

Media Release

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Top network innovation continues

Much has been publicised about Top Energy's 10-year, \$260 million network investment programme.

To recap, the reliability improvement and capacity building programme involves doubling the length of the Company's distribution network, increasing the number of zone substations from 10 to 18 and building a second high-voltage transmission line from Kaikohe to Kaitaia.

Understandably, a project of this scale will take a decade to complete.

However, during the first 18 months of implementation, the reliability-based projects of better vegetation control and installation of more lightning arresters and network automation equipment have already delivered excellent results. By March 2011, the number of power outages on Top Energy's network had halved, with the Company's SAIDI minutes* dropping from over 925 to 440.

As this network upgrade progresses, Top Energy is now planning more immediate ways to continue network performance improvements. This includes the use of diesel generator sets, especially on the more remote, less populated reaches of the Company's network.

Diesel engines and electricity generators are used, not only for emergency back-up power, but also to feed into line networks, to assist during power outages, to help with peak load periods, or when there is a shortage of larger generating capacity. The packaged combination of a diesel engine, a generator and various ancillary equipment (including base, canopy, sound dampening, control systems, circuit breakers, jacket water heaters and a starting system) is referred to as a generating set, or a 'genset' for short.

Says Russell Shaw, Top Energy CEO, "We're implementing a project which will see several gensets installed on the network, to improve network reliability and for peak lopping. For example, where we've a single line out to a substation ... if that line fails we can use our genset to pick the supply back up, or if we've got to the point where we're getting to full line capacity, we can use it to generate extra capacity and ease back the load. This helps us defer more costly investment in that line, but at the same time gives us the ability to accelerate reliability of supply improvements to our

consumers fed by that line. This is especially so, as lines take quite a bit of time to build and we've a lot to build over the next few years".

Top Energy says one such genset installation is planned for Taipa, in Doubtless Bay. At Taipa, the substation is supplied by a single 33kV overhead line. Outages on this line can be difficult and time consuming to repair, resulting in significant disruption to the 4000 or so power consumers supplied in the area.

Security of supply in the area is a key objective and a major part of the Company's network investment programme. Construction of additional lines into Taipa from Kaitaia and Waipapa are now underway, at a cost of \$26 million. Once completed, the new lines will ensure that, if a major fault does occur, supply can be maintained using the additional circuits. Although this project is already well underway, the new lines will still take several years to plan, consent and construct. Completion is planned for 2016. Of all of the faults on the network last year 35% were on the line to Taipa.

To provide a more immediate solution, Top Energy will install two 2MVA gensets at Taipa that will be used to supply consumers in the event the existing 33kV line fails. The gensets will connect to the main 11kV circuits via two new transformers installed within the substation. Although they won't completely alleviate outages (there will still be a short time lag before they kick in following a fault), the gensets will significantly reduce the overall length of any outages, whilst the line fault is located and repaired.

The Taipa genset project is expected to be completed early next year. Top Energy is already working through the resource consenting process with Council, to satisfy any short-term deployment concerns (for example possible diesel contamination or noise control requirements). Because the gensets are being temporarily installed while the new lines are built and likely use will be infrequent (in the event of a power outage, or to reduce peak electricity loads) the Company expects there to be little environmental impact. Orders have also been placed for the equipment; however Top Energy understands delivery times have increased from 6 to 9 months, as a direct result of the earthquake and tsunami in Japan, placing high demand on manufacturers worldwide.

If all goes according to schedule, the Taipa gensets should be installed and operational by January 2012. END.

*An acronym for Systems Average Interruption Duration Index – a reliability indicator and industry benchmarking formula.

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