

# A Note on Wholesale Demand Response Prompted by the Rule Change underway at AEMC

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## Introduction

I was browsing the internet for some stuff I might have missed lately when I came across, on the AEMC website, all the documentation about a rule change that has been underway on a Wholesale Demand Response Mechanism. I'm one of these strange people that find that topic interesting and even important (in the small world of the Australian Electricity Market), so I looked further.

## Where some key players stand

The large retailer submission I read, which I suspect might be typical, expounded on the load management already contracted by them, and warned against change, especially that involving baselines. There was no commentary on the potential conflicts in managing that load as a gentailer. So no surprises there.

The Large User's Group likes the idea of having opportunities to profit from load response, but in doing so wants to have as little to do with the market as possible. No surprises there, either.

According to AEMO, wholesale demand response is just great as long as its aggregated into large blocks, offers itself to the market by bidding, gets dispatched complies with that schedule, just like AEMO's other clients do. Simple! Again, no surprise.

What did surprise me was that the AEMC consultation paper lined up in almost every respect with AEMO's position. I was surprised because I recall a rule change

proposed by Snowy Hydro and supported by AEMO in 2016, which was to compulsorily schedule loads. The rationale? Unscheduled loads were making load forecasting difficult. On that occasion, AEMC did not make a rule, and during the final workshop pointedly said that AEMO simply needed to improve its load forecasting. I thought that was a bit tough at the time, as AEMO had a real problem and it's bigger today. But there were and are other solutions<sup>1</sup>.

Anyway, evidently AEMC has had a conversion on the road to Damascus, and now thinks load aggregation and scheduling are great ideas, or at least could be.

## The current road block and how to fix it

I didn't get to attend the forum on this topic in Melbourne held in early March 2019, but the feedback I have heard is that everyone agrees that assessing load response is the big challenge. Specifically, doing it with benchmarking won't do, as one quickly becomes tied in knots trying to figure out what might have been when it doesn't actually happen.

So here is my non-benchmark proposal<sup>2</sup>.

1. Manufacture a swap contract whereby a retail customer, on application, pays the difference between the spot price and the time-average spot price, calculated ex post. The periods would be the peak, shoulder and off-peaks of standard tariffs.
2. This contract should be settled with the customer by AEMO, with the counterparty being the customer's retailer.

<sup>1</sup> Some partial solutions are contained in Issue 31 of IES Insider, which can be downloaded from IES's website [www.iesys.com](http://www.iesys.com)

<sup>2</sup> This concept was presented to AEMC on 20 March 2019

The effect of the WDR swap contract on the customer is to give her exposure to the fluctuations of the spot price in each period, but NOT the long term spot price variations, in addition to the retail tariff. This should be relatively easy to manage profitably for many customers. The effect of the WDR swap contract on the retailer is to convert the variable price purchases over each period to a flat price.

If voluntary, the change ought to be efficient and acceptable to both parties (although retailers will likely argue otherwise), because it allocates price volatility risk to the party best able to manage it.

Further, it is easy to show that a flat benchmark load does not change or improve the risk exposure; the swap contract does the whole job so no benchmark is required. That's not much short of magic.

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### Will it work?

Yes, but held back if participation rules are too rigid.

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### Why?

The idea of a swap contract to drive response seems fine, but the "add-ons" of compulsory aggregation and scheduling are response killers. Some load response will show up, but not much.

Others have made this point, but *loads are not generators*. They do things other than consume electricity. Most users like an opportunity to save money, but only if it doesn't risk inconveniencing their primary activity. Scheduling and compulsion, even allowing for some flexibility, is only occasionally acceptable. Aggregation does not make this problem go away, as aggregators necessarily pass on their performance obligation onto the customer.

The problem AEMO is trying to solve is the potential for uncontrolled and destabilising load response driven by a dispatch price known and fixed 5 minutes in advance. A solution that does not require strict scheduling is to arrange for a fast feedback price that falls if there is too much load response (frequency rising) and rises if there is not enough (frequency falling). This is called deviation pricing, and it was described in some detail as a future option in the AEMC's Frequency Control Frameworks Review Report. It's also been pushed by IES for as long as I can remember.

Deviation pricing is capable of early but measured implementation with current technology. It does need an RD&D program to sort out the details, and a rule change.

While deviation pricing is a system wide concept, it could and should be applied specifically to wholesale demand response. It can be self-financing through the demand response mechanism.

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### Conclusion

Taking a broader and slightly technical perspective, we can regard the NEM dispatch process as an open loop system, supplemented with a closed loop system (FCAS and voltage control) to correct for the inevitable small uncertainties. AEMO's problem is that these uncertainties are getting larger. Indeed, the NEM will need a whole lot more fast and slow, large and small generation and demand flexibility than is currently contemplated, each and every day. Faced with this, I argue that more closed loop solutions are required – systems that are much more self-governing.

Looking at AEMO's recent reports and comments, it seems that it's strategy instead is to expand the open loop elements; that is, to press governments, rule-makers and regulators for more compulsion, more scheduling, more direct control, bigger and more accurate models etc. etc...

Eventually, the inherent and growing uncertainties driving the market now and more so in future will likely overwhelm that approach. The market will need lots more flexibility in future. In that respect the AEMC's and AEMO's current approach to rule making appears to be merely marking time rather than facing the future.

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