

### National Load Despatch Centre राष्ट्रीय भार प्रेषण केंद्र

# POWER SYSTEM OPERATION CORPORATION LIMITED

## पॉवर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड

(Government of India Enterprise/ भारत सरकार का उद्यम)
B-9, QUTUB INSTITUTIONAL AREA, KATWARIA SARAI, NEW DELHI -110016
बी-9, कृतुब इन्स्टीट्यूशनल एरिया, कटवारिया सराये, न्यू दिल्ली-110016

Ref: POSOCO/NLDC/SO/Daily PSP Report

दिनांक: 29<sup>th</sup> Nov 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.,29 , रेस कोर्स क्रॉस रोड, बंगलुरु -560009 Executive Director, SRLDC, 29, Race Course Cross Road, Bangalore-560009

Sub: Daily PSP Report for the date 28.11.2019.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 28-नवम्बर-2019 की अखिल भारतीय प्रणाली की दैनिक ग्रिड निष्पादन रिपोर्ट रा॰भा॰प्रे॰के॰ की वेबसाइट पर उप्लब्ध है ।

As per article 5.5.1 of the Indian Electricity Grid Code, the daily report pertaining power supply position of All India Power System for the date 28<sup>th</sup> Nov 2019, is available at the NLDC website.

धन्यवाद,

Report for previous day

A. Power Supply Position at All India and Regional level

Date of Reporting 29-Nov-19

	NR	WR	SR	ER	NER	Total
Demand Met during Evening Peak hrs(MW) (at 1900 hrs; from RLDCs)	40821	48252	37475	18293	2328	147169
Peak Shortage (MW)	509	0	0	0	40	549
Energy Met (MU)	813	1146	875	344	41	3219
Hydro Gen (MU)	141	41	87	37	9	316
Wind Gen (MU)	16	70	57			143
Solar Gen (MU)*	25.49	19.7	63.43	1.92	0.05	111
Energy Shortage (MU)	9.0	0.0	0.0	0.0	0.5	9.6
Maximum Demand Met during the day	41362	52674	40848	18445	2447	151818
(MW) & time (from NLDC SCADA)	18:29	10:38	18:32	17:48	18:21	18:25

B. Frequency Profile (%)
Region
All India FVI 0.030 <49.7 49.7-49.8 49.8-49.9 <49.9 49.9-50.05 > 50.05 0.00 0.41 0.00 0.41 69.79 29.80

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	5053	0	99.4	47.2	-0.5	144	0.0
NR	Haryana	5534	0	100.3	91.7	-0.6	405	0.0
	Rajasthan	11445	0	213.0	65.4	-1.9	426	0.0
	Delhi	3384	0	62.4	52.4	-1.2	124	0.0
	UP	12448	0	238.2	102.9	-0.5	504	0.0
	Uttarakhand	1548	0	30.2	18.9	-0.7	126	0.0
	HP	1493	7	28.2	21.4	-1.5	0	0.0
	J&K	2036	509	37.9	34.2	-3.8	201	9.0
	Chandigarh	201	0	3.5	3.4	0.0	20	0.0
	Chhattisgarh	3389	0	71.4	18.3	-1.4	460	0.0
	Gujarat	15753	0	334.7	80.3	-2.4	472	0.0
	MP	13096	0	252.8	149.7	-3.0	419	0.0
WR	Maharashtra	21191	0	443.7	138.4	-1.9	403	0.0
WK	Goa	594	0	12.5	12.1	-0.2	59	0.0
	DD	326	0	7.4	6.7	0.7	51	0.0
	DNH	805	0	17.7	17.8	-0.1	70	0.0
	Essar steel	346	0	5.7	5.6	0.1	295	0.0
	Andhra Pradesh	7840	0	168.6	77.9	0.2	356	0.0
	Telangana	8267	0	169.0	68.9	2.1	325	0.0
SR	Karnataka	10190	0	190.8	45.4	0.7	438	0.0
3N	Kerala	3689	0	73.8	54.4	1.9	206	0.0
	Tamil Nadu	13178	0	265.8	158.7	-0.5	529	0.0
	Pondy	365	0	7.1	7.5	-0.4	36	0.0
	Bihar	4039	0	69.3	67.8	0.6	50	0.0
	DVC	3032	0	61.3	-30.7	-1.6	400	0.0
ER	Jharkhand	1300	0	24.1	17.7	-1.5	31	0.0
LIN	Odisha	3971	0	74.5	5.9	2.0	300	0.0
	West Bengal	6588	0	113.0	32.9	1.7	140	0.0
	Sikkim	100	0	1.6	1.5	0.0	20	0.0
	Arunachal Pradesh	115	1	2.1	2.1	-0.2	23	0.0
	Assam	1408	25	23.1	18.1	0.2	81	0.5
	Manipur	160	2	2.6	2.6	0.0	29	0.0
NER	Meghalaya	319	0	5.5	2.7	0.2	21	0.0
	Mizoram	99	1	1.8	0.6	0.8	9	0.0
	Nagaland	117	2	2.2	2.0	-0.1	2	0.0
	Tripura	220	1	3.6	1.9	-0.1	24	0.0

