246	0	306.3	156.8	0.0	453	0.0
	Pondy	365	0	7.6	7.7	-0.2	40	0.0
	Bihar	4212	0	76.8	74.9	0.2	270	0.0
	DVC	2924	0	63.3	-35.0	0.7	240	0.0
ER	Jharkhand	1233	0	24.1	22.7	-0.3	120	0.0
LIX	Odisha	3810	0	70.1	2.0	0.4	285	0.0
	West Bengal	6224	0	119.8	27.8	0.5	300	0.0
	Sikkim	136	0	2.1	1.8	0.3	50	0.0
	Arunachal Pradesh	125	1	2,2	2.2	-0.1	50	0.0
	Assam	1345	16	23.0	19.4	0.9	128	0.2
	Manipur	215	1	2.6	3.1	-0.5	28	0.0
NER	Meghalaya	372	0	6.6	6.1	-0.3	30	0.3
	Mizoram	109	1	1.7	1.7	-0.2	22	0.0
	Nagaland	129	2	2.1	2.2	-0.2	9	0.0
	Tripura	244	1	4.0	1.7	0.0	40	0.0

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	3.1	-7.6	-9.7
Day peak (MW)	509.8	-441.2	-752.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	237.2	-281.2	107.6	-70.8	7.1	0.0
Actual(MU)	231.9	-296.7	133.0	-79.5	7.4	-4.0
O/D/U/D(MU)	-5.4	-15.5	25.4	-8.8	0.3	-4.0

## F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	5728	14493	6722	2875	613	30431
State Sector	12425	15645	6260	5770	11	40111
Total	18153	30138	12982	8645	625	70542

G. Sourcewise generation (MII)

	NR	WR	SR	ER	NER	All India
Coal	461	1223	543	425	11	2663
Lignite	27	13	52	0	0	92
Hydro	126	40	78	30	5	279
Nuclear	24	33	39	0	0	96
Gas, Naptha & Diesel	29	33	17	0	23	102
RES (Wind, Solar, Biomass & Others)	73	101	162	2	0	337
Total	740	1443	891	457	39	3571

Share of RES in total generation (%)	9.87	6.97	18.20	0.34	0.10	9.45
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	30.16	12.06	31.38	6.92	12.23	19.98

H. All India Demand Diversity Factor

11 111 maia Demana Diversity Tuctor	
Based on Regional Max Demands	1.026
Based on State Max Demands	1.076

