

### **Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **FSTPP**

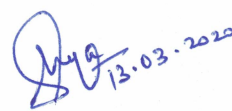
Name of the Owner Organization : **NTPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                            | Values/Data                                                                                                                                                                                                                          |
|-------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| a)    | Number of Generating Units                                                  | ST-I& II: 3*200+2*500 MW<br>ST- III: 1*500 MW                                                                                                                                                                                        |
| b)    | Total Installed Capacity (MW)                                               | ST -I& II: 1600<br>ST- III: 500                                                                                                                                                                                                      |
| c)    | Maximum Possible Ex-Bus Injection (MW)<br>(including overload , if any)     | ST - I& II: 1557.0<br>ST- III: 494.0                                                                                                                                                                                                 |
| d)    | Technical Minimum (MW)                                                      | ST -I& II: 820.3<br>ST-III: 257.8                                                                                                                                                                                                    |
| e)    | Type of Fuel                                                                | Coal                                                                                                                                                                                                                                 |
| f)    | Region                                                                      | Eastern Region-1                                                                                                                                                                                                                     |
| g)    | Bid Area                                                                    | E1                                                                                                                                                                                                                                   |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                              | <b>ST -I &amp; II: 82.2</b><br><b>ST- III: 148.7</b>                                                                                                                                                                                 |
| i)    | Variable Cost (paise/KWh up to one decimal place)                           | <b>ST -I &amp; II: 270.6</b><br><b>ST- III: 265.6</b>                                                                                                                                                                                |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                         | For 200 MW: 2<br>For 500 MW: 5                                                                                                                                                                                                       |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                       | -do-                                                                                                                                                                                                                                 |
| l)    | Start-Up time from Cold Start(in Min) and Warm Start (in Min) for each unit | ST-I&II: Cold: For 200 MW-300<br>ST-I&II: Cold: For 500 MW-390 (Ansaldo)<br>ST-I&II: Warm: For 200 MW-180<br>ST-I&II: Warm: For 500 MW-270 (Ansaldo)<br>ST- III: Cold: For 500 MW-330 (BHEL)<br>ST- III: Warm: For 500 MW-210 (BHEL) |
| m)    | Any other information                                                       | Nil                                                                                                                                                                                                                                  |

  
**SHYAM KEJRIWAL**  
**SE(CommI), ERPC**

**No.: ERPC/CommI-II/AS-3**

### **Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

To: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **KAHALGAON STPP**

Name of the Owner Organization : **NTPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data                        |
|-------|----------------------------------------------------------------------|------------------------------------|
| a)    | Number of Generating Units                                           | 4*210MW+3*500MW                    |
| b)    | Total Installed Capacity (MW)                                        | 2340                               |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 2237 (803+1434)                    |
| d)    | Technical Minimum (MW)                                               | 1195(421+774)                      |
| e)    | Type of Fuel                                                         | Bituminous/<br>Sub-Bituminous coal |
| f)    | Region                                                               | Eastern Region-1                   |
| g)    | Bid Area                                                             |                                    |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | ST-I: 104.5<br>ST-II: 108.6        |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | ST-I: 228.7<br>ST-II: 216.9        |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | ST-I/II: 1.91                      |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | ST-I/II: 4.69                      |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | ST-I: 480/200<br>ST-II: 400/170    |
| m)    | Any other information                                                | Nil                                |

  
13/03/2020

**SHYAM KEJRIWAL**  
**SE(Comml), ERPC**

**No.: ERPC/Comml-II/AS-3**



**Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **NTPC Barh**

Name of the Owner Organization : **NTPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data            |
|-------|----------------------------------------------------------------------|------------------------|
| a)    | Number of Generating Units                                           | ST- II: 2*660 MW       |
| b)    | Total Installed Capacity (MW)                                        | 1320                   |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | ST- II: 1237.5         |
| d)    | Technical Minimum (MW)                                               | ST- II: 680.63         |
| e)    | Type of Fuel                                                         | Coal                   |
| f)    | Region                                                               | ER-I                   |
| g)    | Bid Area                                                             | ER-I & II, NER         |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | <b>ST- II: 183.5</b>   |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | <b>ST- II: 300.7</b>   |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 6.19                   |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 6.19                   |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | Cold: 400<br>Warm: 240 |
| m)    | Any other information                                                | Nil                    |

