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Smart metering? Dumb solution

SPENDING MORE TO SAVE LESS

The Federal Government's Energy White Paper promotes smart metering but ignores the evidence on its costs and benefits.

BACKGROUND

Rising electricity prices have become a hot political topic in recent years. Many households have seen their bills more than double over the past decade.

A lot of factors have contributed to rising prices. These include major investments in network 'poles and wires', the cost of green subsidy schemes such as over-generous solar feed-in tariffs and the Renewable Energy Target, and most recently, the Federal Government's carbon tax.

Back in August 2012, Prime Minister Julia Gillard tried to shift the focus of debate about high prices from the carbon tax to 'gold-plating' by distribution networks, many of which are still owned by State Governments.

While government ownership does allow inefficiencies to fester, and Federal and State governments willingly chose to modify the regulatory regime in 2005 to favour energy businesses, the key point ignored by the Prime Minister is that much of the network investment has been undertaken to meet higher reliability standards that State Governments imposed in knee-jerk reaction to high-profile

blackouts in the early 2000s. At the time, no one bothered to consider whether the higher standards they mandated were worth the cost. The risk now is that the Federal Government promotes another expensive scheme without having regard to whether the likely benefits are sufficient to warrant the substantial costs.

FAUX CONCERN

The first point to note is that the current high electricity prices are to some extent the result of a deliberate choice by the Federal Government. When faced, prior to the last election, with the option of an 'Intensity–Based' carbon pricing scheme as an alternative to the emissions-trading/carbon tax approach, the Department of Climate Change stated that one of the ***disadvantages*** of the intensity-based approach was that: "...the lower potential impact on electricity prices reduces incentives for implementation of energy efficiency measures or fuel-switching to less emissions-intensive energy sources at the consumer end."[i]

In other words, the Government's own Climate Change Department considered that the stronger price impact of a carbon tax over an intensity-based approach was a desirable feature of the tax. In this context, it is difficult to see why the Prime Minister is not congratulating the States for creating incentives for consumers to curtail their demand for the benefit of the environment!

PEAK DEMAND

Higher reliability standards would not require as much investment in poles and wires if it were not also for rising peak demand for electricity. A large part of the increase in peak demand has been due to the enormous growth in the installation of domestic air conditioners. Household air conditioner penetration across most of Australia has increased from about 40% in 2000 to over 85% now.[ii] Of course, this is by-and-large a good thing – no-one enjoys sitting through 40 degree heat, and internationally, no-one who can afford air conditioning is denying themselves the comforts of modern life! But like all good things, it comes at a cost, and that cost is the quarter of electricity bills that funds the generation and network infrastructure needed to keep us cool during the hottest forty hours of the year.

TIME-BASED PRICING

In most cases, people are happy to pay higher prices when something is in high demand. Tickets to a football final cost more than tickets to a home-and-away match. Economists generally agree that prices are a better way to decide who gets what than administered approaches like rationing. So it is natural to think that the solution to rising electricity costs is to allow peak-time prices to rise to choke off air conditioning demand on hot days. This could reduce the need for new investment and save on bills in the longer term. But time-based pricing cannot happen for most small customers at the moment because most households and small businesses do not have meters that record the timing of their consumption. As a result, whether they consume mostly on hot days or in the middle of the night is irrelevant to the price they are charged.

The obvious answer is to upgrade old mechanical electricity meters to new digital ones that record time-of-use and thereby allow customers to be charged different prices at different times. In Victoria, the government has mandated the rollout of such 'smart meters' across the State and time-based pricing is due to be allowed next year. But unfortunately, as with raising reliability standards, smart meters do not come cheap.

ENERGY WHITE PAPER

The Federal Government's recent Energy White Paper trumpets the benefits of the wider adoption of smart meters. It says that smart meters can provide information about our electricity usage and allow us to curb our peak demand to reduce bills. The White Paper notes with regret that only Victoria has commenced a smart meter rollout and so far, the response has been mixed. According to the White Paper, this is because while customers are paying the costs up-front, the benefits "necessarily follow broad deployment and so take time to be observable to the consumer".[iii]

