

Wind energy transforms Australian township

September 16 2014, by Wendy Frew



Two 800kW turbines now provide much of the power needed by the small West Australian town of Denmark. Credit: Simon Neville

Denmark isn't the sunniest place on the continent. The Australian continent, that is.

The tiny township clinging to Western Australia's southern coast is rainy for about a third of the year. So, it wasn't a big surprise when, in 2003, wind [energy](#) emerged as the most viable form of renewable energy for the local community.

The community has long been known as a green town. Craig Chappelle, chairman of directors of Denmark Community Windfarm Ltd (DCW) says locals wanted to build a small, community-scale wind farm that would feed [electricity](#) into the regional grid, improve the quality and reliability of the district's power and reduce the community's reliance on fossil fuels.

"We were getting five or six blackouts per year," says Chappelle, who with others at DCW helped establish a community energy project for the town.

"We are the second-last town on that [electricity transmission] line and the infrastructure is about 60 years old so there are massive power losses as the electricity travels 400km down the line to us."

Denmark now has two wind turbines and has permission to build another two.

There's a certain synchronicity too in the town's green energy choice. Denmark's European namesake is the birth place of the global wind industry. Against the backdrop of the oil crisis, Denmark began developing commercial wind power in the 1970s. Wind power now provides just over 30 per cent of the country's electricity, much of it coming from community energy projects.

In neighbouring Germany, fears of another Chernobyl prompted hundreds of thousands of people to invest in citizens' wind farms and other kinds of independent renewable energy schemes. Scotland is another notable adopter of community energy.

Until recently, it has been a very different picture in Australia, says Nicky Ison, a senior research consultant for the Institute for Sustainable Futures at the University of Technology, Sydney.

In 2009, there were just three or four community energy projects on the drawing board, says Ison, an expert in the field of community energy and energy policy.

Now, there are 10 projects operating and over 50 in development, and in June about 300 people attended Australia's first major community energy congress in Canberra, she says.

The congress brought together people who were interested in starting community energy projects, drafted a national strategy for developing the sector and created the Coalition for Community Energy which will deliver the national strategy.

"Individual projects might be small but they can be replicated across many communities and their influence ripples through the community and eventually influences policy and regulations," says Ison, who has travelled the world visiting community energy projects.

In July, the NSW Government announced it wanted to rival California's green power status by accelerating the use of renewable energy and easing the way for more wind farms. But the sector's momentum could soon hit a very big speed bump.

In the lead up to the 2013 Federal election, the Coalition promised to support a renewable energy target (RET). The target, enshrined in law by the former Labor Government, requires electricity retailers to source a combined 41,000GWh of power from renewable sources by 2020, or what was projected in 2010 to be 20 per cent of Australia's electricity demand.

At the time of writing, a Coalition Government review of the target was underway, headed by confessed climate change sceptic Dick Warburton. The renewable energy industry and green groups fear the Government

has already made up its mind to cut the target.

Incumbent power companies claim the target costs jobs and pushes up power prices. But experience around the world shows renewable energy can smooth out the spikes in wholesale electricity prices on very hot and very cold days because that is when renewable energy tends to be available. In other words, renewable energy can help keep electricity prices down.

Regardless, cutting or removing the target will make it tougher for the renewable energy sector to grow, says Ison.

"Clearly, current uncertainty in Federal Government policy settings are not helping," she says.

All the more reason for the Coalition for Community Energy to help the sector develop a range of business models for new alternative energy projects.

"Globally we are seeing huge innovation in the business models for [renewable energy](#). Because of government policies in Australia, selling electricity into the grid for smaller community energy projects is not economically viable so these projects need to sell energy directly to electricity users," Ison says.

In Denmark's case, locals decided to form a limited company rather than a co-operative structure. The company issued 1.2 million shares at \$1 each and it now has 116 shareholders, most of whom are local residents. DCW will pay its first dividend this year, after just 15 months of operation, says Chappelle, and some of the profits will be returned to the community for other projects.

"We calculated that after the first year of operation we had provided 55

per cent of domestic electricity consumption, which was slightly better than our projections," he says.

"In overall terms, we are providing 35 to 40 per cent of commercial, industrial and residential consumption for the entire district. It's not bad for two little 800kW turbines."

Provided by University of Technology, Sydney

Citation: Wind energy transforms Australian township (2014, September 16) retrieved 25 April 2024 from <https://phys.org/news/2014-09-energy-australian-township.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.