

# 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: 17<sup>th</sup> July 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. मुख्य महाप्रबंधक, ऊ. पू. क्षे. भा. प्रे. के., डोंगतिएह, लोअर नोंग्रह , लापलंग, शिलोंग 793006 Chief General Manager, 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 16.07.2019.

महोदय/Dear Sir,

आई॰ई॰जी॰सी॰-2010 की धारा स.-5.5.1 के प्रावधान के अनुसार, दिनांक 16-जुलाई-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 16<sup>th</sup> July 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 17-Jul-19

### A. Power Supply Position at All India and Regional level

|   | NR    | WR    | SR    | ER    | NER   | Total  |
|---|-------|-------|-------|-------|-------|--------|
| Demand Met during Evening Peak hrs(MW)<br>(at 2000 hrs; from RLDCs) | 49017 | 49337 | 41780 | 20677 | 2632  | 163443 |
| Peak Shortage (MW)  | 632   | 0     | 20    | 0     | 199   | 851    |
| Energy Met (MU)   | 1106  | 1173  | 952   | 473   | 46    | 3749   |
| Hydro Gen (MU)  | 347   | 18    | 51    | 112   | 30    | 558    |
| Wind Gen (MU)   | 67    | 159   | 143   |       |       | 369    |
| Solar Gen (MU)*   | 17.64 | 21.65 | 79.51 | 2.27  | 0.05  | 121    |
| Energy Shortage (MU)  | 9.8   | 0.0   | 0.2   | 0.0   | 2.9   | 12.9   |
| Maximum Demand Met during the day                                   | 52221 | 52014 | 42647 | 22370 | 2631  | 168969 |
| (MW) & time (from NLDC SCADA)                                       | 22:38 | 14:43 | 19:29 | 00:04 | 19:52 | 22:22  |