What the White Paper fails to mention is that the benefits of smart meters often fall far short of the costs, and this is why other States have not followed Victoria's lead.[iv] Part of the reason is that, as with most technological rollouts – think the MYKI public transport ticketing fiasco in Victoria or any major bank's IT systems upgrade – the costs of rolling out new meters and the systems needed to support them keeps blowing out. Victoria's original cost estimate to gradually rollout manually-read 'interval' meters was only $425 million.[v] This increased to $800 million when the government decided on the flashier remotely-read smart meter option that dispenses with the need for human meter readers.[vi] The cost-benefit analysis undertaken for the incoming State Government last year found that the costs of the rollout were now likely to exceed $2.3 billion, and they have risen further still since then.[vii] At the same time, the anticipated benefits were expected to barely reach $2 billion and benefits would have shrunk since then due to falling peak demand. The State Government decided to complete the rollout because stopping it mid-stream would have led to the worst of all worlds, with most of the costs and few of the benefits. But to be clear, the smart meter rollout will make Victorians worse off to the tune of $300 million in net terms – that is, even allowing for all the presumed future benefits from reducing peak demand and eliminating human meter readers. And far from keeping bills down, the rollout is adding over $100 a year on average to what customers pay on top of all the other increases.

The Victorian experience is far from unique. Smart meter trials have been conducted elsewhere in Australia and internationally. Many of them show volunteer customers start off by enthusiastically switching off appliances, but over time revert to their old usage habits as they get desensitised to high peak prices. Getting customers to persist with peak demand reductions requires extreme 'critical peak' tariffs set many times higher than normal rates coupled with costly education and information campaigns. That would mean tariffs in the order of $1-2/kWh at peak times, compared with about 25c/kWh now – that's a four to eight-fold increase in peak prices. The alternative is to spend even more

money on 'smart appliances' that turn off automatically when demand is high. The most comprehensive smart meter rollout in the world, undertaken in Italy between 2000 and 2005, has not stopped Italian households from paying amongst the highest electricity tariffs in the world. The White Paper shows no awareness of these complexities and challenges.

CONCLUSION – THE HORSE HAS BOLTED

Electricity infrastructure is long-lived and usually once in a generation, major money needs to be spent on upgrading networks to cope with population growth, urban expansion and changing patterns of usage. This does not mean that all network investment is necessary or efficient – far from it. But, for better or worse, it is too late now to reverse the bill increases we have seen over the last decade or that are 'baked in the cake' over the next few years. Much of the latest spurt in network investment has already been completed or is committed, and even a willingness to swelter through future summers will not bring those dollars back. Moreover, due to rising prices, peak demand growth has reversed in recent years, postponing even further the time when smart meters are likely to offer net benefits. In fact, smart meters are likely to be a less worthwhile investment now than at any time since the National Electricity Market was created in 1998.

All we can hope for is that next time growing demand outstrips the capacity of our infrastructure, our political masters base their responses on sound cost-benefit analysis rather than grasp for the latest costly panacea.

ENDNOTES

[i] Department of Climate Change memorandum: http://www.climatechange.gov.au/en/government/initiatives/mpccc/meetings/~/media/publications/committee/electricity-sector-intensity-based-scheme-pdf.pdf.

[ii] Assuming an average air conditioner peak load of 2kw per household.

[iii] Australian Government, *Energy White Paper 2012, Australia's energy transformation*, p.163.

[iv] Although substantially smaller rollout programs have taken place in NSW and elsewhere.

[v] Essential Services Commission, *Mandatory Rollout of Interval Meters for Electricity Customers, Final Decision*, July 2004, Table 1, p.14.

[vi] CRA International and Impaq Consulting, *Advanced Interval Meter Communications Study, Draft Report*, 23 December 2005, Table 1, p.3 (note that no final report was prepared and the cost and benefit estimates were additional to those found in the earlier interval meter study); See also Victorian Auditor-General's Report, *Towards a 'smart grid' – the roll-out of Advanced Metering Infrastructure*, November 2009, p.30.

[vii] Deloitte, *Department of Treasury and Finance, Advanced metering infrastructure cost benefit analysis, Final report*, 2 August 2011, p.7, available at: http://www.dpi.vic.gov.au/smart-meters/publications/reports-and-consultations/advanced-metering-infrastructure-cost-benefit-analysis. Costs have risen further due to the businesses' increased costs of implementing the rollout, which the Australian Energy Regulator has allowed them to pass on through higher metering charges from 2013.

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