**Annexure-I & Appendix-1**

**Annexure- 1**

**DATA ON WATER USES, WASTE WATER GENERATION AND WATER CHARGES**

**(Gas/ liquid fuel based Thermal Power Plants)**

1. **Name of the power plant:**
2. **Plant capacity and details of GT/ CCGT modules installed:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S. No.** | **No. of GT/ CCGT modules** | **Capacity (ISO & site rating) of GT/ CCGT module(s) (MW)** | **Make/ supplier**  | **Total plant capacity****(MW)** | **Year of commissioning** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1. **Fuel data:**

|  |  |  |
| --- | --- | --- |
| **Type of fuel (main/ alternate)** | **Gas/ fuel consumption at full load (MMSCMD ; TPH)** | **GCV of gas/ fuel (kcal/SCM ; kcal/kg)** |
|  |  |  |
|  |  |  |

4. **Raw Water Data:**

1. *For fresh water/ sea water*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source(s) of raw water** | **Distance of source from the plant, km** | **Allocation from each source, m3/h / cuses** | **Design raw water requirement of the plant, m3/h (m3/day)** | **Raw water storage provided in the plant, m3/ No. of days** | **Size/ area of raw water reservoir(s)** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

1. Whether plant is required to use treated sewage water also: Yes/ No

If yes, and

*already using treated sewage water*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Source(s) of treated sewage water** | **Distance of source/ STP from the plant, km** | **Contracted quantum to be used, m3/h (m3/day)** | **Broad quality parameters of treated sewage water being received** | **System provided in the plant for handling & treatment, if any** | **Details on use in different plant systems** |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

or if

*scheme for use of treated sewage water is under implementation/ planning*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Available source(s) of treated sewage water** | **Distance of source/ STP from the plant, km** | **Expected availability of treated sewage water, m3/h (m3/day)** | **Broad details of the scheme** | **Current status** |
|  |  |  |  |  |
|  |  |  |  |  |

5. **Condenser Cooling System:**

*In case of wet cooling system*

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of Cooling Towers****(IDCT/ NDCT)** | **Design CW flow unit wise, m3/h** | **Design hot water & cold water temperature, deg C** | **COC in case of Cooling Towers** |
|  |  |  |  |
|  |  |  |  |

 *In case of dry cooling system*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Capacity of the unit, MW** | **Broad details of dry cooling system/ACC provided** | **Design heat load, MWt** | **Design ambient temperature, deg C** | **Design condenser pressure, ata/ kg/cm2** |
|  |  |  |  |  |
|  |  |  |  |  |

7.  **Type of water uses & design flow/ consumption:**

|  |  |  |  |
| --- | --- | --- | --- |
| **S. No** | **Description** | **Type of water, raw/ clarified/ filtered/ DM/ CW blowdown/ waste water/ treated sewage water** | **Design requirement/ consumption, m3/h (m3/day)** |
| i) | Cooling tower make up |  |  |
| ii) | DM water (NOx control) |  |  |
| iII) | DM water make up for GT/ CCGT |  |  |
| Iv) | Potable water (plant/ colony) |  |  |
| v) | HVAC make up |  |  |
| vi) | Service water |  |  |
| vii) | Horticulture |  |  |
| viii) | Any other (specify) |  |  |
|  | Total |  |  |

8. **Waste Water Generation & Disposal:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S. No** | **Description** | **Design flow/ quantity, m3/h (m3/day)** | **Quantity used, m3/h (m3/day)** | **Balance quantity (unused), m3/h (m3/day)** |
| i) | CT Blow down  |  |  |  |
| ii) | Clarifier sludge |  |  |  |
| iii) | DM plant regeneration |  |  |  |
| iv) | Filter backwash |  |  |  |
| v) | Boiler blow down |  |  |  |
| vi) | Any other (specify) |  |  |  |
| vii) | Total |  |  |  |
| ix) | Mode of disposal of unused waste water |  |

**10. Rain Water Harvesting:**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Description** | **Detail** |
| i) | Details of rain water harvesting system provided |  |
| ii) | Size & storage capacity of rain water harvesting pond provided |  |
| iii) | Data on rain water collected & used in plant systems |  |

**11. Rate of Water Charges:**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Description** | **Detail** |
| i) | Rate of raw water charges including cess, surcharge etc., Rs/m3 |  |
| ii) | Rate of process water charges including cess, surcharge etc., Rs/m3 |  |
| iii) | Rate of waste water discharge charges including cess, surcharge etc., Rs/m3 |  |
| iv) | Rate of treated sewage water charges including cess, surcharge etc., Rs/m3 |  |
| v) | Rate of any other applicable water charges including cess, surcharge etc., Rs/m3 |  |
| vi) | Any other related charges being paid by the utility |  |

**12.** **Statement of monthly generation, water drawal, waste water generation and water charges etc.:**

 To be furnished as per **Appendix- 1** enclosed.

**13. Water balance diagram for the plant:** To be enclosed.

**14. Any other relevant information:**

**Appendix- 1**

**Statement of monthly generation, water drawal/ use, waste water generation and water charges etc.**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Sl. No. | Description | April-18 | May-18 | June-18 | July-18 | Aug-18 | Sept-18 | Oct-18 | Nov-18 | Dec-18 | Jan-19 | Feb-19 | Mar-19 |
| (i) | Electricity units generated, kWh  |  |  |  |  |  |  |  |  |  |  |  |  |
| (ii) | Quantum of water drawal (sourcewise), m3  |  |  |  |  |  |  |  |  |  |  |  |  |
| (iii) | Quantum of water considered for payment of water charges (sourcewise), Rs. |  |  |  |  |  |  |  |  |  |  |  |  |
| (iv) | Water charges paid including cess, surcharge etc., if any (sourcewise), Rs. |  |  |  |  |  |  |  |  |  |  |  |  |
| (v) | Quantum of treated sewage water used, m3  |  |  |  |  |  |  |  |  |  |  |  |  |
| (vi) | Charges paid for treated sewage water including cess, surcharge etc., if any, Rs. |  |  |  |  |  |  |  |  |  |  |  |  |
| (vii) | Quantum of treated waste water discharged from plant boundary, m3 |  |  |  |  |  |  |  |  |  |  |  |  |
| (viii) | Charges paid for discharge of treated waste water including cess, surcharge etc., if any, Rs. |  |  |  |  |  |  |  |  |  |  |  |  |
| (ix) | Any other related charges being paid, Rs.  |  |  |  |  |  |  |  |  |  |  |  |  |
| (x) | Method of measurement of raw water drawal |  |  |  |  |  |  |  |  |  |  |  |  |
| (xi) | Location of raw water drawal measurement point |  |  |  |  |  |  |  |  |  |  |  |  |
| (xii) | Method of measurement of waste water discharge |  |  |  |  |  |  |  |  |  |  |  |  |
| (xiii) | Location of waste water discharge measurement point |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  \*\*\*\*\* |