

Abstract

## **Interruptible Load – the direction for smart grids of the future**

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Our New Zealand grid will have to cope with more intermittent distributed renewable generation and more Electric Vehicles being charged.

We will need to see more integration between supply and demand.

We will need far more fast responsive Interruptible Load (or IL) to prevent a cascade failure from major contingent events as the grid takes on more importance.

Energy Response is the leading aggregator in the New Zealand market. We have introduced in 2010 new smart grid technology to bring mid-sized industrial and commercial loads into the IL market for the first time. These loads include refrigeration in meat plants, cold stores, water pumping, effluent treatment and many other industrial operations that can be easily shutdown. Energy Response's aggregated offer has a faster response (less than 1 second), more diversity across many grid exit points and high reliability than present reserves.

The scale is serious at 100MW of new reserves which will certainly have an impact on improving security of supply in the North Island.

This is an example of change that is taking our grid towards a more sustainable future and getting the supply-side dominated industry to think differently. This is just the start in our roadmap towards a more robust grid that can balance a much wider range of renewable generation with export industries taking advantage of this generation to lower carbon footprints.