B. Frequency Profile (%) Region All India FVI <49.7 49.7-49.8 49.8-49.9 49.9-50.05 > 50.05 0.043

| Region | States            | Max. Demand<br>Met during the<br>day (MW) | Shortage during<br>maximum Demand<br>(MW) | Energy Met (MU) | Drawal<br>Schedule (MU) | OD(+)/UD(-)<br>(MU) | Max OD<br>(MW) | Energy<br>Shortage (MU) |
|--------|-------------------|---|---|-----------------|-------------------------|---------------------|----------------|-------------------------|
|        | Punjab            | 6250                                      | 0   | 133.7           | 103.4                   | -9.5                | 80             | 0.0                     |
|        | Haryana           | 7610                                      | 0   | 157.5           | 127.5                   | -1.8                | 242            | 0.0                     |
|        | Rajasthan         | 11904                                     | 0   | 264.3           | 66.2                    | -0.6                | 499            | 0.0                     |
|        | Delhi             | 5001                                      | 0   | 108.0           | 89.8                    | -1.1                | 134            | 0.0                     |
| NR     | UP                | 17652                                     | 180                                       | 331.6           | 146.3                   | 1.5                 | 747            | 0.0                     |
|        | Uttarakhand       | 1701                                      | 0   | 36.5            | 14.5                    | 0.5                 | 306            | 0.0                     |
|        | HP                | 1372                                      | 0   | 28.3            | -2.5                    | -0.8                | 43             | 0.0                     |
|        | J&K               | 2044                                      | 511                                       | 41.3            | 18.8                    | 0.9                 | 271            | 9.8                     |
|        | Chandigarh        | 205                                       | 0   | 4.3             | 5.3                     | -1.0                | -7             | 0.0                     |
|        | Chhattisgarh      | 4632                                      | 0   | 105.6           | 47.6                    | 1.2                 | 356            | 0.0                     |
|        | Gujarat           | 16427                                     | 0   | 368.8           | 80.1                    | 1.4                 | 604            | 0.0                     |
|        | MP                | 9353                                      | 0   | 209.7           | 99.7                    | 0.0                 | 528            | 0.0                     |
| WR     | Maharashtra       | 19703                                     | 0   | 444.6           | 119.7                   | -0.2                | 420            | 0.0                     |
| WK     | Goa               | 541                                       | 0   | 11.4            | 11.0                    | -0.2                | 35             | 0.0                     |
|        | DD                | 340                                       | 0   | 7.7             | 7.1                     | 0.6                 | 52             | 0.0                     |
|        | DNH               | 809                                       | 0   | 18.9            | 19.1                    | -0.2                | 57             | 0.0                     |
|        | Essar steel       | 352                                       | 0   | 6.2             | 5.7                     | 0.6                 | 362            | 0.0                     |
|        | Andhra Pradesh    | 8408                                      | 0   | 178.1           | 23.1                    | 3.6                 | 773            | 0.0                     |
|        | Telangana         | 8392                                      | 0   | 182.5           | 77.1                    | 1.1                 | 642            | 0.0                     |
| SR     | Karnataka         | 10402                                     | 0   | 201.1           | 59.5                    | 3.4                 | 879            | 0.0                     |
| JI.    | Kerala            | 3562                                      | 0   | 70.0            | 59.2                    | 3.0                 | 477            | 0.2                     |
|        | Tamil Nadu        | 14245                                     | 0   | 312.7           | 122.6                   | 3.6                 | 923            | 0.0                     |
|        | Pondy             | 406                                       | 0   | 8.2             | 8.3                     | -0.1                | 36             | 0.0                     |
|        | Bihar             | 5065                                      | 0   | 95.7            | 92.0                    | -0.2                | 350            | 0.0                     |
|        | DVC               | 2960                                      | 0   | 66.4            | -26.2                   | -1.1                | 285            | 0.0                     |
| ER     | Jharkhand         | 1322                                      | 0   | 26.5            | 17.6                    | -0.6                | 185            | 0.0                     |
| LN     | Odisha            | 4575                                      | 0   | 103.0           | 48.4                    | 1.0                 | 402            | 0.0                     |
|        | West Bengal       | 8732                                      | 0   | 180.8           | 83.3                    | 2.6                 | 445            | 0.0                     |
|        | Sikkim            | 101                                       | 0   | 0.5             | 1.2                     | -0.7                | 20             | 0.0                     |
|        | Arunachal Pradesh | 118                                       | 2   | 2.4             | 2.5                     | -0.1                | 1              | 0.0                     |
|        | Assam             | 1616                                      | 100                                       | 27.3            | 20.4                    | 1.5                 | 186            | 2.8                     |
|        | Manipur           | 160                                       | 2   | 2.4             | 2.4                     | 0.1                 | 25             | 0.0                     |
| NER    | Meghalaya         | 310                                       | 0   | 5.3             | -1.1                    | -0.2                | 29             | 0.0                     |
|        | Mizoram           | 90  | 1   | 1.7             | 1.3                     | 0.3                 | 26             | 0.0                     |
|        | Nagaland          | 141                                       | 2   | 2.3             | 2.2                     | 0.0                 | 33             | 0.0                     |
|        | Tripura           | 267                                       | 4   | 4.2             | 3.8                     | -0.3                | 72             | 0.0                     |

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

|               | Bhutan | Nepal  | Bangladesh |
|---------------|--------|--------|------------|
| Actual(MU)    | 42.5   | -2.4   | -24.1      |
| Day peak (MW) | 1890.2 | -240.7 | -1102.0    |

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

|              | NR    | WR     | SR   | ER   | NER   | TOTAL |
|--------------|-------|--------|------|------|-------|-------|
| Schedule(MU) | 195.3 | -199.7 | 29.5 | -4.3 | -20.6 | 0.3   |
| Actual(MU)   | 142.4 | -206.3 | 71.8 | -2.9 | -18.2 | -13.1 |
| O/D/U/D(MU)  | -52.9 | -6.6   | 42.3 | 1.4  | 2.4   | -13.4 |

F. Generation Outage(MW)

| 11 otherwish outage(1111) |       |       |       |      |     |       |  |  |  |
|---------------------------|-------|-------|-------|------|-----|-------|--|--|--|
|                           | NR    | WR    | SR    | ER   | NER | Total |  |  |  |
| Central Sector            | 4209  | 16676 | 9022  | 2940 | 50  | 32897 |  |  |  |
| State Sector              | 12130 | 14670 | 7610  | 4780 | 56  | 39246 |  |  |  |
| Total                     | 16339 | 31346 | 16632 | 7720 | 106 | 72143 |  |  |  |

