

## 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, क़त्ब इन्स्टीट्यूशनल एरिया, कटवारिया सराये, न्यू दिल्ली-110016

Ref: POSOCO/NLDC/SO/Daily PSP Report

दिनांक: 21<sup>st</sup> July 2018

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. महाप्रबंधक, ऊ. क्षे. भा. प्रे. के., 18/ ए, शहीद जीत सिंह सनसनवाल मार्ग, नई दिल्ली 110016 General Manager, 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. महाप्रबंधक , द .क्षे .भा .प्रे .के., २९ , रेस कोर्स क्रॉस रोड, बंगलुरु -560009 General Manager, SRLDC, 29, Race Course Cross Road, Bangalore-560009

## Sub: Daily PSP Report for the date 20.07.2018.

महोदय/Dear Sir,

आई०ई०जी०सी०-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 20-जुलाई-2018 की अखिल भारतीय प्रणाली की दैनिक ग्रिड निष्पादन रिपोर्ट रा०भा०प्रे०के० 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  $20^{th}$  July 2018, 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** 21-Jul-18

#### A. Maximum Demand

	NR	WR	SR	ER	NER	Total
Demand Met during Evening Peak hrs(MW) (at 2000 hrs; from RLDCs)	53887	42506	39790	19992	2596	158771
Peak Shortage (MW)	870	0	0	0	271	1141
Energy Met (MU)	1262	958	904	460	55	3639
Hydro Gen (MU)	335	18	96	92	23	563
Wind Gen (MU)	16	112	245			374
Solar Gen (MU)*	12.33	8.53	36.92	0.64	0.02	58
Energy Shortage (MU)	10.5	0.3	0.1	1.2	1.6	13.6
Maximum Demand Met during the day	57035	43933	41775	21479	2609	162639
(MW) & time (from NLDC SCADA)	21:15	19:49	07:33	00:00	19:03	19:46

B. Frequency Profile (%)

Region	FVI	<49.7	49.7-49.8	49.8-49.9	<49.9	49.9-50.05	> 50.05
All India	0.026	0.00	0.00	3.44	3.44	83.25	13.31

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
NR	Punjab	10912	0	246.3	136.1	-0.4	78	0.0
	Harvana	9145	0	191.5	147.2	1.1	267	0.0
	Rajasthan	8008	0	171.4	58.7	0.4	334	0.0
	Delhi	6034	0	123.0	94.5	-2.6	154	0.0
	UP	18635	410	406.2	200.9	1.1	265	0.0
	Uttarakhand	2029	0	45.3	25.2	1.0	368	0.5
	HP	1450	0	30.4	-1.3	5.0	258	0.0
	J&K	2049	512	41.9	20.3	-4.0	0	10.0
	Chandigarh	323	0	6.1	6.3	-0.2	32	0.0
	Chhattisgarh	3646	0	82.4	16.2	-0.9	997	0.0
	Gujarat	12472	0	271.5	60.4	2.5	782	0.0
	MP	7811	0	167.9	81.7	-0.3	348	0.0
WR	Maharashtra	17803	0	389.5	90.9	-2.3	409	0.0
WK	Goa	486	0	9.6	9.0	-0.1	32	0.3
	DD	333	0	7.4	6.3	1.1	91	0.0
	DNH	752	0	17.6	16.6	1.0	97	0.0
	Essar steel	642	0	12.0	12.6	-0.6	210	0.0
	Andhra Pradesh	7579	0	169.5	9.2	1.2	559	0.0
	Telangana	8106	0	171.7	75.9	-0.5	488	0.0
SR	Karnataka	8972	0	173.3	45.5	0.9	536	0.0
3N	Kerala	3150	0	61.3	26.9	1.0	303	0.0
	Tamil Nadu	14566	0	320.1	93.3	-2.1	327	0.0
	Pondy	377	0	7.9	8.0	-0.1	55	0.1
	Bihar	4965	0	101.2	98.7	0.2	250	0.0
	DVC	3002	0	69.1	-29.3	2.0	225	0.0
ER	Jharkhand	1121	0	22.5	20.9	-2.3	85	0.0
EN	Odisha	3928	0	78.5	38.3	1.8	250	1.2
	West Bengal	8913	0	187.9	69.8	2.6	250	0.0
	Sikkim	83	0	1.1	1.3	-0.2	15	0.0
	Arunachal Pradesh	109	3	2.0	2.3	-0.3	0	0.0
	Assam	1630	230	35.9	30.2	1.4	114	1.4
	Manipur	168	2	2.3	2.4	-0.1	10	0.1
NER	Meghalaya	299	0	5.5	1.5	0.0	35	0.0
	Mizoram	88	0	1.5	1.1	-0.2	8	0.0
	Nagaland	112	4	2.1	1.9	-0.1	6	0.0
	Tripura	265	6	5.4	4.1	-0.2	1	0.1

