

8th March 2018

Energy Security Board

Submission by email to: info@esb.org.au

National Energy Guarantee - Draft Design Consultation Paper

Snowy Hydro Limited welcomes the opportunity to comment and provide feedback on the National Energy Guarantee (NEG) - draft design consultation paper.

Snowy Hydro Limited is a producer, supplier, trader and retailer of energy in the National Electricity Market ('NEM') and a leading provider of risk management financial hedge contracts. We are an integrated energy company with more than 5500 megawatts (MW) of generating capacity. We are one of Australia's largest renewable generators, the third largest generator by capacity and the fourth largest retailer in the NEM through our award-winning retail energy companies - Red Energy and Lumo Energy.

As Australia looks to meet its climate change policy objectives a well designed NEG could align carbon abatement policy and energy policy and allow for the investment in generation required by the industry.

EXECUTIVE SUMMARY

Snowy Hydro believes the current market design and contracting arrangements will complement the NEG's ability to deliver new investment to lower emissions without compromising reliability and security. Our broader views on how the NEG could be implemented without adversely impacting on the factors underwriting the success of the NEM to date are as follows:

- A properly designed NEG would remove the need for further changes to the NEM such as the strategic reserve, day ahead market, and wholesale demand response mechanism.
- A strategic reserve is an unnecessary and economically inefficient. Adding a strategic reserve simply adds a layer of unnecessary cost.
- The rationale for a day ahead market needs to be clearly identified and assessed against alternative means of rectifying an identified problem with the current NEM design.
- The current reliability settings and standard are set at appropriate levels. In particular, the Market Price Cap is set at a level that provides incentives to invest, generate, and appropriately hedge.

- **Emissions Guarantee:**

- We support Australia's commitment under the Paris Agreement to reduce its emissions by 26 to 28 per cent below 2005 levels by 2030. Snowy 2.0 would help the NEM make this transition.
- The Emissions Guarantee (EG) in the early stages is unclear and complicated. The EG if not designed properly would likely fragment the contract market and make it less liquid and transparent which would be contrary to the Energy Security Board's (ESB) arguments.
- Limit the use of international offsets on the grounds of the quality of the source. Australia also needs to develop the capability to reduce emissions and not be reliant on international permits/offsets.
- Complex compliance and contracting obligations for both the emissions and reliability guarantee will impact consumer affordability.
- A compliance registry would be an unnecessary intrusion and become an administrative burden adding further costs.
- Snowy Hydro propose a light handed approach for Retailers to meet this EG requirement.

- **Reliability Guarantee:**

- Central to the Reliability Guarantee (RG) is the definition of "dispatchable". This definition must be based on the quality of the source to contribute to the reliability and security of the power system. Dispatchable should mean that the source is able to be centrally dispatched in the Spot market, its intentions are known to the Market Operator and Market Participants, it has the same obligations as scheduled generators in the NEM to follow dispatch, and it must act in good faith as per the relevant provisions in the National Electricity Rules.
- Wholesale demand management as a "dispatchable" source at the retail mass market level is opposed on both economic and social grounds. It is untested and a costly mechanism.
- The RG should not adversely impact the depth and liquidity of financial products.
- There needs to be more transparency and improvements into AEMO's demand forecasting processes and methodologies for the RG to work efficiently.
- The RG should apply to retailers, large customers or any other type of participant who purchases energy from the Spot market.
- Penalties for non-compliance with the RG should take away from the violating entity any economics benefits gained from non-compliance although not set too high to not incentivise participation.
- We propose an approach which uses a fungible instrument called a "dispatchable unit".

1 CONTEXT FOR THE GUARANTEE

The NEG is an important step towards achieving a practicable energy and carbon policy framework for the energy industry. Snowy Hydro welcomes the ESB's intent to retain the existing market design and contracting arrangements which will deliver new investment to lower emissions through the NEG without compromising reliability.

The consultation paper's approach to use the existing market design materialises at a time when the International Energy Agency (IEA) has backed the NEM. The independent review from the IEA has found that although policies and market rules need to evolve the NEM can remain effective. It highlights that the NEM has remained an effective platform to deliver the energy transformation. We agree with the IEA that the NEG *"cannot become a "silver-bullet" and its design should remain compatible with the NEM energy-only market, otherwise, it could create new barriers and windfall profits, if those elements are not considered¹."*

The NEM is going through transition and it is vital that risks are allocated to those best able to manage them. Where the decision-making powers of energy market bodies are enhanced, strong and clear accountability must be maintained. There is a need to integrate both energy and emissions policy but this integration must not perversely impact the success factors in the NEM to date, namely:

- Decentralised decision making;
- Liquid and deep contract market; and
- Stable regulatory frameworks.

