

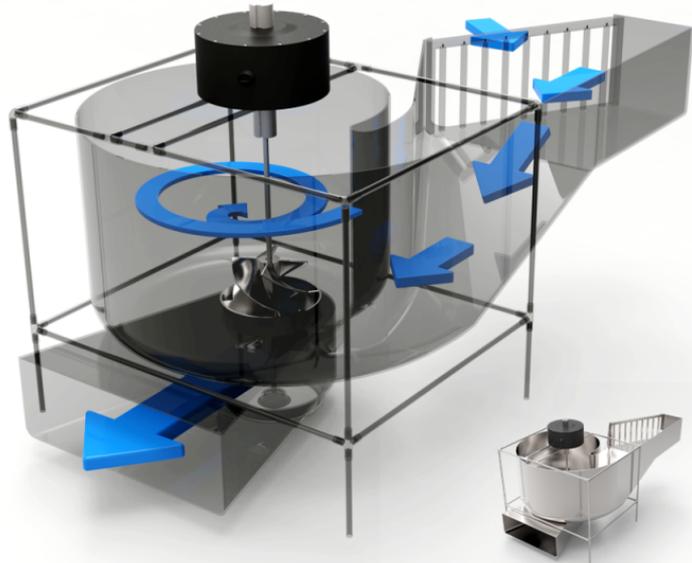
Technology: Smart hydro-power plants (micro and mini)

What?

Start-up Turbulent develops and installs smart hydro-power plants (micro and mini) that use water flows as energy source to actuate a turbine. The principle of this renewable energy technology, is shown in the picture below.

How does it work?

1. A self-cleaning screen holds large debris out of the turbine
2. The flow is guided into a vortex
3. The vortex powers a specialized impeller
4. Water flows back into the stream



This brand new technology has an electrical power of max. 2.220 W, resulting in a yearly production of 12 to 15.000 kWh, which is the electricity demand of 3 to 4 families.

Why?

The smart hydro-power plant generates renewable electricity and operates highly efficiently on rivers with a very low height difference. Therefore, they create clean, reliable and affordable energy for even the most remote communities, without harming local ecosystems. The installation causes no harm to fish and has a minimal impact on the environment.

The energy production is constant and can thus provide base load electricity, which is an advantage compared to other renewable energy sources like wind and sun. It has a long operating life due to a sturdy design (up to 20 years of continuous production) and there are very low maintenance requirements because of the good quality components and a self-cleaning trash rack.

This technology can contribute to the lowering of CO₂ emissions, prevent global warming and contribute to the European goals of 20% renewable energy by 2020.

Cost

An installation of 2.200 W that produces 12.000-15.000 kWh per year (electricity for 3 -4 families) costs about 15.000€. Turbulent claims the installation has a payback time of 5 years, and therefore don't need subsidies.

Where?

A first prototype was built in Tielt-Winge, Belgium, see picture below.



Manufacturers:

Turbulent:

- www.turbulent.be
- Headquarters in Antwerp, Belgium.

Things to consider:

This technology is brand new and not commercially available yet. The company Turbulent is looking for companies to produce the material for the installation. This should be ready in autumn 2016. Then the product will be launched on the market.

Want to learn more?

www.turbulent.be