A2. Hydro Power Plant

1	Applicant Name	
2	Contact Name	
3	Address and Applicant Details	

a) Connection

1	Connection Point	Indicates a single line diagram of the proposed Connection to the Transmission System in a hard and a soft copy.
2	Voltage	(kV) Voltage level in Connection points to the Transmission System
3	Type of Hydro Plant	Description of the Plant: with Reservoir or Run-of-River; indicators of work (total reserved volume, active reserved volume, maximal level of water, maximal level of work, minimal level of work, flows, etc)

b) Plant Capacity

1	Total Capacity of the Plant (MW)	Condition of existing plants. Capacity of new plants, divided in phases
2	Number of units and their capacity	

c) Data of Generating Units

1	Working Regimes	Maximum, Minimum, Averages.
2	Turbines	Condition, types, capacity.

3	Generator (Alternator)	Type Nominal characteristics (Sn, Pn in MVA and MW) Minimum power that the generator can produce (Pmin in MW) Generator reactive power output limits (Qmax, Qmin in MVAr) Nominal Voltage (Un in kV) Power Nominal Factor(cosØ) Capacity for Reactive Power (MVAr) Short Circuit Power (MVA) Direct synchronous reactance, Xd (in p.u of MVA) Transverse synchronous reaction Xq (in MVA p.u.) Direct Transient Reactance, X'd (in MVA p.u.) Direct Transient Reaction, X "d (in MVA p.u.) Quadrate Transient Reactance, X "q (in MVA p.u.) Negative sequence Reactance, X2 (in MVA p.u.) Zero sequence Reactance, X0 (in MVA p.u.) Nominal Speed (Nn in rot/min) Inertia Factor H (MW Sec/MVA) Volant moment (GD2 in Tm2) or Inertia Constant H (sek) Mechanical time constant, T'm (in sec) Direct transient time constant for open winding in stator, T'do (in sec) Direct sub-transient time constant for stator winding open, T "do (in sec) The quadrate sub-transient time constant for the stator winding of open, T "qo (in sec) The direct transient time constant for the stator winding of tied in short, T'd (in sec) Direct sub-transient time constant for stator winding short, T "d (in sec) The quadrate sub-transient time constant for the stator winding of connected in short, T "q (in sec) The time constant of the stator winding connected in short, Ts (no sec) Capability Curve of generator Short Circuit Saturation Curve

4	Transformer of Generator-Transformer Block	Type Nominal Power MVA Nominal Voltage kV Nominal Currents(HV/LV) in A Voltage Adjustment (Number of steps and steps ±%); Type of Tap changer (off-load/on-load) Vector group Type of voltage regulator (off load, on load) Short circuit impedance in% On Load losses in kW Off Load losses in kW Off Load current in% Cooling type (ONAN/ONAF)
5	Data on MV Network	Scheme of connection of generating units between them in medium voltage specifying: Nominal mains voltage TM Lengths of connecting lines Electrical conductor sections (cable / overhead)

d) Power for own needs

1	Total Power in MW and required MVA for auxiliary equipment	In MW and MVA
2	Total external power for Black-Start	In MW

Note 1: Direct Transient Reactance (in MVA p.u.) and short-circuit saturation curve are not required for unregulated generating units