

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: 01st Dec 2019

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 30.11.2019.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 30-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 30th 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 1-Dec-19

	NR	WR	SR	ER	NER	Total
Demand Met during Evening Peak hrs(MW) (at 1900 hrs; from RLDCs)	42371	47693	35990	18165	2356	146575
Peak Shortage (MW)	510	0	0	0	39	549
Energy Met (MU)	835	1145	857	349	41	3227
Hydro Gen (MU)	134	52	86	40	9	320
Wind Gen (MU)	31	61	44			136
Solar Gen (MU)*	24.52	18.9	64.04	1.54	0.03	109
Energy Shortage (MU)	12.2	0.0	0.0	0.0	0.5	12.7
Maximum Demand Met during the day	43010	53156	39492	18335	2527	150290
(MW) & time (from NLDC SCADA)	18:40	11:21	09:30	18:53	17:33	18:18

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 0.06 4.05 4.11 77.75 18.14

C. Power	Suppl	ly Posi	ition i	n 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	5067	0	101.4	44.2	-1.5	28	0.0
	Haryana	5750	0	108.5	98.7	-0.9	175	0.0
	Rajasthan	11158	0	213.3	53.2	-1.2	454	0.0
	Delhi	3358	0	60.4	49.5	-0.7	102	0.1
NR	UP	13704	0	240.5	102.7	-1.0	854	1.7
	Uttarakhand	1818	0	34.2	21.4	0.6	149	0.0
	HP	1629	0	29.1	21.1	-0.2	67	0.0
	J&K	2119	530	44.1	37.2	-0.6	201	10.4
	Chandigarh	191	0	3.3	3.3	0.0	26	0.0
	Chhattisgarh	3377	0	71.7	21.2	-1.1	143	0.0
	Gujarat	15605	0	333.5	71.0	-2.8	560	0.0
	MP	13147	0	250.7	150.4	-4.4	419	0.0
WR	Maharashtra	21471	0	445.0	139.5	-3.8	415	0.0
WK	Goa	541	0	12.9	11.8	0.5	23	0.0
	DD	320	0	7.3	6.7	0.6	63	0.0
	DNH	785	0	18.3	18.4	-0.1	33	0.0
	Essar steel	268	0	5.4	5.3	0.1	295	0.0
	Andhra Pradesh	8202	0	170.0	75.7	-0.7	356	0.0
	Telangana	8171	0	167.3	71.0	1.1	353	0.0
SR	Karnataka	10490	0	190.9	43.0	-0.5	604	0.0
3N	Kerala	3453	0	72.0	53.9	1.5	233	0.0
	Tamil Nadu	11781	0	250.0	146.9	2.1	518	0.0
	Pondy	337	0	6.9	7.3	-0.3	76	0.0
	Bihar	3957	0	69.0	67.3	0.5	320	0.0
	DVC	2939	0	60.9	-30.0	0.8	315	0.0
ER	Jharkhand	1187	0	24.5	17.4	-1.0	31	0.0
EK	Odisha	4064	0	77.5	12.1	0.7	375	0.0
	West Bengal	6355	0	115.6	34.4	1.7	510	0.0
	Sikkim	100	0	1.4	1.5	-0.1	20	0.0
	Arunachal Pradesh	126	8	2.2	2.0	0.0	14	0.0
	Assam	1390	32	23.0	17.5	0.2	129	0.5
	Manipur	178	7	2.5	2.6	-0.1	43	0.0
NER	Meghalaya	347	5	6.0	2.7	0.4	92	0.0
	Mizoram	108	6	1.8	0.6	0.9	22	0.0
	Nagaland	112	4	2.2	2.0	-0.1	8	0.0
	Tripura	242	9	3.4	1.1	-0.1	87	0.0

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	7.2	-2.4	-6.4
Day peak (MW)	489.8	-100.4	-565.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	198.8	-180.5	85.8	-102.9	-1.1	0.0
Actual(MU)	185.4	-189.1	101.2	-97.9	0.9	0.5
O/D/U/D(MU)	-13.3	-8.6	15.4	5.0	2.0	0.4

F. Generation Outage(MW)

18462	7012	1740	588	34809
15973	9420	6870	11	46014
34435	16432	8610	600	80823
	15973	15973 9420	15973 9420 6870	9420 6870 11

