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Dear Manager,

Reliability Frameworks Review

Flow Power is pleased to provide this input into the review of the reliability framework in the changing Australian energy market, and we acknowledge the time spent by AEMC in crafting the Interim Review document.

Flow Power considers this to be a most important review. This submission shares our experiences and learnings regarding the transitioning NEM, and we believe Flow Power has important insights into many of the topics raised in the review.

Flow Power and What is Happening

Flow Power is at the forefront of the transitioning NEM through our close relationship with large business customers as they move to become “connected to the market” through choosing to prioritise operations based on their requirements and energy price profile.

The value being obtained by our customers has been substantial and this is expected to increase, as is evident by a 95% retention rate, positive customer experience scores and a rapid growth through its increasing appeal.

Through this experience we have observed a close alignment of the current NEM arrangements that supports connecting energy users to the signals of the market and the efficiency of the NEM in delivering the trilemma raised in the Finkel Review (reliability, rewarding consumers, lower emissions).

Our Key Message

As the NEM continues to transition (through increasing renewable and distributed generation and potentially more volatile weather) the efficient clearing of the market, both in the short and long term, will require customers to be “connected” and responding to its changing nature.

Connecting customers to the market is being made possible through technology advances and the current market arrangements that provide clear and strong price signals that reward response. Benefits to the market include customer led dispatchable and flexible energy and substantial flow-on effects to the residential market.

Connecting customers to a market that properly signals the value of usage is and will be essential to reliability, market resilience, and efficient price outcomes.

Care must be taken to ensure that any developments undertaken do not act to disconnect customers from market signals and thereby put greater reliance on non-market solutions. Such developments include:

- Bundled and/or regulated prices (such as has been proposed in the NEG) that would greatly reduce transparency and reduce the value of customer response to the fundamentals of the market;
- Strategic reserves that reduce the required level of long term market response;
- An overreliance on supply side solutions such as through fixed rate contracts.

Flow Power supports the NEM RERT function. It provides an important “backstop” for the market. However, we believe that by connecting customers more transparently, the market will minimise the reliance on this backstop except in emergency situations.

The manner the market is transitioning is meaning that any change in arrangements that act to reduce price transparency and strength would risk outcomes that are in violation of the National Electricity Objective. This includes reduced consumer connection to the spot market, reduced innovation, reduced competition, increased market concentration through increased value of vertical integration, lower market resilience, and consequently higher prices for all consumers in the market.

The following sections provide explanation supported by examples of the issues noted above.

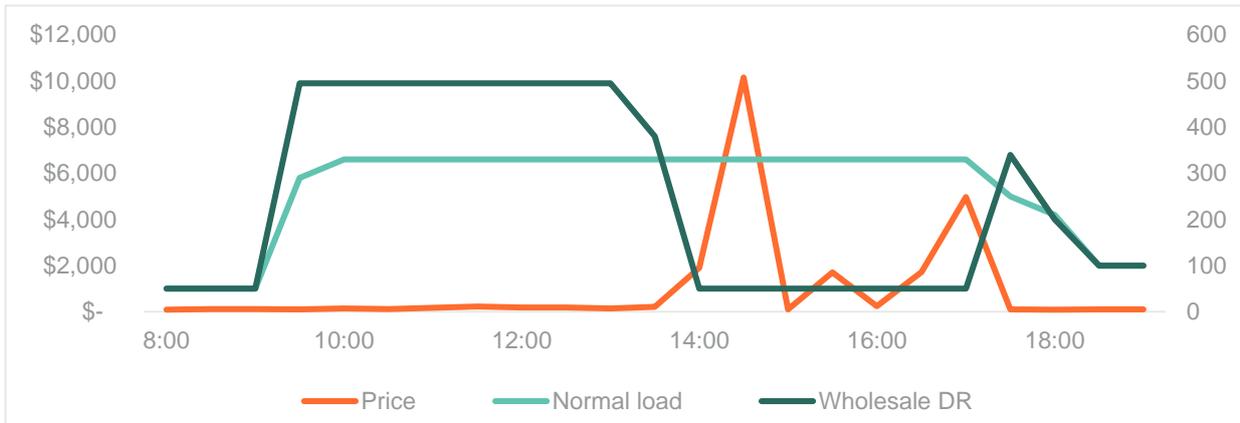
Innovation and Value through Market Based Incentives

Wholesale price transparency exists today allowing customers to respond to these price signals.

Over the decade that Flow Power has been operating as a retailer, it has connected its customers to the signals of the NEM as it was originally designed. The vast majority of Flow Power’s business customers actively respond to market signals i.e. price variations, to keep their power costs down. Flow Power Customers can save up to 30 per cent on their power costs when compared to standard fixed rate contracts. For the market, this is a dispatchable resource that comes at no extra cost or new infrastructure investment.

