



 **HyKinetics**
flowing energy

our mission

Turning the power of water into a green, cheap and reliable source of energy with near zero environmental impact.

the market

Where the electric grid does not reach

SHP technologies provide clean and cost-effective options for generating electrical power enabling various productive uses. Combining the benefits deriving from power generation and the possibility of using new technologies (renewable energy systems) for the off-grid storage, distribution and consumption of energy, local communities or industrial equipment can leverage on the electricity they need without grid interconnection.



the market

Where the electricity power is guaranteed by

The development of electricity generation through the full and comprehensive utilization of the power of watercourses allows to increase the share of green energy produced; energy which, if not exploited, would be lost. Moreover, where the grid is unreliable, it makes electric system more resilient. At the same time, each power plant investment must pay itself off and operate competitively.

potential customers are

- 01
Large and Small Hydro Power
Companies
- 02
Multi-Utilities
- 03
Water Management Consortia
- 04
Local Communities and
Municipalities

highlights



near-zero environmental impact

No civil works; no noise impact since turbines work under water; almost complete recycling of materials and components; no impact on waterway fauna and plant conservation; no water pollution.



adaptability

Our technology allows the development of hydro-plants adaptable to almost all watercourses of different shapes and sizes. The plant is designed for the specific characteristics of a watercourse and can operate in on-grid or off-grid mode.



producibility

The HyKinetics plant producibility depends on the available watercourse energy. Each plant can deliver from 1 to 200 kW. Several plants located in series along the watercourse allow to deliver hundreds of kW.



reliability and safety

Reliability and safety are ensured by an accurate implementation throughout the plant life cycle, from design, engineering, manufacturing, testing, delivery to site up to operation. The plant management can be carried out either on site or remote mode.

Plant characteristics

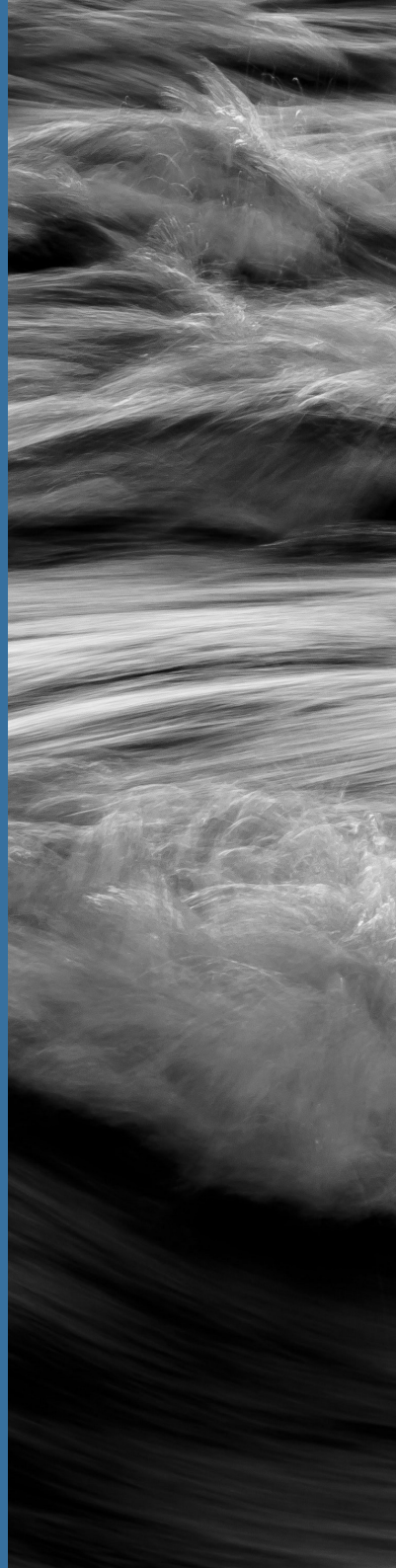
HyKinetics technology, Rebecchi Group production capacity and the methodology adopted allow to build plants that enable a full exploitation of waterways’ energy using a standardized design.

type of Hykinetics plants

MAIN CHARACTERISTICS		MINIMUM	MAXIMUM
Output (kWp)		1	200
Plant control system (NO.)		1	10
Electricity grid connection (No.)		1	
Number of turbine per plant (No.)		1	10
Number of turbine modules per turbine (No.)		1	4
Rotation axis (description)		Horizontal - Vertical	
Turbine rotational speed (rpm)		10	100
Turbine module size (mm)	Variable lenght	1.000	3.000
	Variable diameter	1.000	6.000
Min. power output waterway speed (m/s)		1	
Max. power output waterway speed (m/s)		4	
Working operating conditions (description)		Submerged	
Recycle factor by weight (%)		92	96
Maximum noise level recorded for current installations (L95 dB(A)) *)		43,0 +/- 1.6	
*) the noise level was recorded at a distance of 40 meters from the turbine			

application fields

HyKinetics plants are adaptable to many types of waterways and they are specifically designed for application on rivers and canals and connected to the electric network in on-grid or off-grid mode.