G. Sourcewise generation (MU)

|                                     | NR  | WR   | SR  | ER  | NER | All India |
|-------------------------------------|-----|------|-----|-----|-----|-----------|
| Coal                                | 424 | 1096 | 473 | 394 | 10  | 2397      |
| Lignite                             | 19  | 10   | 34  | 0   | 0   | 63        |
| Hydro                               | 347 | 18   | 51  | 112 | 30  | 558       |
| Nuclear                             | 27  | 30   | 58  | 0   | 0   | 116       |
| Gas, Naptha & Diesel                | 29  | 44   | 12  | 0   | 29  | 114       |
| RES (Wind, Solar, Biomass & Others) | 99  | 185  | 253 | 2   | 0   | 540       |
| Total                               | 945 | 1384 | 882 | 509 | 69  | 3788      |

| Share of RES in total generation (%)         | 10.47 | 13.40 | 28.70 | 0.45  | 0.07  | 14.25 |
|--|-------|-------|-------|-------|-------|-------|
| Share of Non-fossil fuel (Hydro, Nuclear and | 50.05 | 16.90 | 41.06 | 22.51 | 42.01 | 32.04 |
| RES) in total generation (%)                 | 50.05 | 10.90 | 41.00 | 22.51 | 43.91 | 32.04 |

