

MICRO HYDROPOWER PLANT CREATED IN BELGIUM TO HARNESS RENEWABLE ENERGY FROM LOW HEAD STREAM

The [Turbulent Company](#) from Belgium created a new micro hydro power plant to produce clean and decentralized energy at a low cost.

The design of the micro hydro power plant has been inspired by observing nature, especially the natural whirlpool of water in rivers and streams. This innovative plant is eco-friendly, not altering the course of the water whatsoever and not damaging the life of the river fish.

This type of turbines can be installed in any water channel to produce a durable energy at low cost installing modular prefabricated parts that can be easily transported. It is a turbine of a smaller size than those available on the market, with specific propellers and a software to operate despite small debris and sand.

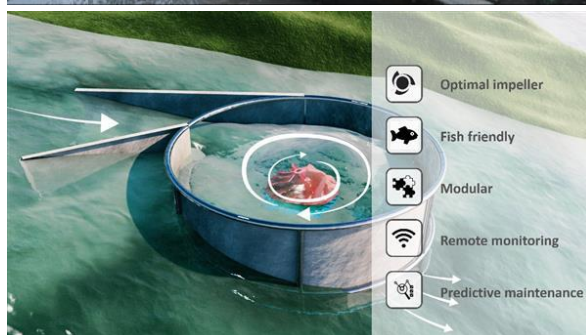
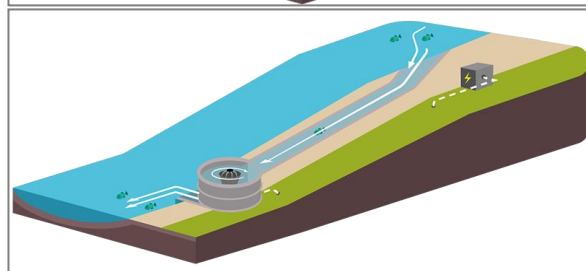
The micro turbine requires only a height difference of 1,5 m and can generate between 5kW and 100kW per hour.

The [technological characteristics of the plant](#) are described on the [Turbulent company web page](#). The operation of the turbine is quite simple. It has only one moving part, extending its operating life, energy production and thus requiring very little maintenance. A self-cleaning screen holds large debris out of the turbine. The flow is guided into a vortex through optimized concrete basin. The vortex turns a specially designed impeller. The water flows back into the stream with all debris gone through and all fish unharmed.

Each plant with its turbine can be installed and operate independently. The energy produced can be directly used by the owner, being at the same time connected to the national distribution grid. These hydropower plants, however, can also be installed with multiple units along a canal or river, to generate energy to their full potential.

Its installation in a grid has an investment return of between 4 and 6 years and can generate up to 20MW. By creating a decentralized network of turbines it is possible to answer the energy needs of local governments, companies and farmers at a lower cost than other solutions available on the market.

In addition, it is possible to first install a pilot plant and then scale up the system, reducing the investment risks. The company has also designed a monitoring system for easy maintenance and a low operating cost.



In 2015 the Turbulent Company started the construction of a pilot plant in Chile in collaboration with Start-up Chile, Engie national company and the local actors of the city of Doñihue. The project occupies 1.9 cubic meters of water, with a water fall of 1.7 meters, generating 15kW of power, day and night, throughout the year. The simple concrete walls have been cast on site by unskilled workers. Thanks to the low-cost maintenance inputs required and to the quality of the necessary technical parts, the plant has a return investment of five years and it can produce up to 105 MWh in one year. Another pilot installation of the Turbulent plant is functioning in Klerkeek, Belgium.

The Turbulent Company is looking for partners and distributors to install this innovative micro hydro power plant in all the countries and regions interested in create decentralized energy systems to harness renewable energy from low head streams.

This technology created by a young Belgian start-up, brings new solutions to take advantage from the potential of rivers on the territory by creating decentralized systems of power plants of renewable energy

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