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

1	Bhutan	Nepal	Bangladesh
Actual(MU)	6.8	-2.8	-14.4
Day peak (MW)	488.8	-292.0	-922.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	191.8	-189.4	93.1	-93.2	-1.7	0.6
Actual(MU)	165.3	-189.1	109.3	-90.5	-0.1	-5.0
O/D/U/D(MU)	-26.5	0.3	16.3	2.7	1.6	-5.6

#### F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	5924	17506	6162	1990	584	32167
State Sector	13681	14695	10770	5670	11	44827
Total	19605	32201	16932	7660	596	76994

#### G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	399	1111	412	413	11	2345
Lignite	20	12	40	0	0	73
Hydro	141	41	87	37	9	316
Nuclear	28	28	60	0	0	116
Gas, Naptha & Diesel	15	50	15	0	24	104
RES (Wind, Solar, Biomass & Others)	68	106	162	2	0	338
Total	672	1348	775	452	45	3292
Share of RES in total generation (%)	10.16	7.85	20.87	0.43	0.11	10.27
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	35.42	12.99	39.78	8.58	21.10	23.38

н	AII	India	Demand	Divorcity	Factor

11.111 India Bending Biverbity Tuetor							
Based on Regional Max Demands	1.026						
Based on State Max Demands	1.078						

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

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

		IN	FER-REGI	ONAL EXCHA	ANGES	Date of 1	Reporting :	29-Nov-19
								Import=(+ve) /Export =(-ve) for NET (MU)
Sl No	Voltage Level	Line Details	Circuit	Max Import (MW)	Max Export (MW)	Import (MU)	Export (MU)	NET (MU)
	Export of	ER (With NR)			1			
2	765kV	GAYA-VARANASI SASARAM-FATEHPUR	D/C S/C	0	853 425	0.0	11.7 5.6	-11.7 -5.6
3	70387	GAYA-BALIA	S/C	0	346	0.0	5.9	-5.9
4	HVDC	ALIPURDUAR-AGRA	-	0	0	0.0	0.0	0.0
5	пове	PUSAULI B/B	S/C	0	196	0.0	4.9	-4.9
6	-	PUSAULI-VARANASI	S/C	0	138	0.0	2.7	-2.7
7 8	-	PUSAULI -ALLAHABAD	S/C D/C	0	136 917	0.0	13.0	-2.1 -13.0
9	400 kV	MUZAFFARPUR-GORAKHPUR PATNA-BALIA	O/C	0	814	0.0	13.7	-13.7
10	100 111	BIHARSHARIFF-BALIA	D/C	0	320	0.0	4.8	-4.8
11	1	MOTIHARI-GORAKHPUR	D/C	0	4	0.0	0.0	0.0
12	1	BIHARSHARIFF-VARANASI	D/C	0	377	0.0	4.0	-4.0
13	220 kV	PUSAULI-SAHUPURI	S/C	1	0	0.0	0.0	0.0
14		SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	132 kV	GARWAH-RIHAND	S/C	30	0	0.4	0.0	0.4
16		KARMANASA-SAHUPURI	S/C	0	0	0.0	0.0	0.0
17	<u> </u>	KARMANASA-CHANDAULI	S/C	0	0 ER-NR	0.0 <b>0.4</b>	0.0	0.0 - <b>68.0</b>
Import/E	Export of	ER (With WR)			rk-NK	0.4	68.4	-08.0
-		· · · · · · · · · · · · · · · · · · ·	0/0	1260	0	16.7	0.0	167
18	765 kV	JHARSUGUDA-DHARAMJAIGARH	Q/C	1269	0	16.7	0.0	16.7
19 20	<b></b> -	NEW RANCHI-DHARAMJAIGARH JHARSUGUDA-DURG	D/C D/C	371 51	308 357	1.0 0.0	3.0	1.0 -3.0
21		JHARSUGUDA-DURG JHARSUGUDA-RAIGARH	Q/C	227	200	0.0	0.0	0.1
22	400 kV	RANCHI-SIPAT	D/C	145	101	0.9	0.0	0.9
23	220 kV	BUDHIPADAR-RAIGARH	S/C	0	109	0.0	1.6	-1.6
24	220 KV	BUDHIPADAR-KORBA	D/C	125	0	1.6	0.0	1.6
					ER-WR	20.3	4.6	15.7
•		ER (With SR)	1					
25	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	1859.0	0.0	34.6	-34.6
26 27	HVDC LINK	JEYPORE-GAZUWAKA B/B	D/C	0.0	531.0	0.0	12.4 44.1	-12.4 -44.1
28	400 kV	TALCHER-KOLAR BIPOLE TALCHER-I/C	D/C D/C	589.0	2465.0 986.0	0.0	7.5	-7.5
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0	0.0	0.0	0.0
	220 111			1.0	ER-SR	0.0	91.1	-91.1
Import/F	Export of	ER (With NER)						
30	400 kV	BINAGURI-BONGAIGAON	D/C	297	62	4.8	0.0	5
31		ALIPURDUAR-BONGAIGAON	D/C	319	0	5.6	0.0	6
32	220 kV	ALIPURDUAR-SALAKATI	D/C	59	24	0.8	0.0	1
Immout/E	Zymout of	NED (With ND)			ER-NER	11.2	0.0	11.2
33		NER (With NR) BISWANATH CHARIALI-AGRA	1 . 1	470	0	11.4	0.0	11.4
33	пурс	DISWANATH CHARLACKA		470	Ü	11.4	0.0	11.4
Inner /*			L		NER-NR	11.4	0.0	11.4
ımport/E	Export of	WR (With NR)			NER-NR	11.4	0.0	11.4
Import/E	Export of	WR (With NR) CHAMPA-KURUKSHETRA	D/C	0	NER-NR	0.0	13.1	-13.1
•			D/C D/C	0 452	_			
34		CHAMPA-KURUKSHETRA			481	0.0	13.1	-13.1
34 35 36 37		CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	452 0 0	481 0 1079 2043	0.0 8.4 0.0 0.0	13.1 0.0 23.2 37.4	-13.1 8.4 -23.2 -37.4
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	452 0 0 0	481 0 1079 2043 1269	0.0 8.4 0.0 0.0 0.0	13.1 0.0 23.2 37.4 16.5	-13.1 8.4 -23.2 -37.4 -16.5
34 35 36 37 38 39		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	452 0 0 0 0 635	481 0 1079 2043 1269 697	0.0 8.4 0.0 0.0 0.0 0.0	13.1 0.0 23.2 37.4 16.5 24.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0
34 35 36 37 38 39 40	HVDC	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	452 0 0 0 0 635 564	481 0 1079 2043 1269 697 0	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8	13.1 0.0 23.2 37.4 16.5 24.0 0.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8
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	452 0 0 0 0 635 564 0	481 0 1079 2043 1269 697 0	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1