2 EMISSIONS REQUIREMENT

Snowy Hydro's preference for the Emissions Guarantee is for a market based approach that provides economic incentives for achieving reductions in carbon emissions. Market based schemes provide flexibility that allows Participants to decide how best to meet policy targets. These market based schemes provide fungible trading instruments which allow financial and risk mitigation products to develop. Market based schemes would provide the most efficient and lowest cost solution to meeting the EG and hence the ESB should aim to adopt similar features to these market based schemes.

Snowy Hydro believes the design of the EG in the early stages is unclear and complicated. The absence of detail in the consultation paper makes it difficult to identify all implications. We advocate for a light handed approach to implementing the EG which does not require the complexity of a compliance registry as outlined in page 23 of the NEG consultation paper.

2.1 Contracting and Emissions

¹ International Energy Agency, 2018, "Australia 2018 Review", pp18

The contract markets will evolve and new products will form. Snowy Hydro agrees with the AEMC's Reliability Frameworks Review that the "*contract market plays a key part in signalling market expectations of future prices, providing incentives for new generators to enter the market to make up any shortfall between supply and demand in the long-term*"². We support the view that there is currently no evidence that the level of trading in the contract market should be cause for concern.

The EG obligation will be on retailers which may require financial contracts to record different characteristics of energy which will likely fragment the contract market and make it less liquid and transparent and therefore contrary to the ESB's objectives. There are likely to be more physical characteristics assigned to contracts demanded by the NEG which could lead to more red tape as the contracts themselves become less fungible and liquid.

The ESB methods on determining the emissions through the proposal of three types of contracts to achieve compliance with the EG have numerous uncertainties. Contracts that specify a generation source will likely be "*less fungible and less liquid than the more standardised contracts*"³ as noted by the ESB. These contracts will likely be beneficial for single plant generators and likely further reduce liquidity in the market. In the ASX Energy Market the NEM spot market electricity contracts only promise the delivery of a quantity at a certain date and do not specify the source of the generation or the generation firmness.

Contracts that specify emissions per MWh but not a generation source are likely to be complex for compliance and tracking emissions. If emissions are slightly higher or lower than stipulated in financial contracts, it is unclear how retailers will meet their emissions requirements.

The third ESB proposed approach is to have contracts that specify neither emissions per MWh nor a generation source. Deemed emissions could be assigned to these type of contracts. However, the deeming of contracts may create different categories of financial contracts ie. energy swaps, energy swaps with 0.6 emissions intensity for open cycle gas generators etc would fragment the contract market and inevitably lead to a reduction in both depth and liquidity.

It is important to differentiate energy and capacity contracts. Energy contracts are variations of swap type contracts. Capacity contracts are variations of Cap type contracts. Swaps and Caps serve very different purposes. Swaps cover the energy exposure of Retailers. Caps covers the Retailer for high prices typically greater than \$300/MWh. Swaps and variations of swaps (ie. load following swaps) would be the primary contracts used to assess compliance to the EG. In contrast, swaps and caps could be used to determine compliance with the Reliability Guarantee.

2.2 Compliance Options

We welcome the ESB's intention to provide flexibility for retailers to meet the EG which could reduce instances of non-compliance, and lower the costs of complying with the mechanism. Snowy Hydro support the following options proposed by the ESB:

² AEMC 2017, Reliability Frameworks Review, Interim Report, 19 December 2017, Sydney, pp16

³ Energy Security Board, 2018, "*National Energy Guarantee Draft Design Consultation Paper*", pp17

- Retailers being permitted to carry forward a portion of a previous year's overachievement, for use in the next compliance year. This would enable retailers to achieve compliance at lower cost.
- Deferring a portion of the emissions guarantee from one compliance year to the next which would provide retailers flexibility as to the timing of the activities they need to undertake to comply with the emissions guarantee without being in non-compliance in any one year.⁴

Snowy Hydro does not support a compliance registry maintained by the AER to assess retailers' compliance with the emissions guarantee. The compliance registry would be an unnecessary intrusion and become an administrative burden adding further costs. The complexity of bespoke financial bilateral contracts would add to the complexity of accurately recording these types of Contracts in the compliance registry.

As target emissions will be set over a certain period, ie 5 years and there are likely to be flexible compliance options, there is no need for compliance registry to match contracts with a power station's dispatch.

2.3 Reporting and Compliance - Snowy Hydro option

The purpose of the Emissions Guarantee (EG) is to provide incentives for Retailers to meet an average emissions per MWh (tCO₂-e/MWh) that would allow Australia to meet its international climate change commitment.