EXAMPLE: WHOLESALE DEMAND RESPONSE

The diagram below shows an example of a real Flow Power Customer's demand response in action, using market price data from 19 January 2018 in Victoria.



DURING PRICE EVENTS FLOW POWER'S CUSTOMER BASE REDUCES LOAD AROUND 45%

Flow Power has a well-established system that delivers a series of alerts to inform wholesale customers of pending price variability.

In this example, the customer chose to move operations to earlier in the day, switching the afternoon shift to a maintenance program, rather than the previously scheduled production program. Overall, the customer did not minimise their power consumption. Instead, their flexibility avoided the price variation and brought their load-weighted price down to less than \$330/MWh for that period, in comparison to paying more than \$1,200/MWh otherwise. This reduced 400kW of capacity.

Market-based solutions provide incentives to be innovative, benefiting the consumer".¹

Market Incentives provides for Renewable Generation Integration

The changing power market in Australia is welcoming increasing volumes of low cost renewable power, both in the form of large scale installations and distribution energy resources. Flow Power has seen the benefits and possible changes implemented by customers in different ways for each form of renewable power.

Our experience has shown that these forms of generation need little, if any, firming contracts from other generators if customers are encouraged to "firm" up their response.

Large Scale Renewables pose an opportunity for energy users to access low cost clean power that meets their business requirements from both a profitability and branding perspective.

The AEMO ISP report shows that more and more renewable power is coming online² and this will be needed to replace aging generation.³ Further renewable energy developers need a large portion of the plant to be contracted before reaching financial close.

To support this need Flow Power has introduced its Renewable Corporate Power Purchase Agreements (PPAs). These PPAs enable customers to lock in fixed price energy for up to ten years. The secret to their success is linking the customer load to the variability of the renewable energy

¹ AEMC Interim Reliability Framework Review p i

² Ad hoc reports show that most retailers have contracted enough to meet their obligations under the RET, meaning that more capacity is available to be sold at prices at less than half the current market price.

³ AEMO Integrated System Plan

generator. This is done through installing our kWWatch® Intelligent Controller onto both the customer sites and the renewable generator meaning that customers will power up and down in line with the output of the wind farm. If the customer needs to use power outside of these times, energy is sourced from the spot market or financial hedges.

The first of these was last year and was to connect commercial and industrial businesses to the signals of the Ararat Wind Farm as well as the wholesale market.

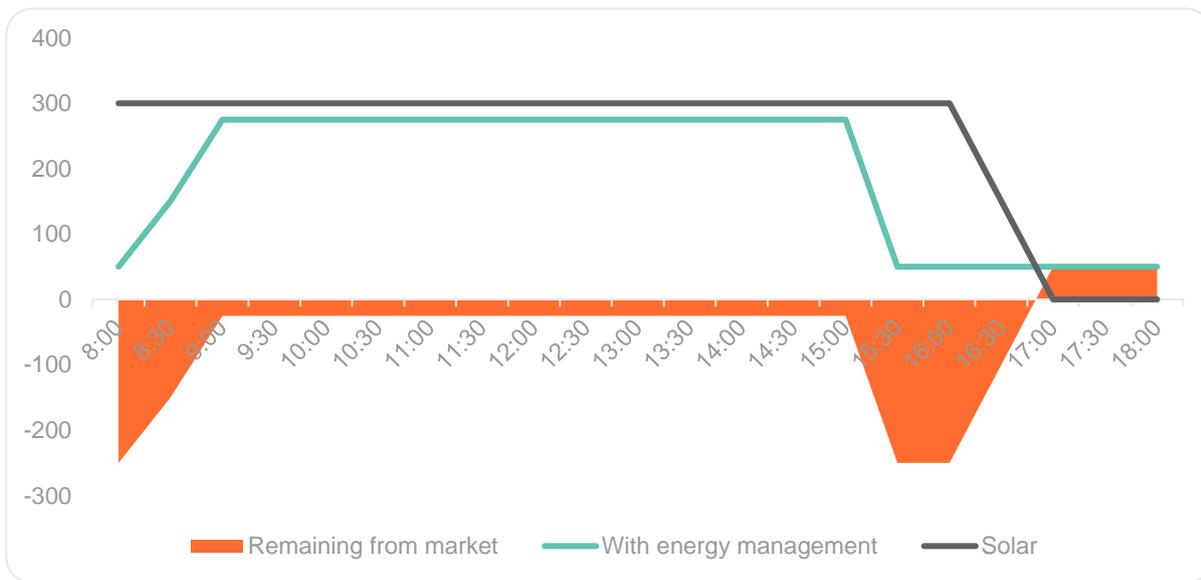
Distributed Energy Resources such as solar PV, diesel generation, and storage is changing the demand-profile of the Australian power market.