34 35 36 37 38 39 40	HVDC	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	452 0 0 0 0 635 564	481 0 1079 2043 1269 697 0	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8	13.1 0.0 23.2 37.4 16.5 24.0 0.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8
34 35 36 37 38 39 40 41 42	HVDC - 765 kV	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 S/C S/C	452 0 0 0 0 635 564 0	481 0 1079 2043 1269 697 0 1245 879	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5
34 35 36 37 38 39 40 41 42 43	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI	D/C D/C D/C D/C D/C S/C S/C D/C	452 0 0 0 635 564 0 0 65	481 0 1079 2043 1269 697 0 1245 879 157	0.0 8.4 0.0 0.0 0.0 0.0 9.8 0.0 0.0	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2
34 35 36 37 38 39 40 41 42 43	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	D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C	452 0 0 0 0 635 564 0 0 65 112	481 0 1079 2043 1269 697 0 1245 879 157 322	0.0 8.4 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.0 0.0	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1
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	452 0 0 0 635 564 0 0 65 112 967	481 0 1079 2043 1269 697 0 1245 879 157 322 0	0.0 8.4 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.0 0.3 0.2 22.3	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3
34 35 36 37 38 39 40 41 42 43 44 45 46	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	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	452 0 0 0 635 564 0 0 65 112 967 179	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 9.0 0.0 0.0 0.0 2.2 22.3	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3 1
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	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  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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3	0.0 8.4 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 0.1	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0.3 1.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 1 -0.3 -0.9 1.3
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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21	0.0 8.4 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 0.1 1.3 0.2	13.1 0.0 23.2 37.4 16.5 24.0 0.7 11.2 0.8 2.4 0.0 0 0 0.3 1.0 0.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3 1 -0.3 -0.9 1.3 0.2
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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 1114 3 21	0.0 8.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3 1 -0.3 -0.9 1.3 0.2 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	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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21	0.0 8.4 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 0.1 1.3 0.2	13.1 0.0 23.2 37.4 16.5 24.0 0.7 11.2 0.8 2.4 0.0 0 0 0.3 1.0 0.0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3 1 -0.3 -0.9 1.3 0.2
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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3 1 -0.3 -0.9 1.3 0.2 0.0 -113.6
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F	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-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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0.3 1.0 0.0 0.0 0.0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	-13.1  8.4  -23.2  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  1  -0.3  -0.9  1.3  0.0  -113.6
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/F 52 53	HVDC  - 765 kV  - 400 kV  - 220 kV  - 132kV  Export of  HVDC  LINK	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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0 0 0 0 0 0 0 0 0 0 0	-13.1 8.4 -23.2 -37.4 -16.5 -24.0 9.8 -27.1 -11.2 -0.5 -2.1 22.3 1 -0.3 -0.9 1.3 0.2 0.0 -113.6
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F	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-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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.2 22.3 1 0.1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0 0 0 0 0 0 1.0 0 0 0 0 0 0 0 0 0 0 0 0 0	-13.1  8.4  -23.2  -37.4  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  1  -0.3  -0.9  1.3  0.0  -113.6
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  LINK	CHAMPA-KURUKSHETRA V'CHAL B/B  APL-MHG  GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-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	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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.2 22.3 1 0.1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0.3 1.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0	-13.1  8.4  -23.2  -37.4  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  1  -0.3  -0.9  1.3  0.0  -113.6
