

From: [Bryan Leyland](#)
To: [Submissions Mailbox](#)
Subject: Consultation Paper - Proposal to introduce a default agreement for distribution services
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I submit that the distribution agreement should include a clause on the lines of:

“If the consumer has a load which can be controlled by the lines company, retailer or Transpower in order to manage peak demands, system disturbances, price spikes and the like, and if controlling the load will not be noticed by the consumer, then the the consumer must allow them to control this load”.

The benefits of this to the consumer and the power system would be huge. Many millions of dollars per year. It would take us back to the days when we had universal ripple control system that managed demand and ensured that, from about 7 AM to 9 PM on peak demand days, the load was steady. This brought huge savings in generating plant, transmission lines and distribution systems.

Now, having abandoned ripple control, we are spending large amounts of money on “demand-side management” that is less effective and much more complicated.

With a clause like this, new technology like a smart water heater thermostat would become attractive. The smart thermostat would be connected to the internet, regulate the water heater power input according to demand, help manage the system frequency, mitigate price spikes, and the like. Because it sensed water temperature it would ensure that the consumer was never left with cold water. The frequency sensing element would regulate the power input in proportion to the frequency deviation and so stabilise system frequency thus reducing the need for frequency management. This alone, could bring large savings. If there was an upwards excursion of frequency and the water heater temperature was normal, it would inject extra power into the water heater for the short period of the frequency excursion. This would solve an over frequency problem that exists in the system and is becoming more and more difficult to cope with.

The key clause in this is “will not be noticed by the consumer”. This applies to domestic water heaters, large refrigeration plants and, for short periods, air-conditioning systems in multi-storey buildings.

If this system had existed 10 years ago, we would not have needed to build the 400 kV line costing nearly \$1 billion and many of the lines companies would not have overbuilt their systems at great expense to meet the unrestricted peak demand that resulted from them abandoning their ripple control systems.

Kind regards,

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