

# 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: 23<sup>rd</sup> Jan 2019

Τо

- 1. कार्यकारी निदेशक, पू.क्षे.भा.प्रे.के.,14, गोल्फ क्लब रोड, कोलकाता ७०००३३ Executive Director, ERLDC, 14 Golf Club Road, Tolleygunge, 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 ७९३००६ Executive Director, NERLDC, Dongteih, Lower Nongrah, Lapalang, Shillong - 793006, Meghalaya
- 5. कार्यकारी निदेशक , द .क्षे .भा .प्रे .के.,२९ , रेस कोर्स क्रॉस रोड, बंगलुरु –५६०००९ Executive Director, SRLDC, 29, Race Course Cross Road, Bangalore-560009

Sub: Daily PSP Report for the date 22.01.2019.

महोदय/Dear Sir.

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 22-जनवरी-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 22<sup>nd</sup> January 2019, is available at the NLDC website.

धन्यवाद,

## पॉवर सिस्टम ऑपरेशन कारपोरेशन लिमिटेड राष्ट्रीय भार प्रेषण केंद्र, नई दिल्ली

Report for previous day Date of Reporting 23-Jan-19

#### A. Maximum Demand

	NR	WR	SR	ER	NER	Total
Demand Met during Evening Peak hrs(MW) (at 1900 hrs; from RLDCs)	42720	47808	40841	18556	2431	152356
Peak Shortage (MW)	1205	124	-231	238	24	1360
Energy Met (MU)	799	1114	920	374	42	3248
Hydro Gen (MU)	120	27	79	28	7	261
Wind Gen (MU)	3	33	21			57
Solar Gen (MU)*	13.48	20.1	74.59	0.75	0.05	109
Energy Shortage (MU)	11.3	1.5	0.0	0.7	0.4	13.8
Maximum Demand Met during the day	43690	54711	42848	19187	2532	155237
(MW) & time (from NLDC SCADA)	18:58	10:22	07:54	18:50	17:45	18:58

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 0.062 0.23 10.45 11.89 64.61 23.51

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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	4985	0	92.4	26.7	-0.1	90	0.0
	Haryana	6037	275	97.9	53.9	0.3	324	1.6
	Rajasthan	11404	0	208.1	69.1	-4.3	479	0.0
	Delhi	3851	0	67.7	52.6	-1.5	202	0.0
NR	UP	12148	650	231.2	88.7	0.5	507	0.0
	Uttarakhand	1719	0	28.6	21.3	-1.8	256	0.1
	HP	1483	0	27.7	23.2	-1.3	64	0.0
	J&K	2340	570	41.1	40.6	-6.6	149	9.5
	Chandigarh	221	0	3.8	3.7	0.1	44	0.0
	Chhattisgarh	3690	0	79.9	38.5	0.7	424	1.5
	Gujarat	15252	0	329.3	92.1	2.4	548	0.0
	MP	12997	0	238.3	126.5	-1.5	732	0.0
14/15	Maharashtra	20612	0	417.1	128.2	1.2	552	0.0
WR	Goa	498	0	12.0	10.9	0.4	81	0.0
	DD	317	0	7.0	6.8	0.2	34	0.0
	DNH	783	0	18.1	18.0	0.1	38	0.0
	Essar steel	568	0	12.0	13.0	-1.0	258	0.0
	Andhra Pradesh	8210	0	166.6	63.5	0.4	610	0.0
	Telangana	9134	0	184.4	72.4	0.8	617	0.0
SR	Karnataka	11540	0	216.2	84.2	0.5	723	0.0
JK.	Kerala	3378	0	63.9	47.1	0.8	306	0.0
	Tamil Nadu	13867	0	281.6	145.5	-0.5	493	0.0
	Pondy	369	0	7.0	7.3	-0.3	63	0.0
	Bihar	4226	0	75.8	69.7	0.8	460	0.0
	DVC	3143	0	66.1	-45.9	1.4	396	0.3
ER	Jharkhand	1122	152	24.5	17.2	0.6	169	0.5
EN	Odisha	4387	0	81.9	29.7	1.8	267	0.0
	West Bengal	6658	0	124.5	22.1	1.6	309	0.0
	Sikkim	95	0	1.7	1.9	-0.3	18	0.0
	Arunachal Pradesh	112	2	2.1	2.0	0.1	35	0.0
	Assam	1398	11	23.5	18.0	1.7	124	0.3
	Manipur	174	2	2.6	3.0	-0.4	25	0.0
NER	Meghalaya	377	0	6.2	5.5	-0.2	44	0.0
	Mizoram	96	3	1.9	1.7	0.0	12	0.0
	Nagaland	126	1	2.1	2.0	-0.1	51	0.0
	Tripura	282	0	3.8	3.8	0.2	47	0.0

