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Dr Kerry Schott

Chair, Energy Security Board

info@esb.org.au

Dear Dr Schott,

National Energy Guarantee

Flow Power is pleased to provide input into the development process for the National Energy Guarantee, this follows on our submission on the Reliability Frameworks Review in February 2018 which has a number of common matters to the Guarantee.

We are at the “coal face” of the changing power market through our relationship with large customers and our detailed involvement in the NEM. This submission is based on our experiences and feedback from customers (details from our recent customer survey are included in the appendix). It provides important and essential insights into some of the more fundamental issues essential to the best design of the Guarantee.

The key messages from the Consultation Paper on the Guarantee presented in this submission are as follows:

- The future market must maintain the value incentives to consumers (particularly commercial and industrial users) from spot prices, and any changes must not act to increase costs or dampen signals that an increasing number of medium to large consumers are responding to. To do so would largely diminish the growing response from the (C&I) demand side that is both essential to industry competitiveness and electricity market efficiency.
- Reliability obligations must recognise the preferences and demand response of different consumers. Consumer demand response must be treated on an equivalent basis as controllable supply side capacity.
- The reliability setting (in particular the Market Price Cap) must correspond to the reliability standard recognising the increasing amount of intermittent generation.
- Arrangements associated with the Guarantee must ensure transparency and liquidity in contracts associated with satisfying reliability and emission obligations. Failure to do so would bias the market to large vertically integrated (VI) entities, resulting in significant barriers for non-integrated retailers and generators, and substantially reduced competition.

Definitions used in this paper:

Consultation Paper	Energy Security Board, National Energy Guarantee, Draft Design Consultation Paper, dated 15 February 2018
Retailer	Refers to the market participants that will be subject to the Guarantee.

About Flow Power and what we do

Flow Power retails to medium to large C&I customers under a model that fully values demand response to spot price signals and renewable generation profiles. We support future arrangements provisioning the trilemma of reliability, sustainability, and affordability.

Our business outcomes, which are projected to have continued and rapid growth moving forward, are clearly demonstrating the increasing value being obtained through (C&I) customers being “connected to the market signals”.

It is our firm belief that this will increasingly provide substantial value to business customers (by prioritising operations based on their business requirements and energy price profile) and to the market as a whole. Any change in arrangements must act to support and further enhance price signals that are fundamental to how this value is obtained.

Introduction

The principle of the reliability obligation is to identify any reliability gaps ahead of time, provide the opportunity for the market to respond, if market response is inadequate, undertake the most appropriate action to address the gap and importantly allocate the gap to the “causers” of the need. What is allocated as “the gap” remains an issue to be resolved, but this could be a contract or rights to capacity and costs associated with the added need.

An alternative suggestion is not to allocate the gap to retailers but to have AEMO mediate new contracts between willing buyers and sellers. The emissions obligation is to be based on the emissions intensity of generators associated with retailer contracts or the pool.

The issues to be addressed in this process are substantial, as evidenced by the number of questions asked in the consultation paper regarding the different facets of the Guarantee. We recognise that all of the issues raised in the questions need to be considered carefully as the details of the arrangements that will underpin the Guarantee are crucial to how the market will respond.

On a more fundamental basis the consultation paper highlights the complexity of the matters that need to be considered in the design of the Guarantee, and that resulting arrangements will need to reflect this complexity. It also highlights the increased role of “central projection” and potential “operator bias” over market based response, and market intervention crowding out planned market investments.

We appreciate the Guarantee is in the early stages of development and that stakeholder input is being sought throughout this development process. With the complexity of issues to be considered we observe that such continual input is vital, and we look forward to providing additional input through the process particularly when details of the proposed Guarantee design become known.

This paper is structured to address what we believe are fundamental requirements of the Guarantee if it is to achieve its stated objectives. We also address a number of the questions posed in the Consultation Paper that we believe are central to the success of the Guarantee.

The structure of this paper is as follows:

- Who is required to respond
- Ex ante vs ex post approach to compliance
- Should the requirement be expressed as a total or an increment
- Response Dynamics and Market Economics
- Reliability Guarantee details
- Emissions Guarantee
- Final comments on Key Matters.

Who is required to respond?

