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18 May 2018



Dear Sarah-Jane,

**Reliability Frameworks Review - Interim Report (ref: EPR0060)**

The Australia Institute welcomes the opportunity to make a submission (attached) to the Australian Energy Market Commission, in response to its *Directions Paper* for the Reliability Frameworks Review.

In our submission, the Institute focuses on wholesale demand response, for two reasons:

1. The Commission has proposed such a good model (option 1 in the *Directions Paper*, discussed in section G of our submission)
2. Wholesale demand response supports the National Energy Guarantee (NEG)

We would be happy to expand on this submission in writing or in person.

Please feel free to contact me on [danc@tai.org.au](mailto:danc@tai.org.au).

Yours sincerely

A handwritten signature in blue ink that reads 'Dan Cass.' The signature is written in a cursive, slightly slanted style.

Dan Cass  
Strategist  
The Australia Institute

# Implementing wholesale demand response

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*Submission to Australian Energy Market Commission  
Reliability Frameworks Review EPR0060 - Interim Report*

Dan Cass  
May 2018

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# Summary

The Australia Institute commends the Australian Energy Market Commission on its work in the Reliability Frameworks Review interim report *Directions Paper*.

In our submission we focus on wholesale demand response, for two reasons:

1. The Commission has proposed such a good model (option 1 in the *Directions Paper*, discussed in section G below)
2. We agree with the Commission that wholesale demand response would support the objectives of the National Energy Guarantee (NEG)

Our submission makes the following points, each of which are substantiated in a section below:

- A. Wholesale demand response supports the NEG
- B. A rule change request must proceed urgently
- C. The Commission's holistic approach is good but must not delay implementation
- D. Demand response has high public support
- E. Market benefits of wholesale demand response can address the energy trilemma
- F. Wholesale and consumer barriers to demand response must be removed
- G. Commission option 1 is the best framework for a rule change

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# A. Wholesale demand response supports the NEG

If reform of the NEM leads to an increase in wholesale, 'economic' demand response, that would make the National Energy Guarantee both more effective and less costly.

As the Commission stated in its media release about the current Review;

Demand response is our future. It can help keep costs down by avoiding unnecessary investment. Demand response would also provide a source of reliability to support the national energy guarantee.<sup>1</sup>

Mrs Anne Pearson, Chief Executive of the Commission, clarified that wholesale demand response and other reforms canvassed in the Directions Paper are not in conflict with the NEG process, but are 'complementary changes to market design to support the guarantee's objective'.

The *Directions Paper* states that the NEG and wholesale demand response support each other in helping improve the NEM by minimising unnecessary expenditure on new power stations and related network infrastructure. The NEG will, according to the Commission, 'signal opportunities for demand response which may help reduce the need for costly new generation infrastructure.'<sup>2</sup>

It is clear that wholesale demand response will lead to more responsive demand, which would lower demand peaks. That should lower the cost of deploying the NEG's reliability mechanism. To the extent that demand response reduces the need for fossil fuel power stations to be dispatched to meet demand peaks, wholesale demand response will also lower the cost of the NEG's emissions mechanism, over time.

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<sup>1</sup> 'Working to increase confidence in the power system's long-term capacity', AEMC, <<https://www.aemc.gov.au/news-centre/media-releases/working-increase-confidence-power-systems-long-term-capacity>> [accessed 19 April 2018].

<sup>2</sup> AEMC, *Reliability Frameworks Review Directions Paper*, Sydney, Australian Energy Market Commission, 17 April 2018, p.144.

## B. A rule change request must proceed urgently

A rule change process should commence urgently because the Independent Review into the Future Security of the National Electricity Market (Finkel Review) set a mid-2018 deadline for the National Electricity Law to be amended to incorporate wholesale demand response.

The Finkel Review recommended (Recommendation 6.7):

The COAG Energy Council should direct the Australian Energy Market Commission to undertake a review to recommend a mechanism that facilitates demand response in the wholesale energy market. This **review should be completed by mid-2018 and include a draft rule change proposal** for consideration by the COAG Energy Council.<sup>3</sup>

In July 2017, COAG Energy Council directed the Commission to have wholesale demand response 'in place by the summer of 2018-19.'<sup>4</sup>

If a rule change proceeds according to the COAG deadline, that would encourage public confidence in COAG and the market agencies and bolster market certainty about the Finkel Review reform process. The Australia Institute wishes to help the Commission in this regard.