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/F 52 53 54 55	HVDC  - 765 kV  - 400 kV  - 220 kV  - 132kV  Export of HVDC LINK - 765 kV	CHAMPA-KURUKSHETRA V'CHAL B/B  APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-BHISMAL 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 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 S/C S/C S/C S/C S/C S/C S/C S	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0  8.4  0.0  0.0  0.0  0.0  9.8  0.0  0.0  0.3  0.2  22.3  1  0.1  1.3  0.2  0.0  43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0 0 0.3 1.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4	-13.1  8.4  -23.2  -37.4  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  1  -0.3  -0.9  1.3  0.2  0.113.6
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	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-BHINMAL V'CHAL-RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  WR (With SR) BHASPUR-LSILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-RUDGI	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C 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	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.7 11.2 0.8 2.4 0.0 0 0.3 1.0 0.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4 0.0	-13.1  8.4  -23.2  -37.4  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  22.3  1  -0.3  -0.9  1.3  0.2  0.0  -113.6
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	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) BHASUR-LSILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-RUDGI 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 S/C S/C S/C S/C S/C S/C S/C S	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0 0	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 1114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 27.1 11.2 0.8 2.4 0.0 0 0 0.3 1.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4 0.0 0.0	-13.1  8.4  -23.2  -37.4  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  22.3  1  -0.3  -0.9  1.3  0.2  0.0  -113.6
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-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	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	452 0 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0 0 0 368 100 790 0 3	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 1114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 27.1 11.2 0.8 2.4 0.0 0 0 0.3 1.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-13.1  8.4  -23.2  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  22.3  1  -0.3  -0.9  1.3  0.2  0.0  -113.6  -17.1  0.10  -17.9  -15.4  12.2  0.0  -0.8
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-RANPUR BHANPURA-WARAI MALANPUR-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	452 0 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0 0 0 368 100 790 0 3	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0.3 1.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-13.1  8.4  -23.2  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  22.3  1  -0.3  -0.9  -13.6  -17.1  -17.1  -17.9  -17.9  -17.9  -18.4  -12.2  -0.8  -0.9
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 59	HVDC	CHAMPA-KURUKSHETRA V'CHAL B/B  APL-MHG  GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI  SATNA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL V'CHAL -RIHAND RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-KUDGI KOLHAPUR-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI T BHUTAN	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0 0 0 368 100 790 0 3	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0.3 1.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-13.1  8.4  -23.2  -37.4  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  1  -0.3  -0.9  1.3  0.2  0.1  -17.1  0.0  -17.9  -35.4  12.2  0.8  0.9  -58.1
34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51  Import/F 52 53 54 55 56 57 58	HVDC	CHAMPA-KURUKSHETRA 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-KUDGI KOLHAPUR-CHIKODI PONDA-AMBEWADI	D/C D/C D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	452 0 0 0 635 564 0 0 65 112 967 179 23 40 104 50 0 0 0 368 100 790 0 3	481 0 1079 2043 1269 697 0 1245 879 157 322 0 155 53 114 3 21 0 WR-NR	0.0 8.4 0.0 0.0 0.0 0.0 0.0 9.8 0.0 0.0 0.3 0.2 22.3 1 0.1 1.3 0.2 0.0 43.5	13.1 0.0 23.2 37.4 16.5 24.0 0.0 27.1 11.2 0.8 2.4 0.0 0.3 1.0 0.0 0.0 157.1 17.1 0.0 18.2 35.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	-13.1  8.4  -23.2  -16.5  -24.0  9.8  -27.1  -11.2  -0.5  -2.1  1  -0.3  -0.9  1.3  0.0  -113.6  -17.1  0.10  -17.9  -35.4  12.2  0.9  -0.8  0.9  -58.1