One of the most important sections of the Consultation Paper is that titled “Who is required to respond?”. An equivalent question is: who has the responsibility for reliability? This is a key issue because the Guarantee is about placing the obligation on consumers (through retailers) and any caveats or exclusions on who is required to respond, could fundamentally change the dynamics and efficacy of the Guarantee.

Before addressing the questions raised in this section we state what we believe what should be a self-evident and guiding principle of this consideration. This is that consumers (through retailers) should be treated on the basis of what they require and provide (in terms of reliability) and not on their market classification.

This means that it is the degree to which a customer is connected to the market signals that is relevant (i.e. its response to wholesale prices) and not the arrangements used to pay for electricity supply and delivery. To have compliance based on classification would provide for “reliability shelters”, placing unfair and additional onus on the remaining consumers.

This also means that being exposed to the spot market is in itself a sufficient reason to avoid compliance obligations because such consumers are signalling their preference to treat energy as a commodity that is rejectable. Conversely those who are not willing to be exposed the spot market are signalling their preference for continuous supply and their associated willingness to pay for the cost of reliability. This would be as part of a financial hedging strategy (using traditional fixed rate contracts or bespoke contracting).

So in practice, if a reliability gap is triggered it would be upon a retailer to show to the regulator the breakdown of it's customers based on whether or not they are backed by contracts to generation or empowered to respond to market signals through the spot market.

With this stated, we address the specific questions raised in the Consultation Paper.

Question: Should a different level of compliance and/or reporting requirement be required for large energy users who are registered customers?

We certainly agree with the reasoning in the Consultation Paper¹ that to exclude consumers on the basis of participant type is economically unsound and would invite perverse outcomes. This is also evidenced by the following:

- Many large consumers (dependant on their operations) may value supply reliability higher than many residential consumers;
- Large customers account for a large portion of the market and their exclusion would place the total onus on a smaller group of consumers.

Question: What are stakeholder views on extending the reliability requirement to large energy users that are not market customers?

It is the retailer's (or large market customers') obligation under the NEG to manage demand in line with the market – be it through spot price signals (demand response) or contracting.

The Consultation Paper supports this contention (and proven independently by Flow Power). In Section 5.7.4 it states: “some of the customers do respond to high pool prices by reducing their load so this demand response also needs to be recognised”.

Question: If the reliability requirement should be extended to large energy users that are not market customers, what would be an appropriate definition of ‘large energy user’?

The argument here is as above. This means that any definition of ‘large energy user’ needs to recognise those consumers responding to the market and those not. Either categorisation requires the retailer to empower customers to respond to market signals where possible to avoid added costs.

Ex ante vs ex post approach to compliance

The matter of compliance through either ex-ante or ex-post assessment directly impacts the reliability signal sent to the market and consequently to how the reliability compliance is addressed. The Consultation Paper makes a number of observations in regard to these two approaches. We make these observations:

- The principle of the reliability obligation is to identify the market need and take action prior (to the year of inadequate reliability) in order to ensure reliability.
- Risk management policies have most conventional retailers develop their hedge book for a given year over a period of two to three years leading up to the given year, with full contracting obtained no more than 6 to 12 months from the given year. This means any ex-ante assessment based on existing contracts in the “gap year” will most likely not show retailer intentions or if sufficient contracts are available in the market.

The above indicates that at the time a gap is identified, any assessment of the need through inspection of contracts in the gap year would potentially have most of the market in the gap year uncontracted, and thus deemed subject to gap allocation. This is considered reasonable, as any gap indicates that there would be insufficient capacity to cover all consumers desiring fixed tariffs. We add this qualification as consumers that respond to the market are most likely to provide more capacity on a per unit demand basis than the size of any allocated gap across the market.

¹ This was expressed in Section 5.7.4 as follows: “While large energy users registered as a Customer are small in number, they account for a sizeable proportion of energy supplied in the NEM. Therefore, the efficacy of the reliability requirement could be materially affected if these large users are exempt from compliance. Further, an exemption could provide a perverse incentive for large users that are currently contracted with a retailer to become market customers. However, a different level of compliance and/or reporting requirement may be justified for those market customers who are not retailers.”

Clear incentives require any obligations to be known at the time any investment decision is made (i.e. ex ante). Not to do so would weaken the response incentives and ignore the principle of cause and effect (i.e. those responsible for the assessment having the associated obligation).