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**SE(Comml), ERPC**

**No.: ERPC/Comml-II/AS-3**

**Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **TSTPP-I**

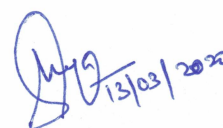
Name of the Owner Organization : **NTPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data                     |
|-------|----------------------------------------------------------------------|---------------------------------|
| a)    | Number of Generating Units                                           | 2*500 MW                        |
| b)    | Total Installed Capacity (MW)                                        | 1000                            |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 940                             |
| d)    | Technical Minimum (MW)                                               | 511.2                           |
| e)    | Type of Fuel                                                         | Coal<br>(Start up with HFO/LDO) |
| f)    | Region                                                               | ER                              |
| g)    | Bid Area                                                             |                                 |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | <b>95.6</b>                     |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | <b>200.4</b>                    |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 4.65                            |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 4.65                            |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | Cold: 360<br>Warm: 180          |
| m)    | Any other information                                                | Nil                             |



**SHYAM KEJRIWAL**  
**SE(CommI), ERPC**

**No.: ERPC/CommI-II/AS-3**



**Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **Nabinagar TPP**

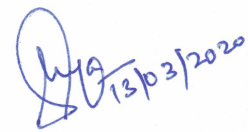
Name of the Owner Organization : **BRBCL**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

**13**

| S.No. | Title/Parameters                                                     | Values/Data            |
|-------|----------------------------------------------------------------------|------------------------|
| a)    | Number of Generating Units                                           | 4*250 MW               |
| b)    | Total Installed Capacity (MW)                                        | 750                    |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 682.5                  |
| d)    | Technical Minimum (MW) of each unit                                  | 137.5                  |
| e)    | Type of Fuel                                                         | Coal + LDO             |
| f)    | Region                                                               | ER                     |
| g)    | Bid Area                                                             | E1                     |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | <b>250.0</b>           |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | <b>244.2</b>           |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 1.33                   |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 1.33                   |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | Cold: 480<br>Warm: 300 |
| m)    | Any other information                                                | Nil                    |



**SHYAM KEJRIWAL**  
**SE(CommI), ERPC**

**No.: ERPC/CommI-II/AS-3**

### **Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **TEESTA-V HPS**

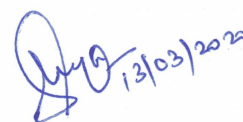
Name of the Owner Organization : **NHPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data    |
|-------|----------------------------------------------------------------------|----------------|
| a)    | Number of Generating Units                                           | 3*170 MW       |
| b)    | Total Installed Capacity (MW)                                        | 510            |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 504            |
| d)    | Technical Minimum (MW) of each unit                                  | 150            |
| e)    | Type of Fuel                                                         | Water          |
| f)    | Region                                                               | Eastern Region |
| g)    | Bid Area                                                             | E1             |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | <b>116.3</b>   |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | <b>116.3</b>   |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 50             |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 50             |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | Not Applicable |
| m)    | Any other information                                                | Nil            |



**SHYAM KEJRIWAL**  
**SE(CommI), ERPC**

**No.: ERPC/CommI-II/AS-3**

### **Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **RANGIT HPS**

Name of the Owner Organization : **NHPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data    |
|-------|----------------------------------------------------------------------|----------------|
| a)    | Number of Generating Units                                           | 3*20 MW        |
| b)    | Total Installed Capacity (MW)                                        | 60             |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 63*            |
| d)    | Technical Minimum (MW) of each unit                                  | 17             |
| e)    | Type of Fuel                                                         | Water          |
| f)    | Region                                                               | Eastern Region |
| g)    | Bid Area                                                             | E1             |
| h)    | <b>Fixed Cost (paise/KWh up to one decimal place)</b>                | <b>190.0</b>   |
| i)    | <b>Variable Cost (paise/KWh up to one decimal place)</b>             | <b>190.0</b>   |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 20             |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 20             |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | 15             |
| m)    | Any other information                                                | Nil            |

\*As per availability of water in the Rangit Reservoir.

 13/03/2020

**SHYAM KEJRIWAL**  
**SE(CommI), ERPC**

**No.: ERPC/CommI-II/AS-3**



**Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **MTPS Stage -II**

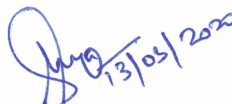
Name of the Owner Organization : **KBUNL**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data            |
|-------|----------------------------------------------------------------------|------------------------|
| a)    | Number of Generating Units                                           | 2*195 MW               |
| b)    | Total Installed Capacity (MW)                                        | 390                    |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 372.64                 |
| d)    | Technical Minimum (MW)                                               | 195.20                 |
| e)    | Type of Fuel                                                         | Coal                   |
| f)    | Region                                                               | ER-1                   |
| g)    | Bid Area                                                             | -                      |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | <b>273.4</b>           |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | <b>277.3</b>           |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 1 MW/Min               |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 1 MW/Min               |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | Cold: 380<br>Warm: 280 |
| m)    | Any other information                                                | Nil                    |