G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	395	1090	423	414	12	2334
Lignite	21	13	38	0	0	72
Hydro	134	52	86	40	9	320
Nuclear	29	28	54	0	0	110
Gas, Naptha & Diesel	15	54	16	0	22	107
RES (Wind, Solar, Biomass & Others)	82	96	150	2	0	328
Total	675	1333	766	455	43	3272
Share of RES in total generation (%)	12.08	7.19	19.52	0.35	0.07	10.04
Share of Non-fossil fuel (Hydro, Nuclear and RES) in total generation (%)	36.15	13.15	37.72	9.05	21.21	23.18

H. All India Demand Diversity Factor

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Based on Regional Max Demands	1.041
Based on State Max Demands	1.090

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

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

		IN	ΓER-REGI	ONAL EXCHA	ANGES	Date of I	Reporting :	1-Dec-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)						
2	765kV	GAYA-VARANASI SASARAM-FATEHPUR	D/C S/C	0	948 544	0.0	7.1	-12.8 -7.1
3	70587	GAYA-BALIA	S/C	0	371	0.0	6.2	-6.2
4	HVDC	ALIPURDUAR-AGRA	-	0	0	0.0	0.0	0.0
5		PUSAULI B/B	S/C	0	198	0.0	4.7	-4.7
7	-	PUSAULI-VARANASI	S/C	0	140 142	0.0	2.4	-2.4 -2.1
8	-	PUSAULI -ALLAHABAD MUZAFFARPUR-GORAKHPUR	S/C D/C	0	1070	0.0	15.4	-2.1
9	400 kV	PATNA-BALIA	Q/C	0	886	0.0	14.6	-14.6
10	1	BIHARSHARIFF-BALIA	D/C	0	338	0.0	4.5	-4.5
11		MOTIHARI-GORAKHPUR	D/C	0	4	0.0	0.0	0.0
12		BIHARSHARIFF-VARANASI	D/C	0	435	0.0	5.2	-5.2
13	220 kV	PUSAULI-SAHUPURI	S/C	2	74	0.0	0.5	-0.5
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	U	ER-NR	0.0 0.4	75.4	0.0 -75.0
Import/F	Export of	ER (With WR)			12K-14K	U. T	13.4	-13.0
18			Q/C	1078	0	15.9	0.0	15.9
	765 kV	JHARSUGUDA-DHARAMJAIGARH	`					
19 20	1	NEW RANCHI-DHARAMJAIGARH JHARSUGUDA-DURG	D/C D/C	364 22	431 279	0.0	2.8	-0.4 -2.8
21	400	JHARSUGUDA-BAIGARH	Q/C	236	232	0.0	0.5	-2.8
22	400 kV	RANCHI-SIPAT	D/C	158	133	0.5	0.0	0.5
23	220 kV	BUDHIPADAR-RAIGARH	S/C	0	116	0.0	1.7	-1.7
24	220 K 1	BUDHIPADAR-KORBA	D/C	137	1	1.6	0.0	1.6
					ER-WR	18.1	5.3	12.8
	-	ER (With SR)	n/a	0.0	1040.0	0.0	22.2	22.2
25 26	765 kV	ANGUL-SRIKAKULAM JEYPORE-GAZUWAKA B/B	D/C D/C	0.0	1940.0	0.0	32.3	-32.3
27	HVDC LINK	TALCHER-KOLAR BIPOLE	D/C D/C	0.0	535.0 1981.0	0.0	12.4 41.8	-12.4 -41.8
28	400 kV	TALCHER-I/C	D/C	657.0	989.0	0.0	6.6	-6.6
29	220 kV	BALIMELA-UPPER-SILERRU	S/C	1.0	0.0	0.0	0.0	0.0
					ER-SR	0.0	86.5	-86.5
Import/E	Export of	ER (With NER)						
30	400 kV	BINAGURI-BONGAIGAON	D/C	344	56	4.7	0.0	5
31		ALIPURDUAR-BONGAIGAON	D/C	387	66	5.1	0.0	5
32	220 kV	ALIPURDUAR-SALAKATI	D/C	73	33	0.8	0.0	1
Import/E	Export of	NER (With NR)			ER-NER	10.7	0.0	10.7
33	HVDC	BISWANATH CHARIALI-AGRA		470	0	11.7	0.0	11.7
	1				NER-NR		0.0	11.7
Import/F	Export of	WR (With NR)						1
34								
35	1	CHAMPA-KURUKSHETRA	D/C	0	902	0.0	19.3	-19.3
	HVDC	V'CHAL B/B	D/C	244	0	6.0	0.0	6.0
36	HVDC	V'CHAL B/B APL -MHG	D/C D/C	244 0	0 1270	6.0 0.0	0.0 31.6	6.0 -31.6
36 37	HVDC	V'CHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	244 0 0	0 1270 2119	6.0 0.0 0.0	0.0 31.6 34.8	6.0 -31.6 -34.8
36 37 38	HVDC	V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR	D/C D/C D/C D/C	244 0 0 0	0 1270 2119 1700	6.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1	6.0 -31.6 -34.8 -21.1
36 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	244 0 0 0 0 465	0 1270 2119 1700 741	6.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5	6.0 -31.6 -34.8 -21.1 -25.5
36 37 38 39 40		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	244 0 0 0 0 465 595	0 1270 2119 1700 741	6.0 0.0 0.0 0.0 0.0 0.0 9.4	0.0 31.6 34.8 21.1 25.5 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4
36 37 38 39		V'CHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI	D/C D/C D/C D/C D/C D/C	244 0 0 0 0 465	0 1270 2119 1700 741	6.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0
36 37 38 39 40 41		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	244 0 0 0 0 465 595 0	0 1270 2119 1700 741 0	6.0 0.0 0.0 0.0 0.0 0.0 9.4 0.0	0.0 31.6 34.8 21.1 25.5 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4
36 37 38 39 40 41 42	765 kV	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	244 0 0 0 0 465 595 0 17	0 1270 2119 1700 741 0 1266 862	6.0 0.0 0.0 0.0 0.0 0.0 9.4 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3
