

Clean water from thin air

by Adam Lane on Sep 16, 2012

The headline statistics of Eole Water's WMS1000 wind turbine are really rather impressive – in addition to a 30kW power output, the unit can also produce up to around 1,200 litres of high-quality drinking water per day. Using a large humidity condenser and equivalent heat exchanger, the technology actually collects water from the ambient air around the turbine.

It does this, Eole Water's Thibault Janin explains, using the same process that causes drops to appear on your cold bathroom mirror when you take a hot shower. Only here the 'mirror' is one metre wide and five kilometres long. Aimed at remote areas with a population density of up to 5,000 people, the turbine has been designed to be as self-sufficient as possible. No additional power source is required, whilst maintenance requirements are kept to a minimum through the use of a direct drive generator that doesn't require a gear box.

"In addition, the water we create can bring very relevant benefits to these remote communities. We can reduce health scares, develop agriculture or some kind of industry, whilst also allowing communities to avoid spending money on a water and electricity network," Janin, the company's marketing and communications director, explains.

The idea of the technology first came to the company CEO Marc Parent whilst living in the Caribbean back in 1997. At first modifying a basic AC unit to collect water for himself, the idea of utilising a wind turbine in the process quickly developed.

Now the yield of the WMS1000 unit has been ramped up and tested over three principle testing phases – first in France – and then, last year, in Musaffah, Abu Dhabi. There, the turbine was put to work under the more challenging heat, unstable humidity and air pollution of the Middle East.

Janin says that the system at first required modifications to cope in the conditions of Abu Dhabi, but it is now producing drinking water that exceeds the quality levels laid down by the World Health Organisation.

Now, partnering with the Emirates Marine Environmental Group (EMEG), the firm is launching its third testing phase in Dubai, to showcase the technology in a final technical validation of its capabilities.

Demand has been great around the world, with interest across the Middle East notably high. Janin says that - in addition to the UAE - Qatar, Kuwait and Saudi Arabia have all shown an interest in the technology.

Pending a successful demonstration of the turbine in Dubai, the company's biggest challenge will be in ramping up its production capabilities to meet this growing demand.

"Because we are still a small company, the next question will be what we do in terms of industry; in terms of production. So we are working on that, and also on the possibility of producing the turbines in the UAE," Janin adds.

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