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	1.4	-7.1	-14.2
Day peak (MW)	186.9	-310.0	-820.0

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	140.4	-171.8	100.0	-68.0	0.2	0.7
Actual(MU)	119.9	-168.1	101.4	-56.9	0.6	-3.1
O/D/U/D(MU)	-20.5	3.7	1.4	11.1	0.4	-3.9

## F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	2870	13946	6602	2245	207	25869
State Sector	11480	16169	9130	5365	50	42194
Total	14350	30115	15732	7610	256	68063

#### G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Coal	467	1144	501	417	10	2539
Lignite	18	17	54	0	0	89
Hydro	120	27	79	28	7	261
Nuclear	24	28	32	0	0	83
Gas, Naptha & Diesel	27	43	18	0	28	116
RES (Wind, Solar, Biomass & Others)	46	54	138	1	0	238
Total	702	1312	822	445	45	3326
Share of RES in total generation (%)	6.50	4.09	16.78	0.18	0.11	7 16

Share of RES in total generation (%)	6.50	4.09	16.78	0.18	0.11	7.16
Share of Non-fossil fuel (Hydro, Nuclear and	27.06	9 22	30.19	6.42	16.50	17.50
RES) in total generation (%)	27.00	8.23	30.19	0.42	10.50	17.50

H. Diversity Factor
All India Demand Diversity Factor
1.050
Diversity factor = Sum of regional maximum demands / All India maximum demand