canals

Canals for irrigation use or for loading hydroelectric power plants are a very relevant field of application. The HyKinetics turbine technology allows to develop hydro-plants that can be adapted to different canal widths, depths, flow rates and types, such as trapezoidal or rectangular sections.



rivers

The plant includes a floating system anchored to the river bank. The floating system is designed to operate with very high water excursions. The presence of floating material does not obstacle operation as the turbine works completely submerged.



micro-grids

Rebecchi Group has the skills, experience and production capacity to design, engineer, build, start up and assist its clients in the development and construction of micro-grids to meet their specific needs.

life cycle

**Your water-to-wire
partner for the whole
project duration and
beyond.**

Opportunity Identification

We provide customer support for the opportunity identification & qualification



Feasibility Study

We take a project relevant factors into account, including economic, technical, legal, and scheduling considerations



Design & Engineering

We develop tailored solutions for each watercourses, mastering the most diverse challenges for each sites from concept to operation



Manufacturing & Testing

Excellence for details drives each manufacturing process to ensure maximum operational reliability throughout the entire plant life cycle



Delivery to Site & Hand Over

Assembly activities at the customer's site are carefully planned in accordance to the customers' operational, environmentally and safety conditions



Operation

We provide on-site maintenance & remote assistance in order to ensure the maximum operational efficiency and prompt intervention



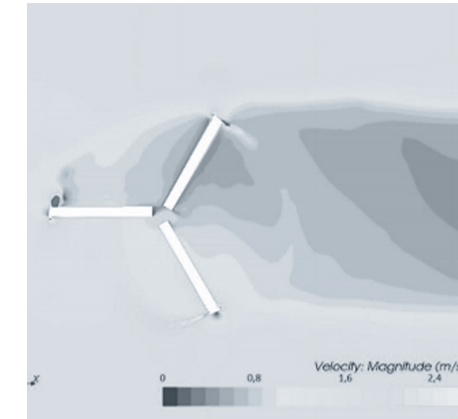
get started

The way to implement HyKinetics at your site. We offer our clients this free service as we begin our partnership.



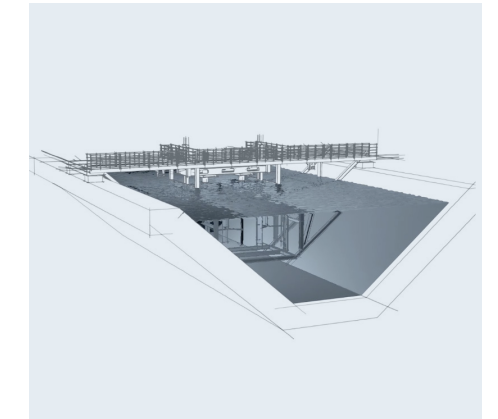
opportunity identification

Send us the main characteristics of the site you want to analyze so that we can evaluate the applicability of the HyKinetics technology on your watercourse.



feasibility study

Feasibility study takes into account all the relevant factors of a project, including economic, technical, legal and scheduling considerations to ascertain the likelihood of completing the project successfully.

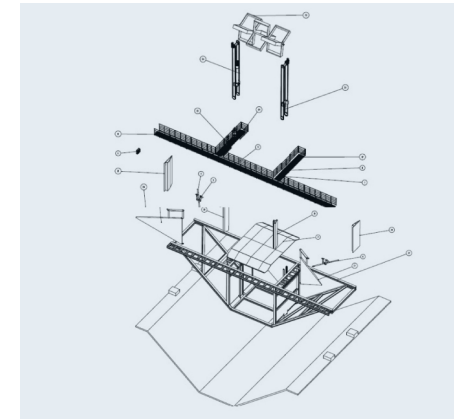


design

In close collaboration with our customers, we develop tailored solutions for each watercourse. Before the start of operation, we are able to master the most diverse challenges for each sites.

From engineering to hand over

Our engineering department has the know-how and the digital tools ideal to study and design the best solution for each type of opportunity, all this ensuring a near-zero environmental impact.



engineering

Our engineering department has the know-how and the digital tools ideal to study and design the best solution for each type of opportunity, all this ensuring a near-zero environmental impact.



manufacturing & testing

Excellence and attention for details drive each manufacturing process to ensure maximum reliability throughout the plant life cycle. Our team is wholly dedicated to continuous improvement in quality, safety and environmental sphere throughout the entire value chain. That is why simulation, quality control and testing before real-world operation is critical for us. A coordinator supervises all the activities along manufacturing cycle.



delivery to site & hand over

The assembly activities are carefully planned in accordance to customers' operational, environmental and safety requirements. The commissioning activities are carried out with a focus on end-user training. A project manager supervises all the activities throughout plant assembly and commissioning cycle, training included.

certifications

Management systems:

01

**UNI EN ISO
9001:2015**

02

**OHSAS
18001:2007**

03

**UNI EN ISO
14001:2015**

04

**UNI EN ISO
45001:2018**

Structural components and welding:

01

**EN 1090-1:
2009+A1:2011**

02

ASME IX
(Pressure Vessel and
non-destructive tests)

03

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(Italian Public
Administration)



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HyKinetics is a project by COS.B.I. S.R.L.

REBECCHI GROUP 