H. Diversity Factor
All India Demand Diversity Factor

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

|   |  | <u>IN 1</u>  | ER-REGI                                   | ONAL EXCH  | ANGES   | Date of 1  | Reporting   | : 17-Jul-19   |
|---|--|--|---|--|---|--|---|---|
|   |  |  |   |  |   |  |   | Import=(+ve)<br>/Export =(-ve) for<br>NET (MU)  |
| Sl No   | Voltage<br>Level   | Line Details   | Circuit                                   | Max Import<br>(MW)   | Max Export<br>(MW)  | Import (MU)  | Export<br>(MU)  | NET<br>(MU)   |
|   | Export of  | ER (With NR)   |   |  |   |  |   | 1   |
| 2   | 765kV  | GAYA-VARANASI<br>SASARAM-FATEHPUR  | D/C<br>S/C                                | 345<br>273   | 56<br>177   | 3.2  | 0.0   | 3.2   |
| 3   | - TOOK V   | GAYA-BALIA   | S/C                                       | 99   | 235   | 0.0  | 1.0   | -1.0  |
| 4   | HVDC   | ALIPURDUAR-AGRA  | -   | 0  | 1802  | 0.0  | 43.5  | -43.5   |
| 5   | пурс   | PUSAULI B/B  | S/C                                       | 0  | 248   | 0.0  | 3.1   | -3.1  |
| 6<br>7  | 1  | PUSAULI-VARANASI   | S/C                                       | 0  | 217   | 0.0  | 2.9   | -2.9  |
| 8   | 1  | PUSAULI -ALLAHABAD<br>MUZAFFARPUR-GORAKHPUR  | S/C<br>D/C                                | 38<br>166  | 67<br>339   | 0.0  | 2.2   | -2.2  |
| 9   | 400 kV   | PATNA-BALIA  | Q/C                                       | 104  | 484   | 0.0  | 4.3   | -4.3  |
| 10  | 1  | BIHARSHARIFF-BALIA   | D/C                                       | 50   | 137   | 0.0  | 0.8   | -0.8  |
| 11  |  | MOTIHARI-GORAKHPUR   | D/C                                       | 5  | 247   | 0.0  | 3.0   | -3.0  |
| 12  |  | BIHARSHARIFF-VARANASI  | D/C                                       | 235  | 51  | 2.8  | 0.0   | 2.8   |
| 13  | 220 kV   | PUSAULI-SAHUPURI   | S/C                                       | 0  | 206   | 0.0  | 4.3   | -4.3  |
| 14  |  | SONE NAGAR-RIHAND  | S/C                                       | 0  | 0   | 0.0  | 0.0   | 0.0   |
| 15  | 132 kV   | GARWAH-RIHAND  | S/C                                       | 30   | 0   | 0.6  | 0.0   | 0.6   |
| 16  | 1  | KARMANASA-SAHUPURI   | S/C                                       | 0  | 0   | 0.0  | 0.0   | 0.0   |
| 17  |  | KARMANASA-CHANDAULI  | S/C                                       | 0  | 0<br>ER-NR  | 0.0  | 0.0   | 0.0   |
| Import/E  | Export of  | ER (With WR)   |   |  | ER-NK   | 10.2   | 65.2  | -55.1   |
| -   | Saport OI  | 1  | 0/2                                       | 20.62  |   | 40.0   | 0.0   | 40.0  |
| 18  | 765 kV   | JHARSUGUDA-DHARAMJAIGARH   | Q/C                                       | 2063   | 0   | 42.2   | 0.0   | 42.2  |
| 19<br>20  | - 00 K   | NEW RANCHI-DHARAMJAIGARH   | D/C                                       | 1334   | 0   | 21.6   | 0.0   | 21.6  |
| 20  |  | JHARSUGUDA-DURG<br>JHARSUGUDA-RAIGARH  | D/C<br>Q/C                                | 345<br>421   | 0   | 5.9<br>6.0   | 0.0   | 5.9<br>6.0  |
| 22  | 400 kV   | RANCHI-SIPAT   | D/C                                       | 476  | 0   | 7.0  | 0.0   | 7.0   |
| 23  | 220 kV   | BUDHIPADAR-RAIGARH   | S/C                                       | 0  | 98  | 0.0  | 1.6   | -1.6  |
| 24  | 220 K V  | BUDHIPADAR-KORBA   | D/C                                       | 175  | 0   | 3.2  | 0.0   | 3.2   |
|   |  |  |   |  | ER-WR   | 85.9   | 1.6   | 84.2  |
|   |  | ER (With SR)   |   |  |   |  |   | 1   |
| 25  | 765 kV   | ANGUL-SRIKAKULAM   | D/C                                       | 0.0  | 1845.0  | 0.0  | 24.2  | -24.2   |
| 26<br>27  | HVDC<br>LINK   | JEYPORE-GAZUWAKA B/B<br>TALCHER-KOLAR BIPOLE   | D/C<br>D/C                                | 0.0  | 319.0<br>2175.0   | 0.0  | 7.4<br>41.9   | -7.4<br>-41.9   |
| 28  | 400 kV   | TALCHER-I/C  | D/C<br>D/C                                | 329.0  | 906.0   | 0.0  | 3.8   | -3.8  |
| 29  | 220 kV   | BALIMELA-UPPER-SILERRU   | S/C                                       | 1.0  | 0.0   | 0.0  | 0.0   | 0.0   |
|   |  |  |   |  | ER-SR   | 0.0  | 73.5  | -73.5   |
| Import/E  | Export of  | 'ER (With NER)   |   |  | <u> </u>  | <u> </u>   |   | ч   |
| 30  | 400 kV   | BINAGURI-BONGAIGAON  | D/C                                       | 0  | 640   | 0.0  | 6.7   | -7  |
| 31  | 400 K V  | ALIPURDUAR-BONGAIGAON  | D/C                                       | 522  | 0   | 8.8  | 0.0   | 9   |
| 32  | 220 kV   | ALIPURDUAR-SALAKATI  | D/C                                       | 22   | 96  | 0.0  | 0.4   | 0   |
| Import/E  | Exmant of  | NER (With NR)  |   |  | ER-NER  | 8.8  | 7.0   | 1.7   |
| 33  | <del>, ^</del>   | BISWANATH CHARIALI-AGRA  |   | 0  | 803   | 0.0  | 19.8  | -19.8   |
| 33  | пос  | DIS WILL THE CHILLIAN TO THE CHILLIAN THE CHILLIAN TO THE CHIL |   | -  | NER-NR  | 0.0  | 19.8  | -19.8   |
| Import/F  | Export of  | WR (With NR)   |   |  |   |  |   |   |
| 34  |  | CHAMPA-KURUKSHETRA   | D/C                                       | 0  | 1000  | 0.0  | 11.7  | -11.7   |
| 35  | HVDC   | V'CHAL B/B   | D/C                                       | 453  | 0   | 8.3  | 0.0   | 8.3   |