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

	Bhutan	Nepal	Bangladesh
Actual(MU)	32.1	-7.8	-14.2
Day peak (MW)	1499.3	-248.0	-623.7

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

	NR	WR	SR	ER	NER	TOTAL
Schedule(MU)	291.0	-271.5	15.2	-37.6	4.0	1.1
Actual(MU)	291.9	-254.3	9.9	-46.9	1.5	2.1
O/D/U/D(MU)	0.9	17.2	-5.3	-9.3	-2.5	1.0

F. Generation Outage(MW)

	NR	WR	SR	ER	NER	Total
Central Sector	4309	15587	9482	1380	77	30835
State Sector	9685	17075	10700	5705	50	43215
Total	13994	32662	20182	7085	127	74049

G. Sourcewise generation (MU)

	NR	WR	SR	ER	NER	All India
Thermal (Coal & Lignite)	560	1036	429	418	9	2452
Hydro	335	18	98	92	23	565
Nuclear	27	30	39	0	0	96
Gas, Naptha & Diesel	30	43	24	0	25	121
RES (Wind, Solar, Biomass & Others)	41	121	317	1	0	480
Total	993	1247	907	511	56	3715

Share of RES in total generation (%)	4.16	9.68	34.99	0.17	0.07	12.93
Share of Non-fossil fuel (Hydro, Nuclear and	40.72	12.52	50.02	19 17	40.02	30.72
RES) in total generation (%)	40.63	13.53	50.02	18.17	40.02	30.72

H. Diversity Factor
All India Demand Diversity Factor
1.026
Diversity factor = Sum of regional maximum demands / All India maximum demand

