

## Media Release

Kaikohe, Monday, 24 November 2008



### Ngawha Powers-up the Far North

In what has arguably been the largest commercial development undertaken in the Far North in two decades, Top Energy's Ngawha Power Station is now on stream and consistently producing up to 70% of all electricity consumed in the Far North.

Following completion of the \$77 million, Stage 2 build, commissioning of the new plant got underway in September. It was rigorously tested under various conditions and load scenarios, before being put on line early in October. The electricity generated is fed into Top Energy's network and then connected to the National Grid, via Transpower's sub station near Kaikohe.

According to Top Energy Chief Executive, Roger De Bray, the power station's output has been 15 years in the making. "It's been a huge undertaking for quite a while - from when we first conceived the idea of building a generator in the early '90's, through to this expansion coming on stream. There've certainly been challenges along the way, but I've always believed it would be a tremendous asset for the Far North community and one worth fighting for."

Stage 1 of the Ngawha project saw the original generator commissioned in June 1998. Manufactured by Ormat Industries of Israel, it operated using four of twenty existing wells, drilled by the Ministry of Works in the early 1980's.

Subsequent scientific investigation carried out by Top Energy had shown the Stage 1 plant could be expanded without affecting Ngawha's geothermal field reservoir pressure, so in 2003, Top Energy began its push forward with its Stage 2 expansion plans. Resource consent applications were originally lodged in 2004 and after lengthy delays and an Appeal to the Environment Court, they were granted in September 2006. Earthworks commenced in January 2007. Concrete foundations and fire ring main were prepared over the winter months. The steam-field system was also built and three new wells were drilled. The new plant (also designed and built by Ormat) arrived in New Zealand in March this year.

The new plant's capacity of 15 MW has lifted the total power station capacity to 25MW.

Power generation at Ngawha is expected to produce excellent profits for the Top Energy Group. It will also mean that a large part of the electricity consumed in the Far North will be

generated locally, reducing the community's exposure to possible national grid failures to the south.

Members of the public can get an opportunity to have a look over the power station, when Top Energy holds an Open Day at the facility, in January 2009. At this stage the Company plans to run free bus tours from the Kaikohe Agricultural, Pastoral & Horticultural Show on Saturday, January 10<sup>th</sup>. Details will be advertised in local newspapers nearer the date.

The newly expanded plant is to be officially opened sometime in the New Year. END.

#### **HOW THE NGAWHA POWER STATION 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 effects 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.

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