| 36  |  | APL -MHG   | D/C                                       | 0  | 1168  | 0.0  | 29.1  | -29.1   |
| 37  | 1  | GWALIOR-AGRA   | D/C                                       | 0  | 1702  | 0.0  | 25.4  | -25.4   |
| 38  | 1  | PHAGI-GWALIOR  | D/C                                       | 0  | 825   | 0.0  | 11.8  | -11.8   |
| 39  | 765 kV   | JABALPUR-ORAI  | D/C                                       | 0  | 735   | 0.0  | 20.3  | -20.3   |
| 40  | 1  | GWALIOR-ORAI<br>SATNA-ORAI   | S/C<br>S/C                                | 347<br>0   | 0<br>1173   | 6.7<br>0.0   | 23.9  | 6.7<br>-23.9  |
| 42  | 1  | CHITTORGARH-BANASKANTHA  | D/C                                       | 198  | 589   | 0.0  | 3.5   | 3.5   |
| 43  | 1  | ZERDA-KANKROLI   | S/C                                       | 185  | 8   | 2.5  | 0.0   | 2.5   |
| 44  | 1  | ZERDA -BHINMAL   | S/C                                       | 377  | 0   | 7.0  | 0.0   | 7.0   |
|   |  |  |   |  |   |  | 0.0   | 22.1  |
| 45  | 400 kV   | V'CHAL -RIHAND   | S/C                                       | 966  | 0   | 22.1   | 0.0   | 0   |
| 45<br>46  | 400 kV   | V'CHAL -RIHAND<br>RAPP-SHUJALPUR   | S/C<br>D/C                                | 966<br>238   | 0<br>159  | 0  | 0   | U   |
|   | 400 kV   |  |   | 238<br>61  |   | 0  |   | 0.2   |
| 46<br>47<br>48  | <u> </u>   | RAPP-SHUJALPUR<br>BHANPURA-RANPUR<br>BHANPURA-MORAK  | D/C<br>S/C<br>S/C                         | 238<br>61<br>0   | 159<br>41<br>129  | 0<br>0.4<br>0.0  | 0<br>0.2<br>1.7   | 0.2<br>-1.7   |
| 46<br>47<br>48<br>49  | 400 kV   | RAPP-SHUJALPUR<br>BHANPURA-RANPUR<br>BHANPURA-MORAK<br>MEHGAON-AURAIYA   | D/C<br>S/C<br>S/C<br>S/C                  | 238<br>61<br>0<br>100  | 159<br>41<br>129<br>0   | 0<br>0.4<br>0.0<br>1.1   | 0<br>0.2<br>1.7<br>0.0  | 0.2<br>-1.7<br>1.1  |
| 46<br>47<br>48<br>49<br>50  | 220 kV   | RAPP-SHUJALPUR<br>BHANPURA-RANPUR<br>BHANPURA-MORAK<br>MEHGAON-AURAIYA<br>MALANPUR-AURAIYA   | D/C<br>S/C<br>S/C<br>S/C<br>S/C           | 238<br>61<br>0<br>100<br>64  | 159<br>41<br>129<br>0<br>18   | 0<br>0.4<br>0.0<br>1.1<br>0.4  | 0<br>0.2<br>1.7<br>0.0<br>0.1   | 0.2<br>-1.7<br>1.1<br>0.3   |
| 46<br>47<br>48<br>49  | <u> </u>   | RAPP-SHUJALPUR<br>BHANPURA-RANPUR<br>BHANPURA-MORAK<br>MEHGAON-AURAIYA   | D/C<br>S/C<br>S/C<br>S/C                  | 238<br>61<br>0<br>100  | 159<br>41<br>129<br>0<br>18   | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0   | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0  | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0  |
| 46<br>47<br>48<br>49<br>50<br>51  | 220 kV   | RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  | D/C<br>S/C<br>S/C<br>S/C<br>S/C           | 238<br>61<br>0<br>100<br>64  | 159<br>41<br>129<br>0<br>18   | 0<br>0.4<br>0.0<br>1.1<br>0.4  | 0<br>0.2<br>1.7<br>0.0<br>0.1   | 0.2<br>-1.7<br>1.1<br>0.3   |
| 46<br>47<br>48<br>49<br>50<br>51  | 220 kV<br>132kV<br>Export of                                     | RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR)   | D/C<br>S/C<br>S/C<br>S/C<br>S/C           | 238<br>61<br>0<br>100<br>64  | 159<br>41<br>129<br>0<br>18   | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4   | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7   | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3   |
| 46<br>47<br>48<br>49<br>50<br>51  | 220 kV<br>132kV<br>Export of                                     | RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR  | D/C<br>S/C<br>S/C<br>S/C<br>S/C<br>S/C    | 238<br>61<br>0<br>100<br>64<br>0   | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR   | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0   | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0  | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0  |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52   | 220 kV  132kV  Export of  HVDC LINK                              | RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B  | D/C<br>S/C<br>S/C<br>S/C<br>S/C<br>S/C    | 238<br>61<br>0<br>100<br>64<br>0   | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR   | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4   | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7   | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3   |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53                                     | 220 kV<br>132kV<br>Export of<br>HVDC                             | RAPP-SHUJALPUR BHANPURA-RANPUR BHANPURA-MORAK MEHGAON-AURAIYA MALANPUR-AURAIYA GWALIOR-SAWAI MADHOPUR WR (With SR) BHADRAWATI B/B BARSUR-L.SILERU  | D/C<br>S/C<br>S/C<br>S/C<br>S/C<br>S/C    | 238<br>61<br>0<br>100<br>64<br>0   | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR   | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0                                     | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7   | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3   |