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

						Date of I	Reporting	23-Jan-
								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)
mport/E	Export of	ER (With NR) GAYA-VARANASI	D/C	118	411	0.0	7.0	-7.0
2	765kV	SASARAM-FATEHPUR	S/C	103	273	0.0	2.2	-7.0
3		GAYA-BALIA	S/C	0	103	0.0	3.7	-3.7
4	HVDC	ALIPURDUAR-AGRA	-	0	0	0.0	0.0	0.0
5		PUSAULI B/B	S/C	0	149	0.0	3.8	-3.8
6		PUSAULI-VARANASI	S/C	0	122	0.0	0.0	0.0
7		PUSAULI -ALLAHABAD	S/C D/C	0	103 555	0.0	7.2	-1.4 -7.2
9	400 kV	MUZAFFARPUR-GORAKHPUR PATNA-BALIA	Q/C	0	886	0.0	12.4	-12.4
10	400 K	BIHARSHARIFF-BALIA	D/C	0	293	0.0	4.1	-4.1
11	1	MOTIHARI-GORAKHPUR	D/C	0	402	0.0	5.7	-5.7
12		BIHARSHARIFF-VARANASI	D/C	63	227	0.0	2.1	-2.1
13	220 kV	PUSAULI-SAHUPURI	S/C	0	159	0.0	2.9	-2.9
14		SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	132 kV	GARWAH-RIHAND	S/C	25	0	0.6	0.0	0.6
16	KY	KARMANASA-SAHUPURI	S/C	36	0	0.6	0.0	0.6
17		KARMANASA-CHANDAULI	S/C	0	0	0.0	0.0	0.0
nport/E	Export of	ER (With WR)			ER-NR	1.3	52.3	-51.1
18	765 kV	JHARSUGUDA-DHARAMJAIGARH S/C	D/C	1657	0	28.7	0.0	28.7
19		NEW RANCHI-DHARAMJAIGARH	D/C	423	679	0.0	3.2	-3.2
20	400 kV	JHARSUGUDA-RAIGARH	Q/C	258	172	0.4	0.0	0.4
21		RANCHI-SIPAT	D/C	218	164	0.7	0.0	0.7
22	220 kV	BUDHIPADAR-RAIGARH BUDHIPADAR-KORBA	S/C D/C	18 105	79 36	0.0	0.8	-0.8 0.7
23		DUDHIPADAR-KURBA	D/C	103	ER-WR	30.5	4.0	26.5
	_	ER (With SR)		1	T	1		1
24	765 kV	ANGUL-SRIKAKULAM	D/C	0.0	1573.0	0.0	23.4	-23.4
25	HVDC LINK	JEYPORE-GAZUWAKA B/B	D/C	0.0	647.0	0.0	16.0	-16.0
26 27		TALCHER-KOLAR BIPOLE	D/C	0.0	1979.0	0.0	44.4	-44.4 -10.4
28	400 kV 220 kV	TALCHER-I/C BALIMELA-UPPER-SILERRU	D/C S/C	1.0	371.0 0.0	0.0	0.0	0.0
			ı	U.	ER-SR	0.0	83.8	-83.8
nport/E	Ĺ	ER (With NER) BINAGURI-BONGAIGAON	D/C	328	35	5.3	0.0	5
30	400 kV	ALIPURDUAR-BONGAIGAON	D/C	450	0	8.0	0.0	8
31	220 kV	ALIPURDUAR-SALAKATI	D/C	82	17	1.0	0.0	1
nnort/E	Export of	NER (With NR)			ER-NER	14.3	0.0	14.3
npor a z		HER (HILLIAN)		665		15.8	0.0	15.8
32	HVDC	BISWANATH CHARIALI-AGRA	-	665	0			
	•		-	003	0 NER-NR	15.8	0.0	15.8
nport/E	•	WR (With NR)	- D/C		NER-NR			
nport/E	Export of	WR (With NR) CHAMPA-KURUKSHETRA	D/C	0	NER-NR 1309	0.0	26.2	-26.2
33 34	•	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B	D/C	0 241	1309 0	0.0 6.0	26.2 0.0	-26.2 6.0
nport/E	Export of	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG	-	0 241 0	1309 0 1734	0.0 6.0 0.0	26.2 0.0 33.8	-26.2 6.0 -33.8
33 34 35	Export of	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B	D/C D/C	0 241	1309 0	0.0 6.0	26.2 0.0	-26.2 6.0
33 34 35 36	Export of	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA	D/C D/C D/C	0 241 0 200	NER-NR  1309 0 1734 1084	0.0 6.0 0.0 0.0	26.2 0.0 33.8 26.2	-26.2 6.0 -33.8 -26.2
33 34 35 36 37	Export of HVDC	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL -MHG  GWALIOR-AGRA  PHAGI-GWALIOR	D/C D/C D/C D/C	0 241 0 200 566	NER-NR  1309 0 1734 1084 1074	0.0 6.0 0.0 0.0 0.0	26.2 0.0 33.8 26.2 8.4	-26.2 6.0 -33.8 -26.2 -8.4
33 34 35 36 37 38	Export of HVDC	WR (With NR)  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	0 241 0 200 566 235	NER-NR  1309 0 1734 1084 1074 605	0.0 6.0 0.0 0.0 0.0 0.0	26.2 0.0 33.8 26.2 8.4 12.4	-26.2 6.0 -33.8 -26.2 -8.4 -12.4
33 34 35 36 37 38 39	Export of HVDC	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-KANKROLI	D/C D/C D/C D/C D/C S/C S/C S/C	0 241 0 200 566 235 494	NER-NR  1309 0 1734 1084 1074 605 0	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8	26.2 0.0 33.8 26.2 8.4 12.4 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8
33 34 35 36 37 38 39 40 41	Export of HVDC	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-KANKROLI ZERDA - BHINMAL	D/C D/C D/C D/C D/C S/C S/C S/C S/C	0 241 0 200 566 235 494 0 750	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 3.2 -0.2
33 34 35 36 37 38 39 40 41 42 43	HVDC 765 kV	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR IABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI 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	0 241 0 200 566 235 494 0 750 418	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -12.4 -21.2 3.2 -0.2
33 34 35 36 37 38 39 40 41 42 43	HVDC 765 kV	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-KANKROLI ZERDA - BHINMAL VCHAL - RIHAND RAPP-SHUJALPUR	D/C D/C D/C D/C D/C D/C S/C S/C S/C S/C S/C D/C	0 241 0 200 566 235 49 0 750 418 966 556	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -9.8 -21.2 3.2 -0.2 19.0
33 34 35 36 37 38 39 40 41 42 43 44 45	HVDC 765 kV	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABALPUR-ORAI GWALIOR-ORAI SATNA-ORAI ZERDA-KANKROLI ZERDA - BHINMAL VCHAL - RIHAND RAPP-SHUJALPUR BADOD-KOTA	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	0 241 0 200 566 235 494 0 750 418 966 556 86	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -9.8 -21.2 3.2 -0.2 19.0 1
33 34 35 36 37 38 39 40 41 42 43 44 45	HVDC 765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  ZERDA-KANKROLI  ZERDA -BHINMAL  VCHAL -RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-MORAK	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	0 241 0 200 566 235 494 0 750 418 966 556 86	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 3.2 -0.2 19.0 1 1.2 -0.5
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	HVDC 765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  ZERDA-KANKROLI  ZERDA -BHINMAL  VCHAL -RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-MORAK  MEHGAON-AURAIYA	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	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48	220 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-MORAK  MEHGAON-AURAIYA  MALANPUR-AURAIYA	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	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.0 0.1 0.9 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	220 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA - BHINMAL  VCHAL - RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	Export of HVDC  765 kV  400 kV  220 kV  132kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA - BHINMAL  VCHAL - RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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	0 241 0 200 566 235 494 0 750 418 966 556 86 91 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.1 0.0 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -9.8 -21.2 3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9