We note that in the Terms of Reference for this Review, the Commission stated 'Rule change requests or other reviews related to the subject of the Review may be received by the AEMC while the Review is progressing.'<sup>5</sup>

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<sup>3</sup> A Finkel et al., *Independent Review into the Future Security of the National Electricity Market: Blueprint for the Future*, Department of the Environment and Energy, June 2017, p.25 (emphasis added).

<sup>4</sup> *12th COAG Energy Council Communique*, Canberra, A.C.T, Council of Australian Governments Energy Council, 14 July 2017, p.2.

<sup>5</sup> AEMC, 'Reliability Frameworks Review – Terms of Reference', 2017, p.5.

## C. The Commission’s holistic approach is good but must not delay implementation

We support the Commission’s approach in exploring broad topics in the NEM through its self-initiated reviews, such as the Reliability Frameworks Review and the ‘holistic’ path that the Commission set itself in the Terms of Reference.<sup>6</sup>

However, we are concerned that there are now many worthy but overlapping, ‘holistic’ processes all going at once at the federal and state levels in the NEM and that this may inadvertently delay the implementation of the 49 non-emissions related Finkel Review reforms, that were unanimously endorsed by COAG Energy Council.<sup>7</sup>

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<sup>6</sup> AEMC, ‘Reliability Frameworks Review – Terms of Reference’, 2017, p.5.

<sup>7</sup> *12th COAG Energy Council Communique.*

## D. Demand response has high public support

In September 2017 The Australia Institute commissioned a national poll of 1,421 people.<sup>8</sup> The results demonstrated that demand response is very popular with the Australian public and so is the prospect of participating in aggregated demand response.

Respondents were asked

During periods of very high electricity demand, or 'peak' demand, power prices increase greatly and on a few occasions a year there may be risks for grid stability or shortages.

Which of the following do you think is a better way to plan for periods of peak demand?

The options were 'Reduce peak demand by offering electricity consumers discounts or payments if they choose to conserve electricity during those periods,' and 'Build or upgrade power plants and grid infrastructure to cope with peak demand, paid for by all power users through increased prices.'

- 64% said demand response and 28% said new generation infrastructure
- Support was highest in Queensland, at 69%

Respondents were then asked whether they would be interested in receiving payments for conserving energy during short periods during peak demand.

- Four in five respondents (81%) said they are interested in participating in demand response schemes
- Less than one in ten (8%) are not interested

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<sup>8</sup> TAI, *Polling Demand Response*, Canberra, The Australia Institute, September 2017.

## E. Market benefits of wholesale demand response can address the energy trilemma

The stationary energy sector and, increasingly, transport, is being transformed by innovation, mostly in the form of clean energy technologies. Our general position is that better markets, which increase competition from new technologies and services can deliver a significant part of the solution to the 'energy trilemma' of reliability, price and emissions reduction.

The basis of this position is that technologies such as battery storage, demand response and smart distributed solar PV (i.e. with sophisticated grid communications and control capabilities) can improve reliability, compete with incumbents to reduce price and cut emissions intensity.

There can be no long-term data yet about a process that is just getting underway, so we cannot yet provide comprehensive evidence to support our approach. But it is clear that demand-side measures generally are likely to be the more cost-effective and timely than new build generation at solving emissions, price and reliability challenges, at the same time.

This approach is increasingly finding support among governments and regulators. For example, in 2017 the Minister for the Environment and Energy, the Hon Josh Frydenberg MP, directed the Commission to work with the Climate Change Authority in a special review of policies to solve the trilemma. The report stated, 'The Authority is of the view that demand management measures can potentially contribute to achieving the energy trilemma more quickly than measures that aim to incentivise new energy supply.'<sup>9</sup>

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<sup>9</sup> CCA / AEMC, *Towards the next generation: delivering affordable, secure and lower emissions power*, Climate Change Authority / Australian Energy Market Commission, June 2017, p.46.

This means that market reforms should seek to open up the NEM to competition from ‘negawatts’ of demand response, across services.<sup>10</sup> ARENA’s submission to this current Review put the issue very clearly;

It may be most useful to....focus on ensuring the various services (e.g. system inertia, sub-second frequency response, voltage support, demand response etc.) that contribute to a reliable and secure power system operation, are properly valued, and barriers to accessing markets for these services by existing participants and new entrants are minimised.<sup>11</sup>

We also endorse the Australian Energy Market Operator’s (AEMO) position, detailed in its paper submitted to this Review, that ‘a well-functioning market’ would ‘capture the value of flexibility’.<sup>12</sup>

AEMO uses the term ‘price-responsive demand’ and we believe this is a very clear term, as it emphasises the fact that wholesale demand response should be primarily driven by and delivered through the market and not by interventions driven by reliability concerns.

