

## Questionnaire to prepare a quotation for a hydropower station

### Contact details:

Company name: .....

Person in charge: .....

Street: .....

Country/Zip Code/City: .....

Phone: .....

Fax: .....

E-Mail: .....

### Your project data:

<b>1</b>	<b>Project name and location:</b> .....
<b>2</b>	<b>Gross head:</b> (vertical distance between forebay level and tailwater level) ..... m
<b>3</b>	<b>Net head</b> (gross head minus losses due to friction in penstock and other losses) ..... m
<b>4</b>	<b>Distance between turbine axis and tailwater</b> ..... m
<b>5</b>	<b>Elevation of the turbine axis</b> (meters above sea level) ..... m
<b>6</b>	<b>Available water flow (discharge)</b>  Maximum flow: ..... m <sup>3</sup> /s during ..... months/year Average flow: ..... m <sup>3</sup> /s during ..... months/year Minimum flow: ..... m <sup>3</sup> /s during ..... months/year (please attach the flow curve, if available)
<b>7</b>	<b>Requested number of turbines</b> .....
<b>8</b>	<b>Flow rate (discharge) per each turbine</b> .....m <sup>3</sup> /s

9	<b>Describe the waterway towards the turbine:</b>			
		<b>Section I</b>	<b>Section II</b>	<b>Section III</b>
	• Channel length (attach sectional drawing)	..... m	..... m	..... m
	• Penstock length	..... m	..... m	..... m
	• Internal diameter (penstock)	..... mm	..... mm	..... mm
	• Material	.....	.....	.....
	• Wall thickness	..... mm	..... mm	..... mm
	• Maximum allowed pressure surge	..... %		
	• Is a surge tank provided? <input type="checkbox"/> yes <input type="checkbox"/> no			
	<b>If a surge tank shall be provided, please send dimensions or a drawing accordingly.</b>			
10	<b>Mode of operation:</b>			
	• The unit will feed a public grid (parallel operation only), which means that in case of grid failure, the consumers, e.g. a factory, cannot be supplied with power.			<input type="checkbox"/>
	• The unit will be operated separately from the grid (isolated operation) and parallel to the national grid, which means that in case of grid failure, the consumers, e.g. a factory, can be supplied with power.			<input type="checkbox"/>
	• The unit will be operated isolated from the national grid only.			<input type="checkbox"/>
11	<b>Grid voltage:</b>		..... kV	
12	<b>Grid frequency:</b>		..... Hz	
13	<b>Auxiliary voltage (low-voltage level)</b>		..... V	
14	<b>Output:</b>			
	• Maximum allowed power output to the grid/consumers		..... kW	
	• Maximum load step to be switched in one step in case of isolated operation		..... kW	
15	<b>Generator:</b>			
	• Type:	Synchronous <input type="checkbox"/>	Induction <input type="checkbox"/>	
	• Preferred voltage:	..... kV		
16	<b>In case of an already existing hydropower station, please attach design drawings. Also, if project drawings already exist, please attach these with your enquiry.</b>			

<b>Expected scope of supply:</b>			
Turbine	<input type="checkbox"/>	Medium-voltage switchgear	<input type="checkbox"/>
Governor	<input type="checkbox"/>	High-voltage switchgear	<input type="checkbox"/>
Gearbox	<input type="checkbox"/>	Transformer	<input type="checkbox"/>
Generator	<input type="checkbox"/>	Consulting service	<input type="checkbox"/>
Low-voltage control	<input type="checkbox"/>		