Submission: Powerco CPP Draft Decision
http://www.comcom.govt.nz/the-commission/media-centre/media-releases/detail/2017/draft-decision-on-powercos-application-for-major-electricity-network-upgrade

Molly Melhuish, 15 Dec. 2017

By email to PowercoCPP@comcom.govt.nz

This submission covers only the issue of Powerco's need to recognise the world trend towards distributed energy and demand management (DE and DM) to reduce both kW and kWh demand, thus reducing the need for capital investment in expanding networks and/ or generation assets.

I disagree with the statement in your draft decision, "We are conscious of keeping electricity affordable. However, **long-lived assets like electricity networks require upfront investment, with the full costs recovered over their expected lifetime." [**my emphasis] . . . We are satisfied that the proposed investment is **necessary** to maintain a safe, secure and resilient network while being mindful of emerging technologies like solar panels and battery storage." The attachments below give several fine examples of how such investment can be reduced.

I agree with your rejection of the proposed capex for network evolution, while acknowledging that "investment in network evolution can be to the long-term benefit of consumers". I consider it essential for non-network solutions to be developed especially to improve reliability. Note that Vector is evolving its network as part of its normal business planned expenditure, as it should be.

Powerco's draft Annual CPP Delivery Report (ADR) does contain space for non-network opex, but I believe this is not part of the actual CPP proposal. It should be. In fact, non-network solutions to improve reliability should become a major project.

I agree that Powerco's planned interruptions should be included within the quality standard. This is necessary to ensure they are carried out in an efficient and effective manner.

The expected "likely … second and more material price increase, driven by the capex spend during the CPP period, in the transition from the five-year CPP period to the subsequent pricing period" is of great concern. Five years is more than enough time for a genuine change in strategy, from network to non-network solutions.

This change is very likely, due to Government's commitments for affordable energy, and for reducing our climate-change emissions. They cannot be met under the present interpretation of electricity network regulation by the Commerce Commission, much less than electricity market regulation/ management by the Electricity Authority.

I fully expect the concepts of "fair" and "sustainable" to be restored by the present Government. They were explicitly removed by the Electricity Industry Act 2010, and only weakly implemented in the Purpose of Part IV of the Commerce Act, and in section 54Q.

A vast number of publications demonstrate the adoption of new technology and new systems by overseas jurisdictions to make electricity more affordable as well as more reliable. The extracts below give just a few examples.

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Biggest game-changer on network spending approved – a decade late

http://reneweconomy.com.au/biggest-game-changer-on-network-spending-approved-a-decade-late-25198/

A demand management incentive scheme – touted as the biggest game-changer in network spending seen in Australia – has finally been approved by the country's regulators. But it has come nearly a decade later than it should.

The scheme is designed to encourage networks to invest in things other than poles and wires – the equipment that makes up around half of Australia's outrageously high electricity costs.

These include providing incentives to minimise air conditioning use at times of peak demand, and will now be likely used to encourage more solar, more battery storage, and the creation of mini and micro-grids rather than building or replacing poles and wires.

And while the changes unveiled on Thursday by the Australian Energy Regulator have been widely welcomed, advocates lament that they could have been introduced a decade earlier, **and prevented the huge binge on network spending that caused electricity bills to double.** [my emphasis]

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The fact that they weren't introduced a decade ago is testament to the ponderous nature of regulatory change in Australia, and the power and **the influence of the big "gen-tailers" who fought so hard against the rule changes because they feared a loss of potential profits**.

Chris Dunstan, from the Institute of Sustainable Futures, says the need and opportunity for demand management was first identified in 2002 by the NSW-based regulator IPART. But little happened, and what little did happen fell by the wayside in favour of other schemes.

Dunstan says if such incentives had been in place, then network spending could have been minimised, electricity bills could have stayed low, and the current political divide over energy prices that has stymied policy and action on climate and clean energy could have been avoided.

"If we had this mechanism in place (before the five-year network allowance that began in 2009), **we could have saved billions of dollars in infrastructure spending and customer bills**," Dunstan says.

. . . Dunstan wrote two years ago that the scheme – under the AEMC's own estimates – could have saved between $4 billion and $12 billion, or slashed $500 from customer bills a year. But it wasn't to be.

Another advocate, Mark Byrne from the Total Environment Centre, said "it's been a long and winding road. …This reform should ensure that short-term measures to reduce demand during critical peaks are complemented by longer term, systemic measures to reduce peak demand," he said.

. . . Even as authorities roll out initiatives that could increase reliability and cut costs, conservatives – encouraged by vested interests in the energy industry – have launched absurd scare campaigns against demand management, just as they have against climate change, carbon pricing, renewable energy and battery storage. (See our story: Conservatives hit peak stupid over demand response).

AEMO says it has unlocked some 900MW of demand response as part of its summer readiness plan, but **it will need to be followed by rule changes from the AEMC to be made permanent**.