The middle of the day has quickly become the cheapest time to use power due to the growth of rooftop solar. Energy users with significant solar systems are already reporting difficulty in obtaining fixed rate retail contracts. Flow Power assumes that is due to the difficulty for other retailers to hedge the shoulder of the peak.

Many of those same users are installing technologies such as Flow Power's kWWatch® Intelligent Controller or Zen Ecosystems thermostats and to control their power use. These users are now able to make choices to move power use into lower cost periods and provide capacity back to the market.

EXAMPLE: USE OF DISTRIBUTED ENERGY RESOURCES AT A SCHOOL

The figure below shows the power profile for a sample day of an actual school that has distributed solar energy and which also has Flow Power's kWWatch® Intelligent Controller installed.



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The solar panels cut power costs during the day where power use is the highest. Later in the afternoon on this sample day spot energy prices increase to high levels. Flow Power's kWWatch® Intelligent Controller switched off the air/reduce conditioning thereby pushing unused solar generation into the grid. This resulted in this school receiving the high market price for its exported energy and also supporting the power grid.

In the future as the price curve changes, the same school could choose to invest in storage to either sell the energy later or keep their systems up and running overnight.

The Value of Wholesale Demand Response

The benefits of market arrangements based on the original NEM model of spot market signals are proving to be substantial, and technology is now providing for such benefits to be obtained by customers and the market. These benefits include customer led dispatchable and flexible energy.

At Flow Power we view the value of demand response in terms of what it delivers for the customer as well as what it delivers to the market.

Under Flow Power's pass-through model, the value to customers is primarily delivered by accessing low prices and avoiding the relatively rare high-prices. As described in the AEMC's interim report, price incentives drive customers to shift power use and avoid power intensive activities during periods of peak demand to cheaper times of the day.

Customers can assess the short and long-term benefits and costs associated with making these operational changes. In the short term, customers can weigh up the value of choosing to halt or reduce operations during a market event against the cost of peak power prices. In the long term, they can dedicate time to investigating on-site generation, storage, and prioritise investments in energy efficiency and implement cost-effective manufacturing shift times.

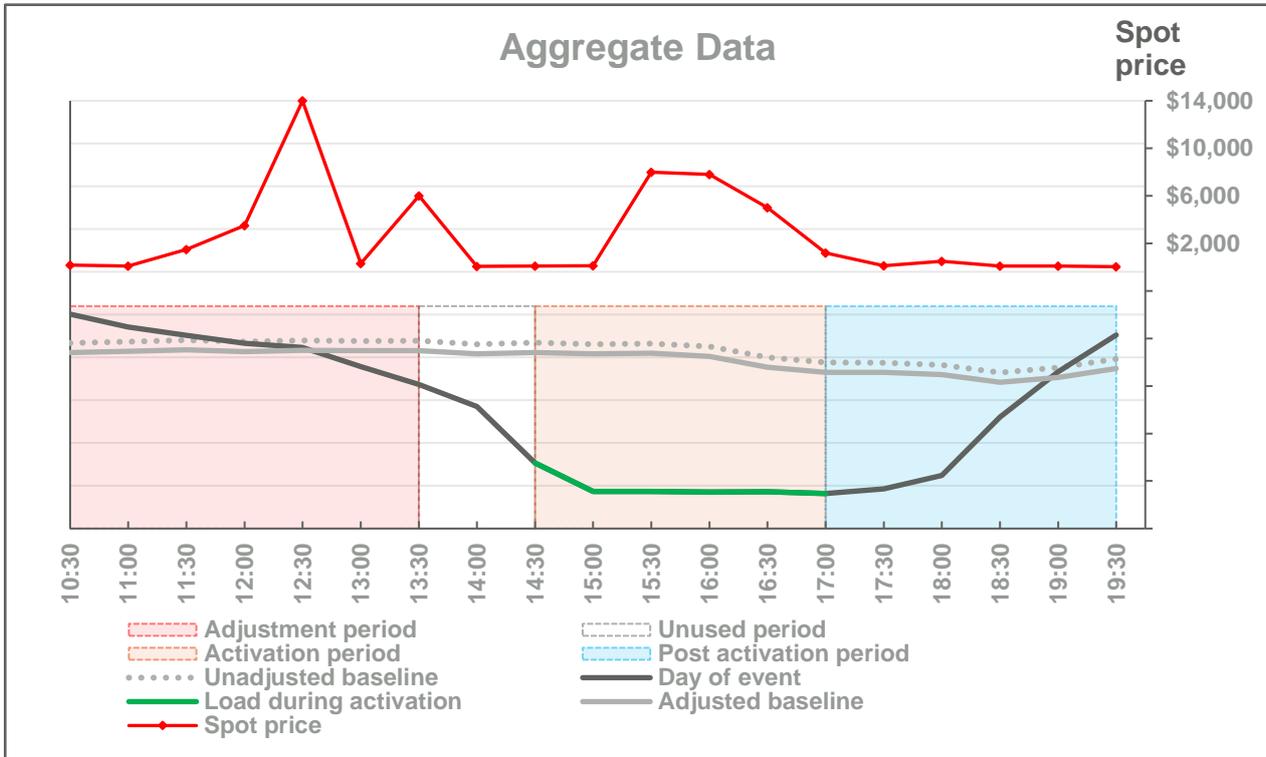
Wholesale demand response saved customers 30% on energy costs