There is a consensus that the EG does not perversely affect the function of the existing Contracts and Forward electricity markets. The approach proposed in the NEG Consultation Paper, which relies on financial contracts to measure physical supply characteristics, is sub-optimal.

Instead Snowy Hydro advocates a light handed regime, ex post at the end of the financial year. Such an approach may be similar to the one outlined in the following:

1. Compliance to the EG is all done ex-post. The assumption is that compliance is done once a year shortly after the end of the financial year.
2. There is no need for a compliance registry to receive spot market settlement data, power plant emissions, and financial contract information.
3. Retailers would be allowed to provide contracts that specify a generation source, which allows the emissions per MWh to be directly determined. There needs to be a means to ensure the generation source is not double counted ie. an undertaking from the generator source, or a statutory declaration. Another alternative method could be the use of the reallocations process that allows two participants to swap generation between pool bills. Reallocations could in theory be used in similar way to handle emissions.
4. At the end of year financial year:

⁴ Energy Security Board, 2018, "National Energy Guarantee Draft Design Consultation Paper", pp19

- a. The target emissions intensity would be set by the Commonwealth government
 - b. Retailers would know the volume of their Spot market purchases
 - c. NGERs data would be available to determine the generation and emissions intensity for each generator. From step 3, the Retailer would deduct emissions from the specified generation source
 - d. Retailers would know their net remaining emissions intensity
5. From the NGERs data, Generators who:
 - a. Have not contracted their emissions (ie. Step 3) and their emission intensity was lower than the Spot average be able to offer an emissions instrument in an Auction
 - b. Retailers would be able to bid for the emissions instrument
 - c. This auction runs once only after the end of the financial year to allow Retailers and low emissions sources to match their requirements
 6. The default emissions level for unhedged load would be set at a level that incentivises compliance. This could be set at the emissions per MWh of the highest emitting plant operating in the NEM.
 7. The AER would receive from each Retailer a compliance report outlining the emissions intensity associated with the Retailers load. The AER may decide to undertake random audits of some Retailers to assess compliance to the Emissions Guarantee.

3 EMISSIONS REQUIREMENT: COMMONWEALTH GOVERNMENT DESIGN ELEMENTS

Snowy Hydro believes that coordination between governments through the NEG would mean that one overarching policy, and one overarching mechanism with the individual state and territory targets would be incorporated into the national target. The lack of a national, coordinated approach to climate and energy policy settings has created distortion in the market and an uncertain environment for investment in new generating capacity to meet the future needs of the NEM. It is important that State and Federal governments are working together to properly design the NEG and put in place a credible and coordinated emissions reduction policy, and implementation mechanism, which will provide increased certainty for investment in the electricity sector.

There is an important role for governments to play in setting stable policy frameworks, then letting markets work to deliver secure, reliable energy and consumer outcomes in response to consumer demands. Snowy Hydro support Australia's commitment under the Paris Agreement to reduce its emissions by 26 to 28 per cent below 2005 levels by 2030. The Commonwealth Government's proposal to initially set the electricity emissions target for ten years, from 2021-30 and to undertake regular five yearly reviews required under the Paris Agreement to ensure ongoing consistency with Australia's international commitments will further enhance investor certainty. We expect the emissions guarantee to start in 2020 and start replacing the Renewable Energy Target (RET) and the primary signal for investment in renewables and low emissions technology.

3.1 External Offsets

If offsets were allowed into the Emissions Guarantee, Snowy Hydro agree that the Commonwealth Government “*could place a limit on the volume of offsets that could be used for compliance with the emissions requirement across the NEM*”⁵. We recommend limiting the use of international offsets on the grounds that they are limited to high quality international offsets issued under the Paris Agreement to meet Australia’s emissions reduction goals. Limiting the use of international offsets would also aid Australian businesses to develop capabilities to reduce the emissions intensity of their products and services.

4 RELIABILITY REQUIREMENT

The appropriate definition of dispatchable energy will make the Reliability Guarantee (RG) clearer and allow the market to achieve the resources necessary for a secure and reliable operation of the power system. It is important that the RG builds on existing NEM and financial market arrangements that facilitate investment in capacity and as the ESB has appropriately noted that if a reliability gap has been identified that the “*market would be expected to react and start to invest in new capacity or offer additional existing capacity to the market.*” Snowy Hydro however is concerned in how accurate AEMO’s forecasts will be on the reliability gap over time.

