

Carnegie ready to make waves with sea power

Next year the company will discover whether its big idea will live up to expectations, writes **James Chessell**.

Michael Ottaviano likes to describe the ocean as an "attractive resource" and he's not talking about the fish.

Carnegie's managing director is in the business of trying to generate commercial quantities of electricity from waves – a complicated pursuit that has occupied engineers and entrepreneurs for decades – and he claims his small Perth company is very close to pulling it off.

It's a big call from the former KPMG executive. But for Carnegie's 4000 mainly retail investors, it has proved to be a bet worth taking, with the stock managing to record solid gains over the past two years.

They are punting that Carnegie's pilot plant off the coast north of Fremantle will overcome many of the challenges frustrating aspiring wave energy players to emerge as one of the first commercial wave farms in the world.

There is no doubt that wave power, like many renewable energy sources, is a good idea in principle. Particularly when demand for green energy is stronger than ever and companies such as Carnegie need to succeed to give the Rudd government any hope of meeting its renewable energy target of 20 per cent by 2020.

Ocean swells are the product of wind and storms. In certain parts of

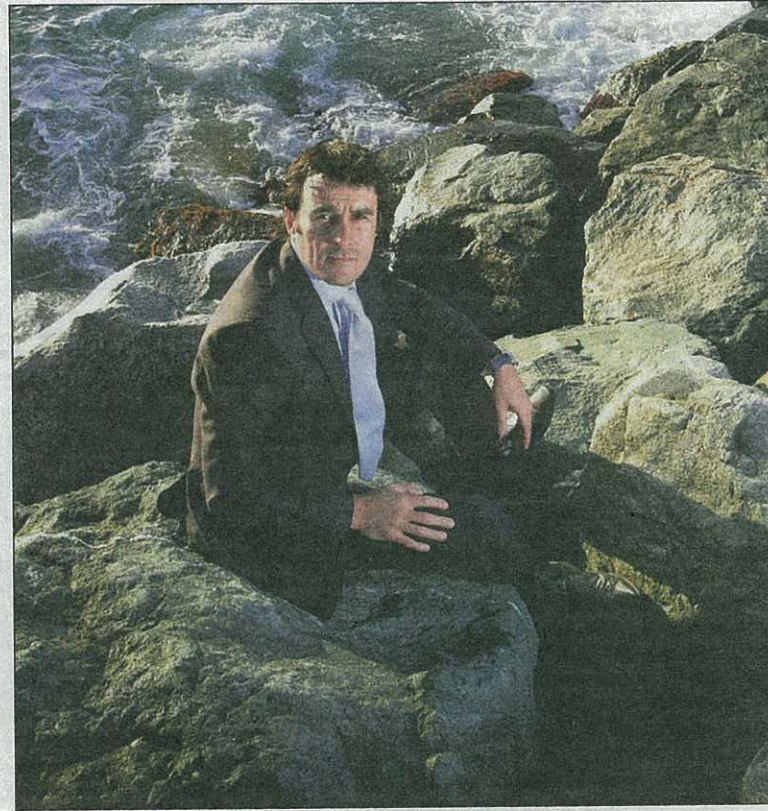
the world, such as the roaring 40s latitudes in the southern hemisphere – where regular winds hit the west coast of Australia, South America and Africa – they are a less intermittent source of power than solar and wind.

"Wave offers a baseload potential," Ottaviano says. "A wave farm will always be producing some amount of power – even on a calm day there is some swell coming through."

And then there is the location. Most people live near the coast, which is where wave farms are.

Wave farms that use submerged technology, such as Carnegie's cylindrical energy transfer oscillating (CETO) plant in Western Australia, also escape some of the aesthetic and environmental problems that come with wind farms.

The industry player that wins the race to produce electricity from an economically viable project will make plenty of money. But a good idea does not necessarily translate into a commercially viable project. Ottaviano and his team of 35 engineers, scientists and commercial staff have been plugging away with CETO, the brainchild of Carnegie chairman and former Hardman director Alan Burns, for the best part of a decade. He acknowledges that some technical aspects of the project are yet to be proven.



A wave farm never stops work, says Michael Ottaviano.

Photo: ROSS SWANBOR

But one of Carnegie's competitive advantages over its local rivals is its conservatism. While the likes of Ocean Power Technologies have experienced problems using more complicated floating devices that are more susceptible to storm and

breaking wave damage, Carnegie has met most of its development targets thus far.

The next significant milestone is expected next year when the CETO II trials are completed. This should put the company in a position to

make a call on whether or not the technology is commercial.

Watching carefully will be the UK's Renewable Energy Holdings and EDF Energies Nouvelles of France, which would own any CETO wave farms in the northern hemisphere.

"[CETO] is the simplest of any wave technology ever conceived," Ottaviano says.

"It's the only technology that has gone down the path of just being a pumping technology that pumps water ashore to a hydro-electric turbine on the land.

"There is one moving part which is the piston moving up and down pumping water. You don't have any electrical equipment in the water. Every other wave energy proposal has had a turbine spinning off a generator in the water, which is higher maintenance."

There is some way to go before wave farms of any scale will exist.

Carnegie has spent about \$25 million on CETO – the company recently placed \$2.5 million worth of shares at 25¢ each – and will probably spend another \$5 million before it builds a commercial demonstration plant by 2012.

"Australia has the best wave resource of any country in the world," Ottaviano says. "And whether you subscribe to CETO or another wave technology the argument is there to be made that we should be harnessing what is a free, genuinely renewable, zero-emission source of energy."