



**Relio Hydro power station** is a unique smart solution using speed of water to generate electricity. It needs no dams and complex infrastructure to operate and simplicity makes it reliable and cost efficient. System is a double propeller turbine design giving over 220 Kw output when water speed is 1-4 meter / sec. On top we have a ponton that keeps all floating on water surface when it moves up and down depending of water flow variations



**Characteristics of Relio Hydro system.**

- \* Propeller design using speed of water to make up to 220 KW of electrical power
- \* No need for dams and costly infrastructure needed for most hydro power solutions
- \* Floating design that follows river water surface up and down
- \* Very attractive price / cost balance so most systems are paid very fast
- \* Produce electricity with total cost between USD 0.05-0.07 / KWH in most sites
- \* Simple design and low maintenance with a 25 year life cycle for operation
- \* More fish friendly than most other water turbines
- \* Needs 4-5 meter depth and 1.5 meter per second or more in water flow speed
- \* European design with ABB Electronics and controller.

Target area is tropical areas where there are many rivers close to cities that need cheap power.

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## Sunnytek Solar Sweden

### Sub sea hydro power system for rivers

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The relio eco-twin is a high-efficiency run-of-river twin hydroturbine for electricity generation. eco-twin turbines can be deployed in single or array configurations, depending on river conditions. The unique geometry and construction of the twin turbines allows for smooth, stable and vibration-free operation, providing constant, safe and low maintenance electricity output.

Performance	
Power generation per twin turbine	up to 750.000 kWh
Turbine revolutions	75 — 125 rpm
Flow rate	1 — 4 m / sec
Useable life span	ca. 25 -30 years
Dimensions	
Turbine diameter	2.820 m
Width	7.457 m
Length	10.67 m
Weight	ca. 9,029 kg
Construction	
Planetary Drive gearing	1 : 7.36
Generators	2 x 90 kW (110 kW)
Turbine Blades	Stainless Steel, turbine inlet secured with steel wires
Turbine Housing	Aluminium diffuser with boundary layer acceleration
Turbine Float	Float body 1.1 m height
Fish protection / blockage prevention	Wireguard
Installation	Anchor plate secured to river bed with three 63.5 mm GEWI Plus piles. Hydroturbine anchored to the anchor plate with 28 m heavy-duty chain

#### INCLUDED

- 150 m transmission cable in a protector pipe.
- ARB switching cabinet with 110 kW frequency converter to control network feed-in with surveillance modem.

#### SO NOT SEPARATELY

relio **hydrocat** catamaran boat (for crilling, anchoring, lifting, maintenance and service)

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## Sub sea hydro power system for rivers



Weight of 9 tons only makes it reasonable easy to handle and move. Optional catamaran is used for simpler service and the entire water turbine is lifted up in centre for easy maintenance.



In front there is a smart wire grid to stop floating instances in water and force fishes to move away. Propeller is a 2 blade design to get smaller objects to pass through without to much problems.

The ponton is anchored to sea bed with long chains and follow the water surface up and down. This handle rapid variation in water flow.

Many systems can be operate side by side covering a large part of river width.