The signal of a gap requiring the purchase / allocation of contracts (either through AEMO or market development) would influence the market price of other traded contracts (either negotiated, over the counter or exchange traded). Such allocated contracts could set the clearing price. This could have significant implications for total consumer costs.

Noting the above, the relevant questions are addressed below.

Question: What are stakeholder views on an ex ante or ex post approach to compliance?

The principle of the reliability obligation must require this to be ex-ante.

Question: What are stakeholder views on the implications for the assignment of the gap, given an ex ante or ex post approach?

The assignment of the gap is the basic incentive for the market to respond, and how this is done is a key issue:

- Ex ante: clear signal to responsible parties to respond;
- Ex post: risk that this would be viewed as a warning for retailers to undertake arrangements that would not address the reliability issue, but only the compliance obligation.

Question: What parameters should be taken into account when deciding between these two options?

These parameters include:

- The clarity of signals to responsible parties and the incentives it would provide;
- Greater likelihood of a non-market response under the ex-post model, and that the reliability issue will persist;
- The likely outcome that the high demand conditions on which the gap is based will not occur, and any assessment will have similar uncertainties as that for ex ante;
- Potential gaming of positions under an ex post approach.

Question: Does an ex post or ex ante approach impact different retailer types?

This relates to the measurement and assessment based on comparing contracts of many types, physical generation, and demand response by consumers. While the principles of assessment could be the same, noting that ex ante would involve projections and ex post review.

This would mean that parties that relied on contracts as their prime means of compliance would be at a significant advantage under an ex post compliance regime.

Should the requirement be expressed as a total or an increment?

The issues of what the requirement would represent is a most significant issue. The Consultation Paper correctly notes the implications associated with the imposition of a “total” obligation versus only the gap.

A total obligation would result in a major upheaval of the market, with consequences that include:

- Changed risk management;
- Contract price increases (through increased demand for contracts);

- Spill over to consumers with a spot exposure preference and to consumers that have a preference to respond to market price signals.

The gap allocation approach achieves the same of the “total approach” but with significantly less market disruption.

Response dynamics and market economics

The design of the reliability obligation must ensure economic consistency and protect against outcomes that are counterproductive.

The Guarantee introduces a tension between market development and market intervention. The types of investments that may be in play include:

- Planned market investments (not considered committed) prior to an announced reliability gap;
- Market investments based on an announced gap but not announced;
- Market investment announced and not committed;
- Market investment announced and committed;
- AEMO developing capacity and associated allocation (market intervention).

Market intervention is the result of market failure or not providing sufficient time for the market to respond (recognising that after the gap is identified time is given for a market response).

Failure of the market to respond after notice of a gap would indicate that the reliability setting (given by the Market Price Cap and Cumulative Price Threshold) are inadequate or the market assessments of future wholesale price risk (including supply reliability) are different than assessed by AEMO. There could be many reasons for such a projected demand outlook.

Intervention by AEMO of new capacity and associated contracts priced on the basis of new capacity invites substantial costs if these are priced significantly higher than that associated with market needs (based on future price risk). This means that the reliability settings (MPC and CPT) must be set to reflect the reliability standard.

Other matters that need to be addressed include the following:

- The risk of market intervention, or the threat of such, would act to increase the risk to potential developments being considered
- A reliability gap for a small number of years (e.g. 2) would have supply side development issues given new capacity requires substantially longer contract commitments;
- Not interfering with, or dis-incentivising consumers who are providing demand response.

Reliability Guarantee detail

The Consultation Paper raises a number of questions in relation to the mechanics of the reliability obligation. In particular, how the gap is forecasted, how it is expressed, and how it is allocated to regions and retailers within each region.

The difficulties in undertaking such assessments required in the reliability obligation process are very considerable and need to be fully appreciated. Experienced electricity market modellers will likely testify that even with detailed process control, two different modellers using different models would likely arrive at different answers.

Without being properly addressed, these issues have the potential to undermine the economics and confidence in reliability obligation objectives.

This section presents some of the main challenges to such assessments.

Assessment of any “gap”

The Consultation Paper states that the determination of a reliability gap may use MTPASA, ESOO or a newly developed approach. Whatever is used, it is understood that the gap will be identified through comparing future year projected unserved energy (USE) against the NEM standard (the current standard being < 0.002% USE).