AEMO makes clear that these kinds of reforms will deliver two of the three trilemma benefits – price and reliability – as an efficient, market-driven shift in supply and demand-response;

With a well-coordinated and highly integrated retail and wholesale market, the NEM can increase competition as well as help manage the system in a way that is more efficient and secure, and thereby provides economic and reliability benefits throughout the networks.<sup>13</sup>

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<sup>10</sup> D Cass, *Saving mega bucks with negawatts*, Canberra, A.C.T, The Australia Institute, July 2017.

<sup>11</sup> J Sibley, ‘Submission in response to the Reliability Frameworks Review Interim Report’, 2018.

<sup>12</sup> AEMO, *AEMO observations: Operational and market challenges to reliability and security in the NEM*, submission to Reliability Frameworks Review, Australian Energy Market Operator, March 2018, p.46.

<sup>13</sup> AEMO, p.53.

# F. Wholesale and consumer barriers to demand response must be removed

A rule change should allow wholesale demand response to compete in the market on fair terms. This encompasses both wholesale and the retail participant or consumer parts of the system.

The first key design feature of wholesale demand response is it must be a fully participating, scheduled competitor in the wholesale spot market, so that 'negawatts' saved can fully compete against megawatts generated.

This point was clearly established in 2002 in the COAG Energy Market Review, led by former Liberal Energy Minister Warwick Parer (the Parer Review). The Parer Review gave a comprehensive description of wholesale demand response's integration into the payments and dispatch systems, in its recommendations (Recommendation 6.1);

The NEM mechanism should be amended to include a demand reduction bidding option that would enable load reduction to be bid into the NEM for dispatch and payment in competition with generation offered into the market to meet demand. This would involve:

- (a) users (including retailers and aggregators) bidding price and volume into the NEM to reduce load on a similar basis to generators
- (b) the NEM systems 'stacking' the demand reduction bids and the generator offers
- (c) the price of the demand bids being compared with the price of the generation offers, and the best combination selected to meet the demand
- (d) accepted demand reduction bids being paid for their dispatch on an 'as bid' basis while generators would continue to be paid according to the system marginal price.<sup>14</sup>

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<sup>14</sup> Council of Australian Governments & Energy Market Review, *Towards a truly national and efficient energy market*, Canberra, Commonwealth of Australia, 2002, p.54.

The second key feature for a competitive market for wholesale demand response is that large industrial consumers and also small business and residential consumers can readily offer their loads into the wholesale market. In the case of small to medium sized consumer loads, this participation will be through third parties, which is well addressed by the Commission's option 1.

There are many and complex barriers at the consumer end. Further work will be needed to design wholesale demand response and then to monitor and improve its implementation at the consumer end. The Commission's *Directions Paper* makes an excellent start on this process.

The Commission has identified these key market barriers to demand response (section 5.3.2 at p.121 and elsewhere):

1. Market arrangements that prevent third parties participating
2. Customers do not understand the features and benefits of wholesale demand response
3. Third parties do not have established systems for acquiring customers
4. The upfront cost of providing control and billing technology, in particular to small consumers, is high but there may not be financial certainty of a long-term return on investment if the investment has to be recouped through existing energy contracts
5. Service providers such as electricians do not understand the features and benefits of wholesale demand response

A credible rule change proposal for wholesale demand response would have to address all these and other barriers sufficiently and ensure the market structure is sound in its handling of baselines and other pricing issues.<sup>15</sup>

At this point, the best proposal is the Commission's option 1 (commencing on page 130 of the *Directions Paper*), because it ensures that demand response can compete at the wholesale end and provides a sound framework for allowing it to compete at the consumer end.

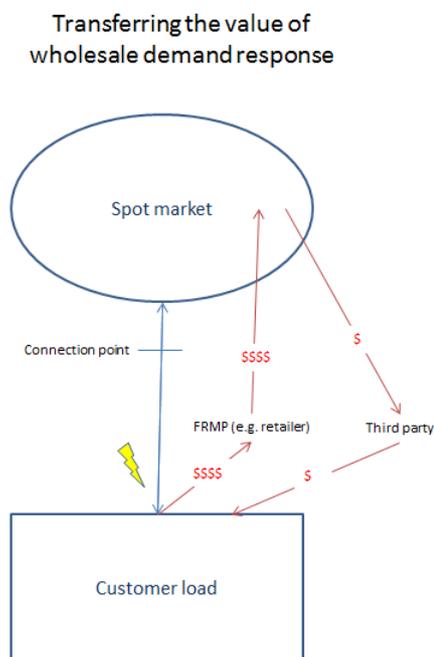
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<sup>15</sup> AEMC, *Reliability Frameworks Review*, pp.132-137.

