

**ETALIN HYDRO ELECTRIC POWER COMPANY LTD. (EHEPCL)**  
**PQ. No.: EHEPCL/PQ-001/2014/Package-EM1 &EM2 Dated 18.07.2014**

**Amendment No. PQ-001/PKG-EM1 & EM2/01 Dated 29.09.2014**

Sr No	PQ Criteria	Amended/ to be read as
P-EM1 & EM2- (1)	Clause 3.3.1 (b) (i) Vertical Shaft Francis HydroTurbine:	<p>Clause 3.3.1 (b) (i) <b>Vertical Shaft Francis Hydro Turbine/Vertical Shaft Reversible Francis Pump Hydro Turbine</b>  Rated output of minimum 250 MW and rated head of minimum 340 m.</p> <p style="text-align: center;">OR</p> <p>Technical Difficulty Factor (TDF) of not less than 85000 provided one of the above mentioned criteria i.e. rated output or rated Head is met.</p> <p style="text-align: center;">OR</p> <p>Francis runner discharge diameter of 3000 mm and above and runner weight of 35 tonnes &amp; above.  TDF in this case shall mean the product of rated output in MW and rated head in meters.</p> <p>Applicant shall provide experiences in two projects; out of which at least one should be an operational project. The Applicant shall, in case of operational project (s), submit certificates issued by the Owner to demonstrate the successful operation of the above mentioned Turbine.</p>
P-EM1 & EM2- (2)	Clause 3.3.1 (b) (iv)) Vertical Shaft Synchronous Generator:	<p>In Clause 3.3.1 (b) (iv) <b>Vertical Shaft Synchronous Generator/Vertical Shaft Synchronous Generator Motor:</b>  Rated output of not less than 270 MVA and rated speed of not less than 200 rpm</p> <p style="text-align: center;">OR</p> <p>Technical Difficulty Factor (TDF) of not less than 54000 provided one of the above mentioned criteria i.e. rated output or rated speed is met.</p> <p>TDF in this case shall mean the product of rated output in MVA and rated speed in RPM.  Applicant shall provide experiences in two projects out of of which at least one should be operational projects. The Applicant shall, in case of operational project(s), submit certificates issued by the Owner to demonstrate the successful operation of the above mentioned Generator (s).</p>