**ANNEXURE TH: DETAILS OF HYDRO PLANTS**

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| **HYDRO PLANT DETAILS** | | |
|  | **PROJECT/PLANT DETAILS** | |
| 1 | Company name: |  |
| 2 | Owner of the power station: |  |
| 3 | Project name and location: |  |
| 4 | Contact Number & Name of the Nodal person :Mr./Ms. |  |
| 5 | Total Installed Capacity (MW):(e.g.2x100mw): |  |
| 6 | Turbine type: Francis/Kaplan/Pelton/Bulb/Any other |  |
| 7 | Intake River & Diversion dam: |  |
| 8 | Hydro station type-ROR/ROR with pondage/Storage type: |  |
| 9 | In case of ROR generating station with pondage, what is the time period for which all the units  Can run at their MCR using the available water stored in the pondage (considering full pondage) |  |
|  | **RESERVOIR DETAILS** | |
| 1 | Power station-Underground/Surface: |  |
| 2 | Full Reservoir Level (FRL), minimum draw down Level (MDDL) in meters. Energy content at FRL and Target energy for financial year |  |
| 3 | Monthly design energy/10daily energy: |  |
| 4 | Water usage (other than electricity production)-Irrigation/Flood control/Bilateral treaty/hydrology: |  |
| 5 | Which are the riparian states? |  |
| 6 | Is the station part of the tandem hydrosystem? If yes then what are the constraints in operating the Station? |  |
| 7 | Which is next hydrostation (with pondage/reservoir) on the up stream and downstream side? |  |
| 8 | What is the accounting period for total water in flow sand releases from the station? |  |
| 9 | Monthly pattern of release of water (over the day too) |  |
| 10 | What are the tools for forecasting the inflow silt etc. How much early (from the generation time) in flow forecasting is available? Is there any tool for forecasting of generation from the plant? If yes, |  |
| 11 | If the reservoir water level and inflow being monitored in realtime? Whether these parameters are being  Recorded manually or automatically by a sensor? Also, Is the historical reservoir water level and in flow is |  |
|  | **BENEFICIARIES OF PLANT** | |
| 12 | Who owns the station and who operates the hydro electric station? |  |
| 13 | Which are the entities having entitlement on the power generated from the station? |  |
|  | **CONTROL/ DIRECTION** | |
| 14 | Which agency assesses the water inflows for the river basin on which the hydrostation is built? |  |
| 15 | Which are the sectors/entities that are entitled for water usage from the reservoir? |  |
| 16 | Who decides the allocation of water available for different usage such as drinking water, irrigation, industrial use, tourism, power generation? |  |
| 17 | Is the station operation governed under some watersharing treaty? |  |
| 18 | In case the hydrostation has multiple beneficiaries-Who coordinate the scheduling? |  |
| 19 | Who manages the water releases? Who decides the quantum of water available for power generation? |  |
| 20 | Where is the off take for water for irrigation/drinking water- From the upstream from the reservoir or downstream of the tailrace? What is the operating domain for the plant operator with respect to the water |  |
| 21 | What is the philosophy for dispatching the station-(managing peak demand/load following/ramping/deviationcontrol/other) |  |
| 22 | How is the station compensated for the energy generated? Is the tariff multi-part or single part? |  |
|  | **PUMPED MODE OPERATION** | |
| 23 | Pumped Storage Capability available (Y/N), If yes operational since when?/Reason for Not utilized |  |
| 24 | In case of a pumped storage station ,can the water be released when the lower reservoir is full? |  |
|  | **SCHEDULING ASPECTS** | |
| 25 | Is the Station given a day-ahead schedule? If yes, can the schedule be revised in real-time? |  |
| 26 | What are the considerations/aspects to be taken care while revising day-ahead injection schedule? |  |
|  | **OPERATIONS** | |
| 27 | Unit wise lower and upper limit of Vibration zone or Forbidden zone in MW. Specify the operating range Of each unit. |  |
| 28 | Does the station have over load capacity (Yes/No)?If yes, how much? |  |
| 29 | Time required for synchronizing the unit and Time from synchronization of full load. |  |
| 30 | Is the station capable of operating in condenser mode? If yes, has it ever operated in this mode? |  |
| 31 | Is the station capable of blackstart (Yes/No) & AGC (Yes/No). Specify the capacity of DG set? |  |
| 32 | Who assesses the performance of the station? What are the indices for measuring the performance of the station? |  |
| 33 | What is the periodicity of assessing the performance and any incentive scheme? |  |
| 34 | Whether units are capable of accepting simulated frequency signals for third party Primary Frequency Response(PFR) testing |  |
| 35 | Operational constraint |  |
| 36 | Regarding speed governor:   1. What is the minimum speed droop setting possible? 2. Whether the ripple filter is programmed at previously sampled frequency or 50 Hz? eg. If frequency change from 50.02Hz to 50.05Hz is observed by the governor, whether response shall be provided or not? 3. What is the sampling rate for monitoring and data recording in speed governor system and AVR system? 4. What is the maximum period of storage of generator data in Data Acquisition System (DAS)? e.g.1year, 3year, 5 year, etc.? |  |

**(Name and Designation of the authorized person with official seal)**

**(not below the rank of Assistant General Manager or equivalent)**

**Place: Date:**