In relation to identifying the existence and size of any gap we note the following:

- There is an assumption of no market response other than committed projects. However the market often makes decisions with minimum lead times to commissioning.
- The “modelling error” in any assessment would be substantial. Small changes in assumptions and the use of different models / sampling techniques would likely result in significant changes in any assessment of future USE. Given the substantial costs that could be associated with any particular gap assessment, this process could be subject to significant disputes.
- The process of assumptions development and modelling would need to be transparent, as not to do so would have high risks for all parties (particularly AEMO). This would be an immense exercise. Assumptions would include matters such as (but not limited to):
 - regional demand profiles and the response to price signals
 - the reliability of different generators due to their different forced outage rates
 - the operating regimes of different generators
 - the transfer capacity provided by interconnectors at times of maximum demand
 - the statistical uncertainty introduced by increasing level of intermittent generation
 - allocating supply and reliability across interconnectors contains many assumptions.

The assessment of a “gap” done at any particular point in time may result in a profile that has this appear in different sizes and in non-contiguous years. This could be due to a range of assumptions such as new renewable generation, retiring generation, demand outlook, planned maintenance etc.

Allocation to retailers

The allocation of a gap to retailers would be as difficult as the calculation of the gap. Issues to this include:

- Matching different retailer load profiles to system maximum demand is statistical, with potentially low correlations;
- Corrections would need to be undertaken as customers churn, particularly C&I consumers;
- The translation of existing generator contracts into supply reliability based on the retailer’s load profile.

It should also be noted at this point the integral role that the retailer plays in empowering consumers to understand their demand (especially at a C&I level). This includes the balance between the trilemma that this Consultation aims to address.

Emissions Guarantee detail

In relation to emissions we first observe how the proposed emissions obligation concept compares to price and capped regimes:

- Under carbon pricing or a Clean Energy Target, emissions costs are reflected in the spot price of energy. The carbon price is reflected in generator SRMC’s.

- Under a cap and trade scheme, certificates are priced based on supply and demand and a shortfall penalty. Certificate prices are reflected in generator SRMC's.

In both of the above regimes, low emissions generators benefit without resource to retailer contracts.

The Emissions Guarantee proposal has a dynamic similar to a cap and trade, but where retailers have the obligation and not generators, and where certificates are replaced by actual low emissions generation.

There are a number of consequences to this that need to be considered in the design.

Low Emissions Generation Economics:

- It is not possible to separate carbon from energy
- Without a contract from a retailer, low emissions generation receives the same price as a high emissions generation
- To the extent needed, contracts with retailers will fulfil the role the previous LRET did, which is to provide revenues required for renewable generation to be economic up to the required level of emissions abatement
- Contracts may have a premium based on the costs of generation and revenues through the energy market.

Source of Low Emissions:

- Parties with renewable generation will control this market
- This is most likely to involve the large VI entities.

Compliance:

- The nature of the generation output means that it is more difficult to precisely match emissions obligations than under say a scheme with certificates;
- The relationship between physical generation to contracting is weak unless the contract specifies physical outcomes.

Final Comments on Key Matters

The success of the Guarantee requires the economic provision of reliability and emissions abatement. This requires:

- On the demand side, not disadvantaging a large segment of consumers that will increasingly deliver value to the market;
- On the supply side, not disadvantaging renewable generators, outside of any emissions requirement, that will increasingly deliver value to the market.

Particular issues and observations associated with the Guarantee are as follows.

Supply side and demand side balance. While we are pleased to see recognition that the Guarantee will need to support demand response, the general tenant of the consultation paper is AEMO ensuring that sufficient controllable capacity is available. This has high risks of being supply side solution biased. The NEM is moving past this paradigm.

The proper recognition of consumer preferences. This is the essence of the Guarantee and is increasingly becoming a key issue for the efficient operation of the NEM. We can broadly distinguish two types of consumers:

- Consumers that require supply at all times – these consumers are typically supplied by fixed rate contracts to the level of their potential demand. Supply costs / tariffs reflect the cost of managing the supply cost risk (typically through option contracts).
- Consumers that value trading supply with costs (i.e. by responding to market signals) do not require fixed rate contracts but instead value the cost rewards of such response. This portion of the market will need to be properly accounted for as it represents a significant and increasing capacity value in the market. The preferences of these consumers, which is most important to their competitiveness, need to be recognised in any reliability guarantee arrangements.

