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John McLaren
Chief Advisor, Regulation Branch
Commerce Commission

Submitted by email to regulation.branch@comcom.govt.nz

30 April 2014

Dear Mr McLaren,

Submission in response to process and issues paper for default price-quality paths from 1 April 2015.

EnerNOC is grateful for the opportunity to comment on the issues paper dated 21 March 2014.

EnerNOC is an energy management company, currently managing over 24 GW of load sourced from over 14,000 commercial and industrial sites and 10,000 agricultural sites across markets in North America, Europe, Australia, New Zealand, and Japan. In some of these markets, we work with network businesses to manage demand, and with customers to help them to respond to price signals provided via network tariffs.

In New Zealand, we have been offering customers' load into the Instantaneous Reserves markets since 2009, are working with Genesis Energy in the energy market, and should shortly begin offering customer load into the Frequency Keeping market.

We are interested in the incentives for demand-side management. We largely agree with the Commission's views as set out in section 5 of the issues paper, and with the approach of the Electricity Networks Association's Energy Efficiency Working group, as expressed in their letter of 9 December 2013. However, we thought it may be helpful to add our perspective. We believe that three issues must be addressed before network businesses are likely to pursue an efficient balance of supply-side and demand-side investment:

- Revenue decoupling
- Balanced incentives for capex and opex
- Explicit incentives for demand-side management

We address each of these in turn below.

1 Revenue decoupling

Under a weighted average price cap (WAPC), distributors bear volume risk. This has several consequences relevant to demand-side management:

1. Pursuing energy efficiency or demand-side management activities causes their revenue to fall.
2. Facilitating the connection of embedded generation causes their revenue to fall.
3. Introducing tariffs with effective price signals causes their revenue to become less predictable – if customers change their behaviour more than expected in response to the price signals, then the distributor may under-recover their revenue.

The WAPC hence acts as a disincentive to any of these desirable activities.

It is possible – if rather complex and administratively burdensome – to overcome this disincentive by compensating distributors for revenue lost due to these activities. In New South Wales, the Independent Pricing and Regulatory Tribunal's 'D-Factor' was partly successful. Part B of the Australian Energy Regulator's Demand Management Incentive Scheme (DMIS), which was meant to play the same role in other states, however, had very little take-up. The reason for the different outcomes is not entirely clear.

Decoupling distributors' revenues from throughput is a much simpler approach which completely removes these disincentives. It has been recommended by the Regulatory Assistance Project[1] and adopted in many US jurisdictions.

In Australia, it had long been assumed that a WAPC was beneficial because it provided an incentive for distributors to price efficiently. However, in recent years, this assumption has been questioned. The Productivity Commission considered the pros and cons of WAPCs and revenue caps, and recommended that revenue caps be used for all distribution businesses.[2] The Australian Energy Regulator has adopted revenue caps for its recent determinations, stating:

> *"The AER considers the benefits of a WAPC rest on a theoretical argument that it provides an incentive to set efficient prices. The AER considers the theoretical arguments have not eventuated in practice because the assumptions underpinning the WAPC do not apply to the supply of network services by distributors"*[3]

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1 See, for example, Regulatory Assistance Project, *Revenue Regulation and Decoupling: A Guide to Theory and Application*, June 2011, available from http://raponline.org/featured-work/utility-business-models-providing-incentives-for-energy-savings

2 Productivity Commission, *Electricity Network Regulatory Frameworks*, Inquiry report, April 2013, Volume 2, §12.1, pp.466-479, available from http://www.pc.gov.au/projects/inquiry/electricity/report

3 AER, *Stage 1 Framework and Approach – NSW electricity distribution network service providers*, March 2013, §2.4, pp. 48-57, available from http://www.aer.gov.au/sites/default/files/AER - Stage 1 Framework and approach - NSW distributors - March 2013_1.pdf

We recommend the adoption of revenue caps, as this is the simplest way to avoid these disincentives, as well as other problems associated with WAPCs. If it is not possible to do this in the near term (e.g. because it would require amendments to the input methodologies), then a mechanism similar to the D-Factor would be appropriate as a transitional measure.

2 Balanced incentives for capex and opex

A bias in favour of capex causes distributors to pursue network augmentation projects even when some form of demand-side management would result in a lower total cost.