36 37 38 39 40 41 42 43		VCHAL 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	244 0 0 0 465 595 0 17 105	0 1270 2119 1700 741 0 1266 862 150	6.0 0.0 0.0 0.0 0.0 0.0 9.4 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5
36 37 38 39 40 41 42 43 44	765 kV	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	244 0 0 0 0 465 595 0 17 105 205	0 1270 2119 1700 741 0 1266 862 150 268	6.0 0.0 0.0 0.0 0.0 0.0 9.4 0.0 0.0 0.5 0.8	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8
36 37 38 39 40 41 42 43 44 45 46 47	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	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	244 0 0 0 465 595 0 17 105 205 986 262 26	0 1270 2119 1700 741 0 1266 862 150 268 0 178	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 22.5 -1
36 37 38 39 40 41 42 43 44 45 46 47	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	244 0 0 0 465 595 0 17 105 205 986 262 26 35	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0 1	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 -0.5 0.8 22.5 -1 1.2 -1.1
36 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	244 0 0 0 465 595 0 17 105 205 986 262 26 35 78	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0 1 0.0 1.2	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 22.5 -1 1.2 -1.1
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	- 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	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	244 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0 1 0.0 1.2 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 22.5 -1 1.2 -1.1 0.8 0.2
36 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	244 0 0 0 465 595 0 17 105 205 986 262 26 35 78	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0 1 0.0 1.2 0.0 0.1	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 22.5 -1 1.2 -1.1 0.8 0.2
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50	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-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	244 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0 1 0.0 1.2 0.0	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 22.5 -1 1.2 -1.1 0.8 0.2
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	765 kV 400 kV 220 kV 132kV	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-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	244 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 -22.5 -1 1.2 -1.1 0.8 0.2 0.0 -125.3
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	765 kV 400 kV 220 kV 132kV	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	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	244 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 0.0 1 0.0 1.2 0.0 0.1	6.0 -31.6 -34.8 -21.1 -25.5 -9.4 -27.0 -5.3 -0.5 -1 -1.2 -1.1 -0.8 -0.2 -0.0
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	765 kV 400 kV 220 kV 132kV Export of HVDC LINK	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-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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8 0.3 0.0 41.5	0.0 31.6 34.8 21.1 25.5 0.0 27.0 0.0 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 22.5 -1 1.2 -1.1 0.8 0.2 0.0 -125.3
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51	765 kV 400 kV 220 kV 132kV Export of HVDC	VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI CHITTORGARI-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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 9.4 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8 0.3 0.0 41.5	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8	6.0 -31.6 -34.8 -21.1 -25.5 -27.0 -5.3 -0.5 -0.8 -22.5 -1 -1.2 -1.1 -0.8 -0.2 -0.0 -125.3 -14.8 -0.0
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 Import/F 52 53 54	765 kV 400 kV 220 kV 132kV Export of HVDC LINK	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	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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 5.3 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8	6.0 -31.6 -34.8 -21.1 -25.5 -9.4 -27.0 -5.3 -0.5 -0.8 -22.5 -1 -1.2 -1.1 -0.8 -0.2 -0.0 -125.3 -14.8 -14.8 -14.8 -14.8 -14.6 -31.5 -10.4