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

		INTE	R-REGI	ONAL EX	CHANGES	Date of I	Reporting :	21-Jul-18
								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)	D/G		100	0.0		1
2	765kV	GAYA-VARANASI SASARAM-FATEHPUR	D/C S/C	232	489	0.0 2.8	6.8 0.0	-6.8 2.8
3	70587	GAYA-BALIA	S/C	0	418	0.0	7.3	-7.3
4	HVDC	ALIPURDUAR-AGRA	-	0	684	0.0	11.7	-11.7
5		PUSAULI B/B	S/C	0	146	0.0	0.0	-3.7 0.0
6 7		PUSAULI-VARANASI PUSAULI -ALLAHABAD	S/C S/C	0	142 67	0.0	0.0	0.0
8		MUZAFFARPUR-GORAKHPUR	D/C	0	703	0.0	12.2	-12.2
9	400 kV	PATNA-BALIA	Q/C	0	909	0.0	16.3	-16.3
10		BIHARSHARIFF-BALIA	D/C	0	336	0.0	5.8	-5.8
11		MOTIHARI-GORAKHPUR	D/C	309	11	5.2	0.0	5.2
12	220 kV	BIHARSHARIFF-VARANASI PUSAULI-SAHUPURI	D/C S/C	839	202	0.0	4.0	-1.4 -4.0
14	220 KV	SONE NAGAR-RIHAND	S/C	0	0	0.0	0.0	0.0
15	122 1 17	GARWAH-RIHAND	S/C	35	0	0.3	0.0	0.3
16	132 kV	KARMANASA-SAHUPURI	S/C	0	0	0.0	0.0	0.0
17		KARMANASA-CHANDAULI	S/C	0	0	0.0	0.0	0.0
Import/H	Export of	ER (With WR)			ER-NR	8.3	69.1	-60.8
18	765 kV	JHARSUGUDA-DHARAMJAIGARH S/C	D/C	835	1	20.5	0.0	20.5
19	/05 KV	NEW RANCHI-DHARAMJAIGARH	D/C	1147	0	20.7	0.0	20.7
20	400 kV	JHARSUGUDA-RAIGARH	Q/C	1173	0	22.5	0.0	22.5
21	.00 K 1	RANCHI-SIPAT	D/C	518	0	8.3	0.0	8.3
22	220 kV	BUDHIPADAR-RAIGARH	S/C D/C	156 185	0	1.7 3.5	0.0	3.5
23		BUDHIPADAR-KORBA	D/C	185	ER-WR	77.1	0.0	77.1
Import/F	Export of	ER (With SR)				77.1	0.0	77.1
24	765 kV	ANGUL-SRIKAKULAM	D/C	200.7	922.9	0.0	6.5	-6.5
25	HVDC	JEYPORE-GAZUWAKA B/B	D/C	0.0	494.5	0.0	10.0	-10.0
26	LINK	TALCHER-KOLAR BIPOLE	D/C	0.0	1188.6	0.0	21.7	-21.7
27	400 kV	TALCHER-I/C	D/C	939.7	0.8	0.0	15.1	-15.1
28	220 kV	BALIMELA-UPPER-SILERRU	S/C	0.0	0.0 ER-SR	0.0	0.0 38.2	0.0 -38.2
Import/F	Export of	ER (With NER)				010	20.2	56.2
29	400 kV	BINAGURI-BONGAIGAON	D/C	0	440	0.0	8.0	-8
30	100 11 1	ALIPURDUAR-BONGAIGAON	D/C	17	313	0.0	2.8	-3
31	220 kV	ALIPURDUAR-SALAKATI	D/C	0	146 ER-NER	0.0	2.2	-2
Import/E	Export of	NER (With NR)			ER-NER	0.0	13.0	-13.0
32								-13.8
	HVDC	BISWANATH CHARIALI-AGRA	-	0	704	0.0	13.8	
I			-	0	704 NER-NR	0.0	13.8 13.8	-13.8
		WR (With NR)	D/C		NER-NR	0.0	13.8	-13.8
33	Export of	WR (With NR) CHAMPA-KURUKSHETRA	D/C	0		0.0	<b>13.8</b> 43.8	<b>-13.8</b> -43.8
	Export of	WR (With NR)	D/C D/C D/C		NER-NR	0.0	13.8	-13.8
33 34	Export of	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B	D/C	0	0 0	0.0 0.0 2.5	43.8 2.0	-13.8 -43.8 0.5
33 34 35	Export of HVDC	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL -MHG GWALIOR-AGRA PHAGI-GWALIOR	D/C D/C	0 0 0 0	0 0 0 0 0	0.0 2.5 0.0 0.0 0.0	43.8 2.0 43.1 57.3 27.9	-13.8 -43.8 0.5 -43.1 -57.3 -27.9
33 34 35 36 37 38	Export of HVDC	WR (With NR) CHAMPA-KURUKSHETRA VCHAL 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 0	0 0 0 0 0 0 0	0.0 2.5 0.0 0.0 0.0 0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5	-43.8 0.5 -43.1 -57.3 -27.9 -29.5
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	D/C D/C D/C D/C D/C S/C	0 0 0 0 0 0	0 0 0 0 0 0 0 0	0.0 2.5 0.0 0.0 0.0 0.0 0.0 8.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0	-43.8 0.5 -43.1 -57.3 -27.9 -29.5 8.0
33 34 35 36 37 38 39 40	Export of HVDC	WR (With NR) CHAMPA-KURUKSHETRA 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 0	0 0 0 0 0 0 0 0 0	0.0 2.5 0.0 0.0 0.0 0.0 0.0 8.0 0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5
33 34 35 36 37 38 39	Export of HVDC 765 kV	WR (With NR) CHAMPA-KURUKSHETRA 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 0 0	0 0 0 0 0 0 0 0	0.0 2.5 0.0 0.0 0.0 0.0 0.0 8.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0	-43.8 0.5 -43.1 -57.3 -27.9 -29.5 8.0
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	D/C D/C D/C D/C D/C S/C S/C S/C	0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0.0 2.5 0.0 0.0 0.0 0.0 8.0 0.0 0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2
33 34 35 36 37 38 39 40 41 42 43 44	Export of 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 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0 2.5 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2
33 34 35 36 37 38 39 40 41 42 43 44 45	Export of 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 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  2.5  0.0  0.0  0.0  0.0  0.0  0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2
33 34 35 36 37 38 39 40 41 42 43 44 45	Export of 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 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 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  2.5  0.0  0.0  0.0  0.0  0.0  0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2 0.4 1.1	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1
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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  2.5  0.0  0.0  0.0  0.0  0.0  0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2 0.4 1.1 0.5	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4