Customers repeatedly tell us that they move shift working times around to avoid the bulk of the peak and choose to undertake energy intensive activities in the middle of the day. Flow Power customers appreciate the importance of flexibility and dispatchability while also valuing the ability to opt out of responding to grid events if the costs outweigh the benefits.

For the market, wholesale demand response is the cheapest capacity it can procure because effectively it is "free". Users are "naturally" responding to market signals and providing a valuable reliability service for no payment. Calculating the value of this service is an exercise akin to quantum measurement but if the price signals are strong enough, it can be relied upon across the NEM.

EXAMPLE: DEMAND RESPONSE IN ACTION 19 JANUARY 2018

The graph below shows Flow Power business customers across our Victorian portfolio powering down as part of a market event. It shows an event in Victoria during which our customer base avoided a period of high prices and participated in the AEMO RERT program.



If say, 500 Flow Power business customers had responded to price signals in SA during the February 2017 load shedding event, the event could have been avoided.

Issues that would Inhibit Market Efficiency and the Value of Demand Response

Bundled products that reduce price signals represent a substantial risk to the efficiency of the market. A move to more complex bundled products, such as has been suggested under the National Energy Guarantee (NEG), reduce the efficiency of each of the bundled products. Under such arrangements new and innovative retail products that connect customers with the wholesale market signals may be lost through opaque pricing and which affords vertically integrated players more power to reduce price transparency in the market. The impacts would include reduced liquidity, less choices for customers and ultimately higher prices for end-use customers.

Supply side focused arrangements such as contracts that price in the risk of volatility (fixed rate contracts) act to disconnect customers from the market by removing incentives to respond to market needs. There is often confusion that fixed rate contracts directly reflect the futures market and spot price trends. Many business users on fixed contract rates could benefit by making relatively small changes in their operations to avoid high market prices thereby reducing system constraints.

Strategic reserves have the risk of reducing the value provided by connecting customers to market signals which include the value of demand response under a wide range of conditions. The flow on effect of connecting customers to market signals through wholesale demand response can, and does, pre-empt the need for more expensive options such as strategic reserves. It is cost efficient, customer driven and transparent and Flow Power have proven that it works.

The RERT remains needed

Flow Power does recognise and support the need for the RERT as a “backstop” when all else has been used. We also recognise the value the RERT can play in introducing new customers to the value of demand response. We however caution that the role of the RERT should be as a backstop only and that any overreliance that acts to reduce market response should be avoided.

Recommendations

Flow Power believes that the market is set up and should be set up to succeed. Wholesale demand response can resolve the market issues faced today by providing reliability during peak demand. To encourage this further Flow Power makes the following recommendations:

- Should the NEG be introduced, ensure that wholesale market signals remain clear and that transparency is supported to ensure the development of new and innovative products, consumer choice and competition.
- Innovation should be encouraged to drive competition in the market and AEMC should be aware of concentrated market power.
- Customer led decisions to offer measurable and natural responses to price signals should be supported and via the contribution they provide to dispatchability and flexibility.
- Encourage a move to strengthen price signals and make the signals more visible to users, including increases to the market cap.
- The introduction of a strategic reserve is not needed and would risk reducing the efficiency of the market, with increased prices higher than just the cost of the strategic reserves.
- The RERT remains crucial as a backstop but should be limited in its scope.

If you have further questions please contact Liz Fletcher on 0417 080 535 or email liz.fletcher@flowpower.com.au

Kind regards

Matthew van der Linden
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Flow Power