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 S1 S2 S3 S4 S5 S6 S7	765 kV 400 kV 220 kV 132kV Export of HVDC LINK 765 kV 400 kV	VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATTA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJAL-PUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHASWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-CHIKODI	D/C	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8 0.3 0.0 41.5	0.0 31.6 34.8 21.1 25.5 0.0 0.0 27.0 5.3 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8 14.8 0.0 15.3 31.5 0.0	6.0 -31.6 -34.8 -21.1 -25.5 -9.4 -27.0 -5.3 -0.5 -0.8 -22.5 -1 -1.2 -1.1 -0.8 -1.2 -1.4.8 -0.0 -14.6 -31.5 -10.4 -0.0
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	- 765 kV - 400 kV - 220 kV - 132kV Export of HVDC LINK - 765 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-RANPUR BHANPURA-RANPUR BHANPURA-WORAK MEHGAON-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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715 0 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 27.0 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8 14.8 0.0 15.3 31.5 0.0 0.0 1.4	6.0 -31.6 -34.8 -21.1 -25.5 -9.4 -27.0 -5.3 -0.5 -0.8 -22.5 -1 -1.2 -1.1 -0.8 -1.2 -1.4.8
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 S1 S2 S3 S4 S5 S6 S7	765 kV 400 kV 220 kV 132kV Export of HVDC LINK 765 kV 400 kV	VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATTA-ORAI CHITTORGARH-BANASKANTHA ZERDA-KANKROLI ZERDA -BHINMAL VCHAL -RIHAND RAPP-SHUJAL-PUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHASWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-KUDGI KOLHAPUR-CHIKODI	D/C	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8 0.3 0.0 41.5	0.0 31.6 34.8 21.1 25.5 0.0 27.0 27.0 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8 14.8 0.0 15.3 31.5 0.0 0.0 1.4	6.0 -31.6 -34.8 -21.1 -25.5 -9.4 -27.0 -5.3 -0.5 -0.8 -22.5 -1 -1.2 -1.1 -0.8 -1.2 -1.4.8 -1.5
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 S1 S2 S3 54 55 56 57 58	765 kV 400 kV 220 kV 132kV Export of HVDC LINK 765 kV 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-RANPUR BHANPURA-RANPUR BHANPURA-WAURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-VUDGI 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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715 0 0 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 31.6 34.8 21.1 25.5 0.0 27.0 27.0 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8 14.8 0.0 15.3 31.5 0.0 0.0 1.4	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 -22.5 -1 1.2 -1.1 0.8 0.2 0.0 -125.3 -14.8 0.0 -14.6 -31.5 10.4 0.0 -1.4
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 (mport/F 52 53 54 55 56 57 58 59	765 kV 400 kV 220 kV 132kV Export of HVDC LINK 765 kV 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-WALIANIA 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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715 0 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8 0.3 0.0 41.5	0.0 31.6 34.8 21.1 25.5 0.0 27.0 27.0 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8 14.8 0.0 15.3 31.5 0.0 0.0 1.4	6.0 -31.6 -34.8 -21.1 -25.5 9.4 -27.0 -5.3 0.5 0.8 -22.5 -1 1.2 -1.1 0.8 0.2 0.0 -125.3 -14.8 0.0 -14.6 -31.5 10.4 0.0 -1.4 1.5 -50.4
36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 S1 S2 S3 54 55 56 57 58	765 kV 400 kV 220 kV 132kV Export of HVDC LINK 765 kV 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-RANPUR BHANPURA-RANPUR BHANPURA-WAURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU SOLAPUR-RAICHUR WARDHA-NIZAMABAD KOLHAPUR-VUDGI 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	244 0 0 0 0 465 595 0 17 105 205 986 262 26 35 78 48 0 0 0 491 1282 715 0 0 0	0 1270 2119 1700 741 0 1266 862 150 268 0 178 128 112 4 29 0 WR-NR	6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.5 0.8 22.5 0 1.2 0.1 0.8 0.3 0.0 41.5	0.0 31.6 34.8 21.1 25.5 0.0 27.0 27.0 0.0 0.0 1 0.0 1.2 0.0 0.1 0.0 166.8 14.8 0.0 15.3 31.5 0.0 0.0 1.4	6.0 -31.6 -34.8 -21.1 -25.5 -9.4 -27.0 -5.3 -0.5 -0.8 -22.5 -1 -1.2 -1.1 -0.8 -1.2 -1.4.8 -1.5 -1.4.8 -1.5 -1.4.8 -1.5 -1.4.8 -1.5 -1.4.8 -1.5 -1.4.8 -1.5