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Giving electricity providers something to aim for could reduce prices. Ville Miettinen

Reducing peak demand: targets are good practice

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Better managing peak demand, the primary culprit behind recent rapid price rises across Australia, is a key challenge facing Eastern Australia's National Electricity Market (NEM).

To deal with peak demand, energy providers spend more money on infrastructure like poles and wires. Charges for this account for half of our bills. Some 20% of this investment is only needed for about 40 hours each year when we all switch on the air-con to cope with the increasing number of summer scorchers.

Another way to deal with too much peak demand is through demand management (DM): modifying how much electricity consumers demand. Demand management measures include: installing more efficient and intelligent home appliances, such as air conditioners that can detect peak demand and draw less power; generating power locally, such as with solar panels; and rewarding consumers for reducing or shifting their demand at peak times.

Here in Australia DM has been chronically underutilised. Originally the NEM was intended to be a two-sided market. Electricity needs were to be met through traditional centralised supply and through DM. In California and Western Australia DM accounts for 4% and 6% of peak demand respectively. In the NEM it is a mere 1%.

Why isn't DM used more? Regulation is skewed in favour of infrastructure investment. Under the current regulatory framework, the incentive for increasing DM is that it will save investors money, by reducing or putting off investment. However, this is a very weak incentive because networks receive a regulated profit based on how much money they spend on infrastructure.

Any reduction in demand would reduce their profits. (It is worth pointing out that these profits are fed back to the state governments as dividends – NSW alone has received A$5.4 billion over the last five years.)

Unfortunately, reform continues to focus on providing limited incentives for DM, rather than removing the underlying bias in favour of building more poles and wires. The main reform proposed by the Australian Energy Market Commission (AEMC), the body responsible for making the rules that govern the electricity market, is to wave more money in the networks' faces.

Even with incentives the network businesses are reluctant. Victoria, which has the advantage of smart meters which allow distributors to test innovative new DM programs, provides a stark example. In 2011 Victorian distributors only made use of A$1 in every A$20 available to them in the form of incentives for DM. Two of the state's five distribution businesses didn't bother at all.

There is little point offering a bigger carrot to a horse that doesn't like carrots, you are going to need the stick as well. DM targets are used to provide this impetus in many jurisdictions around the world and if our network companies had a mandated target for reducing demand, we might see more action.

A very simple concept, a DM target does exactly what it says on the tin – provides a target and associated rewards and penalties for meeting or failing to meet it. Yet the AEMC, ever-reluctant to appear to be regulating networks too heavily, has dismissed DM targets, saying they "not entirely straightforward" and that "there is no perfect solution".

If simplicity and perfection were the criteria for energy rules and regulations, nothing would ever get done, so it seems unfair to dismiss DM target on this basis alone. As with any reform, the first step should be to determine whether a DM target is necessary and/or advantageous. Then we should see if there is a relatively straightforward and effective scheme design.

The Total Environment Centre (TEC) recently released a discussion paper which begins to explore this in a little more detail. It concludes that there is a strong case for a DM target and, fortunately, we don't have to start from scratch.

A rough example drawn from international experience and tailored to the NEM would be a simple target set at 1% of the network's annual expenditure, increased each year until it is approaching an economic level of DM investment. Eligible investments would be determined under the existing incentive schemes to ensure that spending is efficient and an annual plan would be delivered to the regulator detailing how this expenditure will be used.

While this is not a fully worked DM target scheme, it at least suggests that the AEMC's cursory dismissal of DM targets is misplaced, and that the idea is worth investigating further.

More research is needed, but it is already clear that we should not rule out DM targets, or any other proven tools for reducing peak demand. Even if current reforms turn out to be successful, a DM target can provide a backstop to ensure that networks use the incentives that they have so far been reluctant to use.

As electricity prices continue to spiral out of control, many have expressed their support for DM targets. In the absence of deeper reform that corrects the inherent biases in our electricity regulation, this seems to be our best chance for making real inroads into the peak demand problem.