# Running with a simple idea for renewable energy

A simple insight has seen Paul Kouris spend two decades developing a concept for renewable energy

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After inventing and patenting a concept to create renewable energy from water vortices, which has been 20 years in the making, Melbourne barrister and inventor, Paul Kouris, is not giving up.

Mr Kouris first came up with the concept, as a university student for the Kouris Centri-Turbine generator (KCT), which he describes as a water wheel on its end like an egg beater put into a vortex.

Paul Kouris explaining KCT to members of the water industry in Marysville.

Mr Kouris said after arriving home to a sink full of dishes left by a sloppy housemate he pulled the plug, watched the water go down and had his 'Eureka' moment.

"It occurred to me that water doesn't just move in a straight line, but also in a circle, it's called a vortex," Mr Kouris told Neos Kosmos.

> *"It was a spectacular success, the engineers couldn't believe it worked so well, that it was so counterintuitive, it was very efficient. The Tassie Hydro chief engineer, said to me 'Paul I'm going to have to revisit everything I learnt at uni!'*

After further investigations, Mr Kouris realised the concept of harnessing energy in a vortex of water had not really been considered previously in the realm of renewable energy.

"It just dawned on me, if I was to take the conventional turbine working on a horizontal axis, turn it on its end and put it virtually into the vortex, a bit like an egg beater, then all the blades are submerged, and suddenly all the blades are working. They're all underwater and because it's moving in a circle not a straight line all the blades are turning and working, so straight away you've doubled your output," he said.

Mr Kouris' application to the US for a parent was first approved in 1998.

On the advice of his patent attorney, he then went on to secure patents in Canada, Brazil, Mexico, Australia, New Zealand, Norway, Greece, Italy, Germany, France, Switzerland, England, Spain, Portugal and Japan.

A proof of concept was conducted in 2004 on Mr Kouris' private property, which lead to Sustainability Victoria providing a $40,000 grant for a second proof of concept at Marysville, which Mr Kouris' team funded by putting up a further $40,000.

"We got it operating by August 2008 and we discovered you could make it quite small and still quite powerful. With only a 60cm waterfall and a two metre diameter vortex we could more than power a house; that's only using 110 litres a second, so that was an extraordinary discovery," Mr Kouris said.

The Black Saturday fires inadvertently ruined the project after a tree fell upstream and squashed the installation.

However, the system was up and running again in July this year and a demonstration was performed for representatives of the Australian water industry, including Melbourne Waters, Murray irrigation, Tassie Hydro, and Goulburn Valley water.

"It was a spectacular success, the engineers couldn't believe it worked so well, that it was so counterintuitive, it was very efficient. The Tassie Hydro chief engineer, said to me 'Paul I'm going to have to revisit everything I learnt at uni'," Mr Kouris said.

The launch of Mr Kouris's website will take place on October 6 at the renewable energy conference in Melbourne, while Austrade is planning to promote the KCT in Europe, along with only five other Australian innovation renewable energy companies.

"My plan now is to find a joint venture partner, a global corporate or individual champion so that together we can really bring electricity to the 1.6 billion people on the planet who have never seen it: to the third world, "Mr Kouris said.

"The one thing they have plenty of in the third world is water and people, but the water they have is flat water, and conventional turbines needs waterfalls, and they need huge hydro schemes too," Mr Kouris said.

"This is our way of demonstrating to the world that we're here, Australians can do it."

*For more information on the KCT, visit: http://www.kourispower.com/*