This can be avoided by ensuring that the strength of the net incentive to reduce capex is at least as strong as the net incentive to reduce opex, under all circumstances. The Australian Energy Regulator is taking this approach by introducing a capital expenditure sharing scheme (CESS) of the same strength as its opex-focused efficiency benefit sharing scheme (EBSS).[4]

An alternative, and rather cleaner, approach is that taken in the UK's "RIIO" model, which removes the distinction between capex and opex, instead applying incentives to total expenditure ("totex").[5]

We recommend the adoption of the "totex" approach, as it is the simplest way to ensure balanced incentives. If this is too great a change for the near term, then the proposed incremental rolling incentives scheme could achieve a similar effect, albeit with greater complexity, if it applies to both capex and opex, and is tuned so that the scheme, combined with any other incentives faced by the regulated businesses, provides a net incentive that is at least as strong for capex as it is for opex.

3 Explicit incentives for demand-side management

The previous two measures only remove disincentives to demand-side management. They do not provide any positive incentive.

Since the 1950s and prior to 1999, distributors' investment decisions were influenced by the price signals contained in the Bulk Supply Tariff, or the equivalent imposed by the state-owned generation and transmission organisations. This led to their investment in ripple control equipment to reduce

[4] Details of the CESS and EBSS and the process by which they were designed is available at http://www.aer.gov.au/node/18869

[5] OFGEM, *RIIO: A new way to regulate energy networks*, Final decision, October 2010, p.40. Available from https://www.ofgem.gov.uk/ofgem-publications/51870/decision-doc.pdf. The effects on incentives for cost saving are discussed in the IPART working paper, *Incentives for cost saving in CPI-X regimes*, July 2011, §4, pp.10-19, available from http://www.ipart.nsw.gov.au/Home/Industries/Research/Reviews/Efficiency_Incentives/Incentives_for_cost_saving_in_CPI-X_regimes

peak demand, and the incorporation of strong price signals into retail tariff structures, making New Zealand a pioneer in demand-side management.[6]

However, the separation of line and energy businesses and the bundling of line and energy charges by retailers have reduced the ability of distributors to signal the need for peak demand reduction. This, coupled with the lack of direct contracts with consumers and the takeover of many ripple control receivers by other parties, has reduced certainty and confidence about the availability and quantity of demand-side response.[7] Hence, when faced with a choice between equivalent supply-side and demand-side solutions, distributors are likely to favour the more familiar supply-side one, which they also perceive as being lower risk. A positive incentive for demand-side management as a reliable non-network solution could help overcome this cultural bias.

Such incentives are a common feature of US regulatory regimes, often addressing both energy efficiency and demand-side management.

In Australia, the Australian Energy Market Commission has recommended the introduction of an incentive scheme which would allow distributors to capture some of the benefits that their demand-side management activities bring to other parts of the value chain.[8] The Total Environment Centre has argued that a system of targets and incentives, more like the US model, is necessary to bring about behaviour change[9], and the Institute for Sustainable Futures has set out a proposed mechanism.[10]

We recommend the adoption of an incentive mechanism to encourage distributors to work up to an efficient level of demand-side management. It seems likely that a mechanism that includes targets will be more effective.

I would be happy to provide further detail on these comments, if that would be helpful.

Yours sincerely,

Dr Paul Troughton
Director of Regulatory Affairs

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6 Strata Energy Consulting, *Report on the history of the Bulk Supply Tariff and Transmission Pricing in New Zealand*, January 2014, available from http://www.ea.govt.nz/dmsdocument/17067

7 After 1999, many distributors sold their metering assets, including ripple control relays, to retailers, while retaining ownership of the ripple signal transmitters. Metering equipment is now owned by a range of parties, including specialist third-party metering equipment providers.

8 AEMC, *Power of Choice review*, Final report, November 2012, §7.3.1, pp.205-214, available from http://aemc.gov.au/Markets-Reviews-Advice/Power-of-Choice-Stage-3-DSP-Review

9 TEC, *Demand management targets for networks in the National Electricity Market*, December 2012, available from http://www.tec.org.au/images/reports/tec dm targets discussion paper.pdf

10 ISF, *Restoring Power: Cutting bills & carbon emissions with demand management,* November 2013, available from http://www.tec.org.au/images/reports/Restoring Power - DMIS Final Report 20 Nov 2013.pdf