Investment economics: The NEM must provide for positive economics of investments required to avoid a reliability gap, or under a scenario of a gap being allocated to retailers.

Limiting the market power of the large vertically integrated retailers. A consequence of requiring compliance of reliability and emissions through specific contract procurement, the main suppliers of which are large vertically integrated retailers, is increased control and market power of these entities. This is on top of largely fixed compliance costs which will have a significantly high per unit costs for small retailers.

Liquidity in the types of contracts required by the Guarantee will be essential if competition is not to substantially decrease.

Economics of renewable generation. Unlike the LRET (or other similar schemes) there is no recognition of low emissions generation proposed in the supply side of the market, it is only through compliance obligations which require either physical generation or “emission contracts”. The development of renewable generation will be at a disadvantage compared to current arrangements.

The announced closure of Liddell Power Station provides a case study for issues the Guarantee would need to be address. This is presented in the box below.

Lessons for the Guarantee arising from the announced closure of Liddell

The announced closure of Liddell provides an example of the challenges that the Guarantee would be required to address if it were to effectively operate.

We first note that the announcement has been with sufficient lead time to satisfy any time requirements, suggested in the Finkel review.

The tension between central operators / government and allowing the market to perform was evident at the March 2018 Australian Financial Review Business Summit . At that summit Federal Energy Minister Josh Frydenberg indicated that AGL's three-stage plan to replace Liddell may not be acceptable for the government. EA managing Director Catherine Tanna stated that “If it's crystal clear that it will close, the market will solve any shortfall”, and also added "But if the market thinks the government's going to intervene and somehow ensure that it doesn't close you can't make investments decisions to replace it. (Reported in the Australian Financial Review 8 March 2018).

The observations and learning from this example are as follows:

- There is a difference in assessments between government and the industry as to the size of any reliability gap that would be associated with the closure of Liddell, and also the reliability contribution that would be provide by different combinations of assets;
- The discussion is supply side centric. The forward assess must include a recognition of increasing consumer preferences to participate in the value that is being created by the closure of Liddell;
- Stronger market signals would possibly be luring greater market response than is being observed. It is evidence that the reliability setting in the NEM is not keeping pace with the changing nature and needs of the market;

- The absence of detailed modelling by AEMO is meaning that there is no common basis of assessment for the resulting reliability gap;
- Arrangements place greater risk on investments that are not part of a retail portfolio, which may be limiting response to entities that have generation.

We have extended many of the consultation questions to our customers and their responses are included in the appendix that follows.

I would like to seek a meeting with Dr Scott to discuss these matters. 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

Managing Director

Flow Power

Customer survey outcomes

Comments from customers

- Knowing the forecasted price for the week is nice but of little value since the price can vary by \$'000's every 5 minutes. When coupled with the fact that electricity can be consumed at a given price for a five minute period but charged at a higher price for the 30 minute interval because prices spiked late in that interval it means that pricing integrity goes out the window. Innovation in demand response is likely to improve reliability but doubtful whether it will reduce costs.
- Businesses such as our need lower electricity costs overall and better pricing certainty as it is extremely difficult to compete internationally with our current system.
- ... guarantee that enshrines large incumbents at the expense of competition will lead to worse outcomes in the long run. We would favour policy certainty that encourages new investment as the energy sector transitions to lower emissions technologies.

Empirical thoughts on statements

We asked customers to what extent they agreed with the following statements on a scale of 1-5. Below are the weighted average answers

Innovation in demand response, will improve power reliability and reduce costs.	3.95
Since switching to Wholesale power we have changed our operations to reduce our energy cost with minimal impact on output.	3.05
The needs of large energy users, like our business, are met by the current electricity system	2.63
There should be reserve energy available to meet business and system needs in the face of unexpected changes.	3.89
Technologies, such as solar and storage, could ensure more secure electricity supply for everyone	4.16
Investing in large-scale renewable energy will help meet Australia's emission reduction targets.	4.11
The generation source of the electricity we buy is important to our business	3.05
Aligning our operations to make the most of low energy prices in the wholesale market is a priority for our business.	3.37
In the future our business will look to technology to be energy efficient	4.21
Knowing the forecasted price for the week is important information for our operations.	3.53