

## Media Release

Kaikohe, Friday 8 August 2008



### Commissioning of Ngawha plant to get underway

The \$77 million expansion of Top Energy's Ngawha Power station is now almost complete.

In a ceremony attended by local Iwi, guests, Top Energy staff, and contractors, the newly built plant was blessed in preparation for the final commissioning phase of the project.

Stage 1 of the Company's 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 this plant could be expanded without affecting the Ngawha geothermal field's reservoir pressure, so in 2003, Top Energy began its push forward with its Stage 2 expansion plans, in what has been arguably the largest commercial development undertaken in the Far North for over a decade.

Expansion resource consent applications were originally lodged in 2004 and after delays and an Appeal to the Environment Court, 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 Systems of Israel) arrived in New Zealand in March this year. The new plant's capacity of 15 MW will lift the total power station capacity to 25MW and will supply up to 70% of all power consumed in the Far North region.

The commissioning stage is now the final phase before the new power station comes on stream. All going according to plan the new plant will produce electricity by late-September.

The expanded Ngawha Power Station will produce excellent profits for the Top Energy Group. It will also mean most 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. END.

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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 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.