33 34 35 36 37 38 38 39 40 41 42 43 44 45 46 47 47 48 49 port/F 50	Total Control of the	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 0.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 129.4	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -12.4 3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9
33 34 35 36 37 38 38 39 40 41 42 43 44 45 46 47 48 49 50 51	Export of HVDC  765 kV  400 kV  220 kV  132kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  IABALPUR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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 D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 0.2 1.2 0.0 0.0 0.1 0.9 0.0 0.0 129.4	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -12.4 -3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 49 49 49 50 51 52	Total Control of the	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 0.2 1.2 0.0 0.0 0.1 0.9 0.0 0.0 0.0 129.4 19.6 0.0 22.5	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -9.8 -21.2 3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 9	220 kV  132kV  Export of  HVDC  132kV  Total HVDC  LINK  765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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 S/C S/C S	0 241 0 200 566 2354 494 0 750 418 966 556 86 91 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR	0.0 6.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 0.0 129.4 19.6 0.0 22.5 24.3	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9 -19.6 0.0 -22.5
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	Total Control of the	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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 S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR  1002 0 1797 1839 0	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 129.4 19.6 0.0 22.5 24.3 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 51 51 52 53 54 55	220 kV  132kV  Export of  HVDC  132kV  Total HVDC  LINK  765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-MORAK  MEHGAON-AURAIYA  MALANPUR-AURAIYA  GWALIOR-SAWAI MADHOPUR  WR (With SR)  BHADRAWATI B/B  BARSUR-L.SILERU  SOLAPUR-RAICHUR  WARDHA-NIZAMABAD  KOLHAPUR-KUDGI  KOLHAPUR-CHIKODI	D/C D/C D/C D/C D/C D/C D/C 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 S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR  1002 0 1797 1839 0 0	0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 0.0 129.4 19.6 0.0 22.5 24.3 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 -9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9 -19.6 0.0 -22.5 -24.3 13.8 0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54	220 kV 220 kV 132kV 2xport of LINK 765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-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 S/C S/C S/C S/C S/C S/C S/C D/C S/C S/C S/C D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR  1002 0 1797 1839 0	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 129.4 19.6 0.0 22.5 24.3 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 3.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 49 55 51 52 53 54	220 kV 220 kV 132kV 2xport of LINK 765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-KOTA  BADOD-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 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	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR  1002 0 1797 1839 0 0 75	0.0 6.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 3.2 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 0.0 129.4 19.6 0.0 22.5 24.3 0.0 0.0 1.3	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9 -19.6 0.0 -22.5 -24.3 13.8 0.0 -1.3
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	220 kV 220 kV 132kV 2xport of LINK 765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-KOTA  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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 86 91 85 71 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR  1002 0 1797 1839 0 0 0 75 56 WR-SR	0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 0.0 129.4 19.6 0.0 22.5 24.3 0.0 0.0 1.3 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9 -19.6 0.0 -22.5 -24.3 13.8 0.0 -1.3
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	220 kV 220 kV 132kV 2xport of LINK 765 kV	WR (With NR)  CHAMPA-KURUKSHETRA  VCHAL B/B  APL-MHG  GWALIOR-AGRA  PHAGI-GWALIOR  JABALPUR-ORAI  GWALIOR-ORAI  SATNA-ORAI  ZERDA-KANKROLI  ZERDA-BHINMAL  VCHAL-RIHAND  RAPP-SHUJALPUR  BADOD-KOTA  BADOD-KOTA  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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 241 0 200 566 235 494 0 750 418 966 556 891 85 71 0 0 608 0 1043 0	NER-NR  1309 0 1734 1084 1074 605 0 1222 612 253 0 242 38 115 0 17 0 WR-NR  1002 0 1797 1839 0 0 0 75 56 WR-SR	0.0 6.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 9.8 0.0 19.0 1 1.3 0.4 1.0 0.6 0.0 42.6 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	26.2 0.0 33.8 26.2 8.4 12.4 0.0 21.2 0.0 0.2 0.0 0.1 0.9 0.0 0.0 0.0 129.4 19.6 0.0 22.5 24.3 0.0 0.0 1.3 0.0	-26.2 6.0 -33.8 -26.2 -8.4 -12.4 9.8 -21.2 -0.2 19.0 1 1.2 -0.5 1.0 0.6 0.0 -86.9 -19.6 0.0 -22.5 -24.3 13.8 0.0 -1.3