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 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 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  2.5  0.0  0.0  0.0  0.0  0.0  0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2 0.4 1.1	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	765 kV 400 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	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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  2.5  0.0  0.0  0.0  0.0  0.0  0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2 0.4 1.1 0.5 1.0	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	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-KANKROLI ZERDA-HINMAL 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  2.5  0.0  0.0  0.0  0.0  0.0  0.0	13.8 43.8 2.0 43.1 57.3 27.9 29.5 0.0 39.5 0.2 0.0 0.0 2 0.4 1.1 0.5 1.0 0.0	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49	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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  0.0	13.8  43.8  2.0  43.1  57.3  27.9  29.5  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 Import/F 50	Test port of HVDC  765 kV  400 kV  220 kV  132kV  Export of HVDC LINK	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 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  0.0	13.8  43.8  2.0  43.1  57.3  27.9  29.5  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53	220 kV  220 kV  220 kV  132kV  Export of 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-MIZAMABAD	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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  0.0	13.8  43.8  2.0  43.1  57.3  27.9  29.5  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54	Test port of HVDC  765 kV  400 kV  220 kV  132kV  Export of HVDC LINK	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	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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  0.0	13.8  43.8  2.0  43.1  57.3  27.9  29.5  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  10.5  0.0	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54 55	220 kV - 220 kV - 132kV - 2765 kV - 400 kV - 765 kV - 400 kV - 765 kV - 400 kV - 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 D/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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  0.0	13.8  43.8  2.0  43.1  57.3  27.9  29.5  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  10.5  0.0  0.0	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4  0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54 55 56	220 kV - 220 kV - 132kV - 2765 kV - 400 kV - 765 kV - 400 kV - 765 kV - 400 kV - 765 kV	WR (With NR) CHAMPA-KURUKSHETRA VCHAL B/B APL-MHG GWALIOR-AGRA PHAGI-GWALIOR JABAL-PUR-ORAI SATNA-ORAI ZERDA-KANKROLI ZERDA-BHINMAL VCHAL-RIHAND RAPP-SHUJAL-PUR 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  8.0  0.0  0.0  0	13.8  43.8  2.0  43.1  57.3  27.9  0.0  39.5  0.2  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  0.0  0.0  0.0  0.0  0.0	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4  0.0  0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54 55	220 kV - 220 kV - 132kV - 2765 kV - 400 kV - 765 kV - 400 kV - 765 kV - 400 kV - 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 D/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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  0.0	13.8  43.8  2.0  43.1  57.3  27.9  29.5  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  10.5  0.0  0.0	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4  0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54 55 56	220 kV - 220 kV - 132kV - 2765 kV - 400 kV - 765 kV - 400 kV - 765 kV - 400 kV - 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 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  8.0  0.0  0.0  0	13.8  43.8  2.0  43.1  57.3  27.9  0.0  39.5  0.2  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  10.5  0.0  0.0  0.0  0.0  0.	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4  0.0  0.0  0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54 55 56	220 kV - 220 kV - 132kV - 2765 kV - 400 kV - 765 kV - 400 kV - 765 kV - 400 kV - 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 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  8.0  0.0  0.0  0	13.8  43.8  2.0  43.1  57.3  27.9  0.0  39.5  0.2  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  10.5  0.0  0.0  0.0  0.0  0.	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4  0.0  0.0  0.0
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49  Import/F 50 51 52 53 54 55 56 57	220 kV - 220 kV - 132kV - 2765 kV - 400 kV - 765 kV - 400 kV - 765 kV - 400 kV - 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) BHARSWATI 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 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	NER-NR  0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.0  0.0  2.5  0.0  0.0  0.0  0.0  8.0  0.0  0.0  0	13.8  43.8  2.0  43.1  57.3  27.9  0.0  39.5  0.2  0.0  0.0  2  0.4  1.1  0.5  1.0  0.0  248.5  9.6  0.0  0.0  10.5  0.0  0.0  0.0  0.0  0.	-13.8  -43.8  0.5  -43.1  -57.3  -27.9  -29.5  8.0  -39.5  -0.2  21.7  -2  -0.2  -1.1  -0.4  -1.0  0.0  -215.9  -9.6  0.0  15.6  -10.5  12.4  0.0  0.0  7.9