# H. Commission option 1 is the best framework for a rule change

The Commission's proposed option 1 is the best framework for developing a sound rule change (Figure 1 below). The core of this option is that it transfers the trading and dispatch responsibilities for wholesale demand response from the energy retailer ('financially responsible market participant', or FRMP) to a willing third party.

**Figure 1 : Commission option 1: Transferring the value of the wholesale demand response from the existing FRMP to the aggregator**



Source: AEMC<sup>16</sup>

The critical elements of Option 1 are;

1. Wholesale demand response fully participates in the wholesale spot market dispatch and settlement systems
2. A third party is able to take on responsibility for selling the consumer's demand response to the spot market

<sup>16</sup> AEMC, *Reliability Frameworks Review*, p.130.

3. No requirement for an additional connection point to small consumers, which reduces costs, regulatory complexity and delays
4. No ability for retailers to prevent consumers selling demand response through third parties (if the retailer does not wish to provide this service to their customers)
5. New, dynamic companies with relevant expertise and a clear commercial interest in wholesale demand response can enter the market

We note in relation to points 4 and 5, ARENA's submission described the problem which the NEM faces currently, with retailers able to veto consumer participation in demand response. We support ARENA's view that

Placing the power in the hands of consumers, rather than electricity retailers, would help promote innovation in technology and business models and ensure that an efficient level of demand side participation can be achieved.<sup>17</sup>

One of the issues identified by the Commission which will have to be addressed in a rule change is behavioral barriers.<sup>18</sup> This has primarily been seen as consumer barriers, but there will also be behavioral barriers in other critical parts of the system, for example, electricians may not understand the technical details of demand response consumer technologies and not be confident to install consumer equipment. This lack of awareness and enthusiasm for demand response may also reach to distribution network technicians and others in the supply chain.

*The Australia Institute recommends that the Commission ensures there is research into behavioral barriers across all parts of the system, as part of the process of designing the wholesale demand response rule change and then implementing and monitoring it.*

This would include evaluation of the Demand Response Trial deployed by ARENA and AEMO and other 'insights and information' that ARENA has offered to contribute to the Commission's work in the Review.<sup>19</sup>

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<sup>17</sup> Sibley, p.5.

<sup>18</sup> AEMC, *Reliability Frameworks Review* p.133.

<sup>19</sup> O Story, 'AEMC Reliability Frameworks Review - consultation on issues paper - ARENA submission', 2017, p.5

# Conclusion

In conclusion, we believe that the Commission has done much valuable work in the Reliability Frameworks Review interim report *Directions Paper* and raised issues that are dealt with well by other submissions.

In our submission, we have focused on wholesale demand response, because it could bring such benefits to the NEM and also because there is an urgent need to proceed to a rule change.

COAG Energy Council has directed the Commission to have wholesale demand response in place by the summer of 2018-19, which means that the rule change process should be underway already, if stakeholders are to have sufficient time to participate and the Commission is to have sufficient time to make its decision.

Wholesale demand response is a particularly valuable reform to undertake in 2018 because, as the Commission has explained, it would increase the impact of the NEG.

In this submission we shared the results of national polling commissioned by The Australia Institute, which shows the high level of public support for demand response. It has twice the support of new generation infrastructure, as a means for delivering supply during demand peaks.

We also expressed our support for the emerging consensus that a market mechanism such as wholesale demand response is a cost-effective solution not just to the critical issue of reliability but also to the other two dimensions of the energy trilemma: price and emissions reduction.

The two key elements of a credible wholesale demand response design are that negawatts can compete with megawatts in the wholesale market and that consumers can readily contract with third parties to provide their demand response to the market. We endorse the position taken by the COAG Energy Market Review, which was chaired by the late Warwick Parer AM, who was Minister for Resources and Energy under Liberal Prime Minister John Howard.

The Commission will have to remove a range of market barriers to wholesale demand response, if it is to implement an effective rule change. The Commission's option 1 is the best place to start, as it addresses both the wholesale market and consumer dimensions. In the words of ARENA's submission, this means placing 'power in the hands of consumers, rather than electricity retailers.'