

Media Release

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Ngawha expansion contracts let

Far North electricity lines company, Top Energy has confirmed the placement of orders for its Ngawha Power Station expansion, worth around \$28 million.

The company has entered into supply and engineering, procurement and construction contracts with Ormat Technologies of Israel. Top Energy's existing 10 megawatt plant, which it has operated since 1998, was also supplied by Ormat and uses the same energy-efficient technology as the new plant.

Resource consent applications for the plant's expansion were originally lodged back in 2004 and were granted by the Environment Court in late September 2006. Final appeal timeframes expired in December last year.

In what will be the largest development undertaken in the Far North in over a decade, Top Energy will invest approximately \$55 million overall in this project. Contracts for the steamfield development, civil engineering work and well drilling have also been negotiated but are yet to be announced.

With an output of 25 megawatts, the newly expanded plant is expected to be operational by winter, 2008 and will generate around 70% of all electricity consumed in the Far North region.

Scientific investigation carried out by Top Energy has shown that the plant can be expanded without affecting Ngawha's geothermal field reservoir pressure. The existing plant together with the expansion includes total re-injection of extracted geothermal fluids, which is proven to be the best environmental approach to take. (*See 'How the plant works...' below*). The sustainable use of the resource in this way is in line with recent Government direction to use sustainable electricity generation sources and help reduce greenhouse gas emissions.

According to Top Energy Chief Executive, Roger de Bray, there are considerable benefits in the development of this local energy resource. "For one thing, it's always more efficient to generate electricity close to where it's consumed - minimising transmission losses and therefore costs. But a more compelling benefit is in security of supply, where our exposure to possible failures in the national grid to the South are reduced", he said.

de Bray also points out that there are direct financial benefits for the community too. "Top Energy is owned by the Top Energy Consumer Trust, so the benefits in terms of increased profitability and value remain in the region and are shared by the 27,000 households (a population of some 55,000) which are connected to the company's lines network", he said.
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How the plant works...

Using 'state of the art' geothermal generation, geothermal fluids are passed through a heat exchanger where energy (heat) is transferred to a working fluid (pentane). The pentane then boils to form a high-pressure vapour which then drives the turbines, turning the generator.

When the vapour has passed through the turbines, it is condensed back to a liquid and returned to the heat exchanger in a continuous cycle. The pentane is not consumed as a fuel, but is simply used as a working medium to extract energy from the geothermal water and steam.

Having given up much of their energy, the geothermal fluids are returned to the deep geothermal reservoir, via re-injection wells. This practice not only prevents geothermal fluid discharge into the environment (where adverse affects would occur) but also maintains reservoir fluid mass. This in turn enhances the long-term sustainability of the geothermal resource as well as minimising the possibility of any surface subsidence.