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

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

		<u>IN'</u>	TER-REGI	ONAL EXCH	ANGES	Date of 1	Reporting :	2-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					•
5	HVDC	ALIPURDUAR-AGRA PUSAULI B/B	S/C	0	0 297	0.0	7.3	-7.3
1		GAYA-VARANASI	D/C	79	615	0.0	8.2	-8.2
2	765kV	SASARAM-FATEHPUR	S/C	78	270	0.0	3.2	-3.2
3		GAYA-BALIA	S/C	0	436	0.0	7.7	-7.7
6	-	PUSAULI-VARANASI	S/C	0	265	0.0	5.1	-5.1
7 8	-	PUSAULI -ALLAHABAD MUZAFFARPUR-GORAKHPUR	S/C D/C	0	118 473	0.0	6.2	-2.0 -6.2
9	400 kV	PATNA-BALIA	Q/C	0	740	0.0	10.0	-10.0
10		BIHARSHARIFF-BALIA	D/C	0	397	0.0	7.0	-7.0
11	]	MOTIHARI-GORAKHPUR	D/C	0	125	0.0	3.5	-3.5
12		BIHARSHARIFF-VARANASI	D/C	166	152	0.0	0.5	-0.5
13	220 kV	PUSAULI-SAHUPURI	S/C	42	28	0.1	0.0	0.1
14		SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15 16	132 kV	GARWAH-RIHAND	S/C S/C	30 0	0	0.7	0.0	0.7
17	-	KARMANASA-SAHUPURI KARMANASA-CHANDAULI	S/C	0	0	0.0	0.0	0.0
17		KAKWAWASA-CHANDAULI	5/C	0	ER-NR	0.8	60.6	-59.8
Import/E	Export of	ER (With WR)						
18		JHARSUGUDA-DHARAMJAIGARH	Q/C	1470	0	22.3	0.0	22.3
19	765 kV	NEW RANCHI-DHARAMJAIGARH	D/C	704	57	7.8	0.0	7.8
20	i	JHARSUGUDA-DURG	D/C	197	9	1.2	0.0	1.2
21	400 kV	JHARSUGUDA-RAIGARH	Q/C	84	415	0.0	3.8	-3.8
22		RANCHI-SIPAT	D/C	275	9	2.9	0.0	2.9
23	220 kV	BUDHIPADAR-RAIGARH	S/C	0	113	0.0	1.3	-1.3
24		BUDHIPADAR-KORBA	D/C	136	0 ER-WR	2.4 36.5	0.0 5.1	2.4 31.4
Import/F	Export of	ER (With SR)			EK-WK	30.3	5.1	31.4
26		JEYPORE-GAZUWAKA B/B	D/C	0.0	537.0	0.0	12.3	-12.3
27	HVDC	TALCHER-KOLAR BIPOLE	D/C	0.0	1986.0	0.0	43.8	-43.8
25	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	2558.0	0.0	48.7	-48.7
28	400 kV	TALCHER-I/C	D/C	451.0	328.0	1.1	0.0	1.1
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0	0.0	0.0	0.0
Immout/E	Ermont of	ED (With NED)			ER-SR	0.0	104.8	-104.8
30 30	export of	ER (With NER) BINAGURI-BONGAIGAON	D/C	175	219	1.1	0.8	0
31	400 kV	ALIPURDUAR-BONGAIGAON	D/C	276	220	0.8	0.0	1
32	220 kV	ALIPURDUAR-SALAKATI	D/C	59	47	0.2	0.0	0
					ER-NER	2.0	0.8	1.2
Import/E	Export of	NER (With NR)						
33	HVDC	BISWANATH CHARIALI-AGRA	-	474	0	9.2	0.0	9.2
Import/E	Export of	WR (With NR)			NER-NR	9.2	0.0	9.2
34	export of	CHAMPA-KURUKSHETRA		0	3010	0.0		
35	4		D/C				39.6	-39.6
	HVDC		D/C D/C	447		9.1	39.6	-39.6 9.1
36	HVDC	V'CHAL B/B APL -MHG	D/C D/C D/C	447 0	0 2286	9.1 0.0	39.6 0.0 41.6	-39.6 9.1 -41.6
36 37	HVDC	V'CHAL B/B	D/C		0	9.1	0.0	9.1
37 38	HVDC	V'CHAL B/B APL -MHG	D/C D/C D/C D/C	0 0 0	0 2286	9.1 0.0 0.0 0.0	0.0 41.6	9.1 -41.6
37 38 39	HVDC - 765 kV	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 2286 2845 1536 961	9.1 0.0 0.0 0.0 0.0	0.0 41.6 48.7 21.7 32.1	9.1 -41.6 -48.7 -21.7 -32.1
37 38 39 40		VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI	D/C D/C D/C D/C D/C S/C	0 0 0 0 713	0 2286 2845 1536 961	9.1 0.0 0.0 0.0 0.0 10.7	0.0 41.6 48.7 21.7 32.1 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7
37 38 39 40 41		VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI	D/C D/C D/C D/C D/C S/C S/C	0 0 0 0 0 713	0 2286 2845 1536 961 0	9.1 0.0 0.0 0.0 0.0 0.0 10.7 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4
37 38 39 40 41 42		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	0 0 0 0 713 0	0 2286 2845 1536 961 0 1468	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9
37 38 39 40 41	765 kV	VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI	D/C D/C D/C D/C D/C S/C S/C	0 0 0 0 0 713	0 2286 2845 1536 961 0	9.1 0.0 0.0 0.0 0.0 0.0 10.7 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4
37 38 39 40 41 42 43		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 D/C S/C S/C S/C S/C	0 0 0 0 713 0 0	0 2286 2845 1536 961 0 1468 1106	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6
37 38 39 40 41 42 43 44	765 kV	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 D/C S/C S/C S/C S/C S/C	0 0 0 0 713 0 0 92 58	0 2286 2845 1536 961 0 1468 1106 190 439	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4
37 38 39 40 41 42 43 44 45	765 kV	V'CHAL B/B  APL -MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  CHITTORGARH-BANASKANTHA  ZERDA-KANKROLI  ZERDA -BHINMAL  V'CHAL -RIHAND	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C	0 0 0 0 713 0 0 92 58 981	0 2286 2845 1536 961 0 1468 1106 190 439 0	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0 0.6 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7
37 38 39 40 41 42 43 44 45 46 47 48	765 kV	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	0 0 0 0 713 0 0 92 58 981 148 9	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105	9.1 0.0 0.0 0.0 10.7 0.0 0.0 0.6 0.0 22.7 0 0.2	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4
37 38 39 40 41 42 43 44 45 46 47 48	- 765 kV - 400 kV	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	0 0 0 0 713 0 0 92 58 981 148 9	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0
37 38 39 40 41 42 43 44 45 46 47 48 49	- 765 kV - 400 kV	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	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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2
37 38 39 40 41 42 43 44 45 46 47 48 49	- 765 kV - 400 kV	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	0 0 0 0 713 0 0 92 58 981 148 9	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0
