



Desalination plan for Port Wakefield



By Lauren Parker

A WIND-powered desalination plant could be built at Port Wakefield within two years under a proposal by Adelaide-based company Windesal.

The company outlined its proposal to Wakefield Regional Council last Wednesday night, seeking a letter of support to aid the company in a grant funding application.

The desalination plant would be powered by two wind turbines, combined with a generator, and is one of 16, five gigalitre plants planned by the company.

In comparison, the Port Stanvac desalination plant can produce 100 gigalitres of potable water

each year.

Jonathan Whalley, Windesal chief executive officer, said the company planned 16 projects across the state, which alleviated the additional cost of pumping water from a central location. Each plant would be operated by a separate company, which sold the water to its users.

The plants are made of three parts - the wind turbines, a back up generator which runs on biofuels, and a desalination module.

Windesal will soon begin its pre-feasibility study to establish whether there are any obvious obstacles at Port Wakefield.

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Financial partners required for project

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The pre-feasibility stage is expected to take less than two months.

"We then look at the plant, environmental approvals and planning approvals," Mr Whalley said.

The company would then seek financing partners, before a three month construction period.

The Port Wakefield project will investigate turning sea and ground water into potable water. Mr Whalley spoke to WRC councillors last Wednesday with Windesal executive director, Barrie Harrop, seeking a letter of support for a grant application.

However, while the company is applying for grant funding to progress the project, Mr Whalley said it was still able to go ahead without government support.

"We do a business model and raise the money based on a viable going concern," he said. "The grants help us to accelerate the program and we could build a bigger plant with more infrastructure than we otherwise would."

When it came to the plant itself, Mr Whalley said it left quite a small footprint on the landscape.

The desalination plant would be powered by two wind turbines, each

between 44 and 65 metres high and capable of producing about one megawatt of power.

"A desalination plant requires continuous power," Mr Whalley said.

When there is insufficient wind, a generator will kick in, fuelled by biofuels.

"We're not burning diesel while we've got good wind power," Mr Whalley said.

In addition, the company is hoping to source biomass that may be used to help power the generator. And if demand for water continues to increase, so too can the plant's capacity.

"It's relatively straightforward for us to add modules and expand the plant if over the coming months and years the demand increases within the local community," Mr Whalley said.

He believes the additional water will be particularly beneficial to the expansion of the poultry industry on the Adelaide Plains.

With mains water prices expected to rapidly increase over the coming years, desalination is becoming more economically viable.

Water recycled from the Salisbury aquifer recharge system currently sells for about \$1 per kilolitre, but involves a

much lower processing cost to make it potable.

Mr Whalley said State government had indicated a 100 percent water price increase over the next two to three years, bringing it in line with the expected cost of desalinated water at about \$2 a kilolitre.

Councillor Avon Hudson questioned what would happen to the salt after desalination.

Mr Harrop said the company was investigating several options, and had recently approached professors at Flinders University with the challenge.

"They have come back with two solutions," he said.

The first is soda ash, for which there is a world market, while the second option is to grow algae in the brine, which then becomes the base for biofuel and can be fed back into the plant.

"You're starting up a whole new industry in this country around a totally sustainable solution," Mr Harrop said.

"We're very excited about that and the group we're dealing with have just won a Federal government grant of \$4 million to progress it."

Windesal is yet to choose a specific location at Port Wakefield for the plant, and will continue to liaise with council to

find the best solution.

Mr Harrop said the company could have the desalination plant operational within 18 months to two years, but it will be two to three years before the technology to use brine for soda ash or to grow algae for biofuels is finalised.

"If there's sufficient land area, we can pond the brine and use evaporative aspects and harvest the salt and limit the amount of brine we put back into the sea," Mr Harrop said.

Of the water taken into the desalination plant, about one third becomes potable water and the rest is waste. The harvesting of groundwater would depend on the capability of the aquifer for recharge.

"We're not interested in taking water from aquifers where you can't recharge the aquifer," Mr Whalley said.

"We don't think that's sustainable."

Windesal is investigating several options for water distribution.

The company has applied for funding under a new Federal government program 'Water for the Future' focussing on cities and towns with a population of less than 50,000. It is believed to be a once-off funding program.