  
**SHYAM KEJRIWAL**  
**SE(CommI), ERPC**

**No.: ERPC/CommI-II/AS-3**

**Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **Maithon Power Limited**

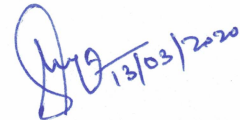
Name of the Owner Organization : **TPCL**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                     | Values/Data            |
|-------|----------------------------------------------------------------------|------------------------|
| a)    | Number of Generating Units                                           | 2*525 MW               |
| b)    | Total Installed Capacity (MW)                                        | 1050                   |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any) | 984.375                |
| d)    | Technical Minimum (MW)                                               | 541.41                 |
| e)    | Type of Fuel                                                         | Coal                   |
| f)    | Region                                                               | Eastern                |
| g)    | Bid Area                                                             | E1                     |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                       | <b>142.3</b>           |
| i)    | Variable Cost (paise/KWh up to one decimal place)                    | <b>263.1</b>           |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                  | 4.92                   |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                | 4.92                   |
| l)    | Start-Up from Cold Start and Warm Start (in Min) for each unit       | Cold: 720<br>Warm: 300 |
| m)    | Any other information                                                | Nil                    |



**SHYAM KEJRIWAL**  
**SE(Comml), ERPC**

**No.: ERPC/Comml-II/AS-3**

**Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **Nabinagar STPP**

Name of the Owner Organization : **NPGCL**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

13

| S.No. | Title/Parameters                                                          | Values/Data                        |
|-------|---------------------------------------------------------------------------|------------------------------------|
| a)    | Number of Generating Units                                                | 660 MW                             |
| b)    | Total Installed Capacity (MW)                                             | 1980(3*660)                        |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any)      | 618.75                             |
| d)    | Technical Minimum (MW)                                                    | 363                                |
| e)    | Type of Fuel                                                              | Domestic Coal                      |
| f)    | Region                                                                    | ER1                                |
| g)    | Bid Area                                                                  | E1                                 |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                            | <b>257.0</b>                       |
| i)    | Variable Cost (paise/KWh up to one decimal place)                         | <b>208.3</b>                       |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                       | 2                                  |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                     | 2                                  |
| l)    | Start-Up from Cold Start, Warm Start and Hot start (in Min) for each unit | Cold: 360<br>Warm: 245<br>Hot: 110 |
| m)    | Any other information                                                     | Nil                                |

 13/03/2020

**SHYAM KEJRIWAL**  
**SE(Comml), ERPC**

**No.: ERPC/Comml-II/AS-3**



### **Format AS3: RRAS Provider Parameters by ERPC**

FROM: **ERPC**

TO: **NODAL AGENCY (NLDC, DELHI)**

Name of the RRAS Provider Generating Station: **Darlipali STPP**

Name of the Owner Organization : **NTPC Ltd**

Validity of the information: From **01/04/2020 TO 15/04/2020**

Date: **12.03.2020**

*13*

| S.No. | Title/Parameters                                                          | Values/Data                   |
|-------|---------------------------------------------------------------------------|-------------------------------|
| a)    | Number of Generating Units                                                | 1x800 MW                      |
| b)    | Total Installed Capacity (MW)                                             | 800 MW                        |
| c)    | Maximum Possible Ex-Bus Injection (MW) (including overload , if any)      | 787.5                         |
| d)    | Technical Minimum (MW)                                                    | 412.5                         |
| e)    | Type of Fuel                                                              | Primary: Coal, Secondary: LDO |
| f)    | Region                                                                    | Eastern Region                |
| g)    | Bid Area                                                                  | E1                            |
| h)    | Fixed Cost (paise/KWh up to one decimal place)                            | <b>206.9</b>                  |
| i)    | Variable Cost (paise/KWh up to one decimal place)                         | <b>133.8</b>                  |
| j)    | Ramp-Up Rate (MW/Min) for each unit                                       | 7.5                           |
| k)    | Ramp-Down Rate (MW/Min) for each unit                                     | 7.5                           |
| l)    | Start-Up from Cold Start, Warm Start and Hot start (in Min) for each unit | Cold: 2220<br>Warm: 1500      |
| m)    | Any other information                                                     | Nil                           |

*Shyam*  
*13/03/2020*

**SHYAM KEJRIWAL**  
**SE(Comml), ERPC**

**No.: ERPC/Comml-II/AS-3**