| 46<br>47<br>48<br>49<br>50<br>51<br>Import/F<br>52<br>53<br>54                                      | 220 kV  132kV  Export of  HVDC LINK                              | 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 S/C S/C S/C S/C S/C S/C D/C           | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581                       | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR   | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0                              | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1                       | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1   |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/E</b><br>52<br>53<br>54<br>55                         | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>- 765 kV         | 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 S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581                       | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR<br>999<br>0<br>1432<br>2295                 | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0                              | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0               | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0  |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53<br>54<br>55                         | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>765 kV<br>400 kV | 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  | D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581<br>0                  | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR<br>999<br>0<br>1432<br>2295<br>0            | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0<br>0.0                       | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0               | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0<br>11.0                                |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53<br>54<br>55<br>56                   | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>765 kV<br>400 kV | 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-CHIKODI   | D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581<br>0<br>772           | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR<br>999<br>0<br>1432<br>2295<br>0<br>0       | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0<br>0.0<br>11.0               | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0<br>0.0        | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0<br>11.0<br>0.0                         |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53<br>54<br>55<br>56<br>57<br>58       | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>765 kV<br>400 kV | 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-CHIKODI PONDA-AMBEWADI   | D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581<br>0<br>772<br>0      | 159<br>41<br>129<br>0<br>18<br>0<br>WR-NR<br>999<br>0<br>1432<br>2295<br>0<br>0<br>77 | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0<br>0.0<br>11.0<br>0.0        | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0<br>0.0<br>0.0 | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0<br>11.0<br>0.0<br>-1.5                 |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53<br>54<br>55<br>56<br>57<br>58       | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>765 kV<br>400 kV | 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-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI  | D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581<br>0<br>772<br>0      | 159 41 129 0 18 0 WR-NR  999 0 1432 2295 0 0 77 44 WR-SR                              | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0<br>0.0<br>11.0<br>0.0<br>0.0 | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0<br>0.0<br>0.0 | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0<br>11.0<br>0.0<br>-1.5<br>0.8          |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53<br>54<br>55<br>56<br>57<br>58       | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>765 kV<br>400 kV | 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-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI BHUTAN  | D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581<br>0<br>772<br>0<br>0 | 159 41 129 0 18 0 WR-NR  999 0 1432 2295 0 0 77 44 WR-SR                              | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0<br>0.0<br>11.0<br>0.0<br>0.0 | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0<br>0.0<br>0.0 | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0<br>11.0<br>0.0<br>-1.5<br>0.8          |
| 46<br>47<br>48<br>49<br>50<br>51<br><b>Import/F</b><br>52<br>53<br>54<br>55<br>56<br>57<br>58<br>59 | 220 kV<br>132kV<br>Export of<br>HVDC<br>LINK<br>765 kV<br>400 kV | 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-CHIKODI PONDA-AMBEWADI XELDEM-AMBEWADI  | D/C S/C S/C S/C S/C S/C S/C S/C S/C S/C S | 238<br>61<br>0<br>100<br>64<br>0<br>94<br>0<br>581<br>0<br>772<br>0<br>0 | 159 41 129 0 18 0 WR-NR  999 0 1432 2295 0 0 77 44 WR-SR                              | 0<br>0.4<br>0.0<br>1.1<br>0.4<br>0.0<br>48.4<br>0.6<br>0.0<br>0.0<br>0.0<br>11.0<br>0.0<br>0.0 | 0<br>0.2<br>1.7<br>0.0<br>0.1<br>0.0<br>127.7<br>12.2<br>0.0<br>9.1<br>30.0<br>0.0<br>0.0 | 0.2<br>-1.7<br>1.1<br>0.3<br>0.0<br>-72.3<br>-11.6<br>0.0<br>-9.1<br>-30.0<br>11.0<br>0.0<br>-1.5<br>0.8<br>-40.2 |