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Extracts from "Smart Rate Design for a Smart Future", by Jim Lazar and Wilson Gonzalez , Regulatory Assistance Project July 2015:
www.raponline.org/document/download/id/7680

"C**ustomers and Technology Unleashed** The smart future will see extensive use of technology to help consumers manage their energy costs, and utility pricing that enables these savings to occur.

A mix of central generation, distributed generation, energy efficiency, demand response, and customer response to time-varying pricing will provide a rich mix of reliable, flexible, and environmentally benign sources to provide quality service **at reasonable costs**.

. . . **Revenue Regulation and Decoupling**

Revenue-based regulation, or "decoupling," is widely used throughout the United States to insulate gas and electric utilities from revenue impacts due to sales variations. . . The essence of revenue regulation is **that changes in sales volumes do not result in changes in revenue**.

… Because revenue regulation removes utility management's incentive to increase sales, most of the electric revenue regulation mechanisms in the United States were established to facilitate more active utility involvement in energy-efficiency programs that by their nature are intended to reduce sales. The success of those programs in California, Oregon, Washington, and other states is widely attributed to the removal of the shareholder earnings impact of lower sales.[124]

… A well-designed revenue regulation framework is the best option to address utility revenue attrition that energy efficiency or renewable energy deployment may cause.

. . . There is no silver bullet to address the legitimate concerns of all interests. The evidence, however, is that **high fixed charges have the most adverse impacts on consumers, the environment, the economy, and society.** Good rate design addresses the legitimate concerns of all major interests, provides a framework for stable regulation of utilities, and enables the growth of renewable energy and energy efficiency to meet electricity requirements.

. . . **Aging grid infrastructure is a nationwide problem that will cost billions of dollars to**

remedy, and creative solutions that combine DG, storage, advanced metering, and other technologies should be increasingly deployed to help minimize those costs.

. . . Straight Fixed-Variable (SFV) is not a step forward, but a step backward. With new technologies becoming more prevalent, it will be important that rate designs reflect actual future changes in system costs and benefits associated with customer usage in order to properly align responsibility for costs, compensate for benefits, and send the correct price signals to all customers. SFV is the antithesis of this, creating a simplistic one-size- fits-all rate that does not align cost to cost causation and has adverse consequences for urban, multi-family, low-income, and low-use customers as well as those who invest in energy efficiency, demand response, and distributed generation. By de-linking customer use from the customer's bill, SFV encourages wasteful consumption and sends misleading, incomplete price signals to the consumer.

The role of regulation in power sector transformation will be to develop pathways that lead to smarter solutions that optimize the value of interconnection and two-way communication for the customer and the grid. Many of these solutions will be market-driven.

. . . A critical component of unlocking the real value of these changes will be the utilization of time-differentiated pricing and the connection of customer and system operator level technologies that will allow a more dynamic interaction between the two. Rather than the traditional model of simply building the necessary supply-side resources to meet an unmitigated demand for energy, smart grids, meters, homes, buildings, and appliances will need to become a more interconnected whole that yields a more optimum cost and engineering solution than previously experienced.

In the interim transition to this future, **regulators should strive to avoid expensive mistakes based on defense of the legacy structure of the industry**. In their stead, regulators will need to focus on identifying costs and benfits of alternative strategies and seek to maximize the net value to customers and society.

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https://www.rmi.org/news/blog_2016_05_18_the_business_value_of_demand_flexibility/

In this digital age, electricity is the lifeblood of our society. After any major disruptive event, the top priority is to restore electric power service. Without power we lack heat, air conditioning, communications, financial services, and access to the Internet, pretty much sending us back to the Stone Age.

But who can afford building more electric power capacity? There are over one billion kilowatts of installed power capacity in the U.S. At such a large scale, increasing capacity even by a few percentage points is very expensive. Experts have forecast the need for $1.4 trillion of investment through 2030 to meet growing demand and replace aging infrastructure in the U.S. alone.

Fortunately, in today's Internet-connected world, we can take a lower-cost approach, similar to the

method that telecom, cable, and Internet companies have been using for decades to manage peak demand on their networks. Instead of building redundant capacity for each user, these networks intelligently manage both demand and supply.

Now, it's possible to apply the same logic to energy demands: software can help lower coincidental demand peaks for a business using the same proven "queuing" approach as other networked industries. And at scale across thousands of buildings, this building-level demand flexibility can help lower peak demand for the grid, saving all customers the cost of building new power plants.

. . . **Benefits for businesses and the grid**

With falling computer costs and rising demand charges, lowering peak demand can pay off very quickly for a business—sometimes in less than a year. Lowering peak demand also creates value for the grid; RMI's recent analysis found a potential for $13 billion per year in savings for the grid, from just a few smart appliances in each household in the country. The savings potential for commercial and industrial buildings is likely just as large.

Today's $300 billion per year electricity industry leaves about half of its available capacity idle, increasing costs for all customers. Business-led demand flexibility approaches can save companies money while dramatically improving the utilization of our trillion-dollar grid, leading to savings for all of us.

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