37 38 39 40 41 42 43 44 45 46 47 48 49 50	765 kV 400 kV 220 kV	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	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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2
37 38 39 40 41 42 43 44 45 46 47 48 49 50	765 kV 400 kV 220 kV 132kV	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-RAPUR  BHANPURA-MORAK  MEHGAON-AURAIYA  MALANPUR-JURAIYA  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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	765 kV 400 kV 220 kV	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)	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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 2 0.7 1.4 0.0 0.1 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52	- 765 kV - 400 kV - 220 kV - 132kV - 2xport of - HVDC	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-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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1 0.0 2 2 0.7	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 132kV	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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 0 0 0 713 0 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56	- 765 kV - 400 kV - 220 kV - 132kV - 2xport of - HVDC	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)  BHASURI-LSILERU  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 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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 24.3	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 400 kV	VCHAL B/B  APL -MHG  GWALIOR-AGRA PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  GWALIOR-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  BHASUR-LSILERU  SOLAPUR-RAICHUR  WARDHA-NIZAMABAD  KOLHAPUR-KUDGI  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 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	0 0 0 0 713 0 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 3.4 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 0.0 24.3 40.6 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1 0.0
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56 57 58	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 400 kV	VCHAL B/B  APL -MHG  GWALIOR-AGRA PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  GWALIOR-ORAI  CHITTORGARH-BANASKANTHA  ZERDA-KANKROLI  ZERDA -BHINMAL  VCHAL -RIHAND  RAPP-SHUJALPUR  BHANPURA-MORAK  MEHGAON-AURAIYA  MALANPUR-AURAIYA  GWALIOR-SAWAI MADHOPUR  WR (With SR)  BHANPURA-ILERU  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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 24.3 40.6 0.0 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1 0.0 0.0
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56 57	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 400 kV	VCHAL B/B  APL -MHG  GWALIOR-AGRA PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  GWALIOR-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  BHASUR-LSILERU  SOLAPUR-RAICHUR  WARDHA-NIZAMABAD  KOLHAPUR-KUDGI  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 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	0 0 0 0 713 0 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 24.3 40.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1 0.0 0.8
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56 57 58	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 400 kV	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-RAPUR  BHANPURA-MORAK  MEHGAON-AURAIYA  GWALIOR-SAWAI MADHOPUR  WR (With SR)  BHADRAWATI B/B  BARSUR-L.SILERU  SOLAPUR-RAICHUR  WARDHA-NIZAMABAD  KOLHAPUR-CHIKODI  PONDA-AMBEWADI  XELDEM-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 0 0 0 713 0 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 24.3 40.6 0.0 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1 0.0 0.0
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56 57 58 59	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 400 kV	VCHAL B/B  APL -MHG  GWALIOR-AGRA PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  CHITTORGARH-BANASKANTHA  ZERDA-KANKROLI  ZERDA -BHINMAL  VCHAL -RIHAND  RAPP-SHUJALPUR  BHANPURA-RANPUR  BHANPURA-RANPUR  BHANPURA-WALIOR  GWALIOR-SAWAI MADHOPUR  WR (With SR)  BHADRAWATI B/B  BARSUR-L.SILERU  SOLAPUR-RAICHUR  WARDHA-NIZAMABAD  KOLHAPUR-CHIKODI  PONDA-AMBEWADI  TI	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	0 0 0 0 713 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 24.3 40.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1 0.0 0.8 -75.9
37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/E 52 53 54 55 56 57 58	- 765 kV - 400 kV - 220 kV - 132kV - 220 kV - 132kV - 400 kV	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-RAPUR  BHANPURA-MORAK  MEHGAON-AURAIYA  GWALIOR-SAWAI MADHOPUR  WR (With SR)  BHADRAWATI B/B  BARSUR-L.SILERU  SOLAPUR-RAICHUR  WARDHA-NIZAMABAD  KOLHAPUR-CHIKODI  PONDA-AMBEWADI  XELDEM-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 0 0 0 713 0 0 0 92 58 981 148 9 21 85 45 0	0 2286 2845 1536 961 0 1468 1106 190 439 0 344 105 136 9 40 0 WR-NR	9.1 0.0 0.0 0.0 0.0 10.7 0.0 0.6 0.0 22.7 0 0.2 0.0 1.0 0.3 0.0 44.7	0.0 41.6 48.7 21.7 32.1 0.0 30.4 10.9 0.0 2 0.7 1.4 0.0 0.1 0.0 232.9 19.8 0.0 24.3 40.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0	9.1 -41.6 -48.7 -21.7 -32.1 10.7 -30.4 -10.9 0.6 -3.4 22.7 -2 -0.5 -1.4 1.0 0.2 0.0 -188.2 -19.8 0.0 -24.3 -40.6 8.1 0.0 0.8