4.1 Forecasting the Reliability Gap

The ESB noted that it is “*important that the inputs used in the forecast are transparent, and the methodology used to determine the forecast is clearly understood.*” Snowy Hydro however believes that there still needs to be more transparency into AEMO’s forecasting processes and methodologies. As the electricity system continues to transform it is likely that there could be increased errors in forecasting making it harder for participants to depend on these forecasts to make long term investment decisions. Market Participants want to further understand what AEMO intends to do to improve its demand forecasting accuracy.

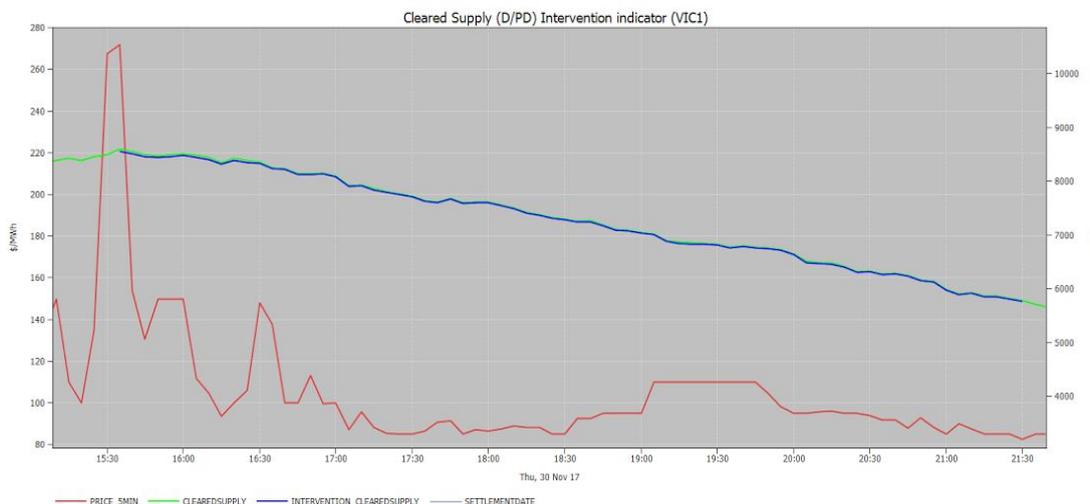
We welcome AEMO’s work in developing the MT PASA methodology to improve its assessment of potential reliability standard breaches over a two year horizon and replacing the existing deterministic methodology with a new method that can better capture the impacts of intermittent generation on supply adequacy. Snowy Hydro believes the MTPASA could be adapted for the purpose of establishing a reliability requirement by extending it to a forecast horizon of 3 years.

AEMO should be responsible for the accuracy of the market demand forecast and openingly consult with Market Participants to understand how their forecasts can be improved.

The need for better forecasting was displayed last year when the Reliability and Emergency Reserve Trader (RERT) was activated on the 30th of November 2017. On this day the RERT remained in place until 21:30 despite demand having dropped by close to 2,800 MW from the time the RERT was initiated. Figure 1 below shows graph of cleared supply and price indicating the demand levels the RERT was in place for on the 30th November 2017.

⁵ Energy Security Board, 2018, “National Energy Guarantee Draft Design Consultation Paper”, 21

Figure 1: Price Dispatch 5min (Intervention) – 30th of November⁶



4.2 Qualifying Instruments

Central to the Reliability Guarantee is the definition of dispatchable energy. This section outlines Snowy Hydro’s view on what qualifies as dispatchable energy and we introduce the concept of a “dispatchable unit” as a means to demonstrating compliance without adversely impacting the depth and liquidity in the Contracts market.

4.2.1 Definition of Dispatchable

The definition of dispatchable must be based on the quality of the source to contribute to the reliability and security of the power system. This definition must be based on the quality of the source to contribute to the reliability and security of the power system. Dispatchable should mean that the source is able to be centrally dispatched in the Spot market, its intentions are known to the Market Operator and Market Participants, it has the same obligations as scheduled generators in the NEM to follow dispatch, and it must act in good faith as per the relevant provisions in the National Electricity Rules. The source must also have a high level of reliability such that it can be relied on to start-up and supply energy when it is required. Snowy Hydro believe that the flexibility as a subset of dispatchability needs to be tested in the definition of dispatchability.

The ESB’s previous work on the NEG⁷ has highlighted that there needs to be a necessary level of flexible and dispatchable resources across the NEM. With the energy industry’s investment focus shifting to a combination of firm lower emissions gas generation, renewables and enabling technologies, more than 3,000 megawatts of firm generation exited the market in Australia over the last few years.

For an electricity system to work properly and contribute to reliability there needs to be sufficient dispatchable and flexible capacity. Snowy 2.0 was included in the NEG modelling scenarios as a core Government Policy and is expected to help provide both flexible and dispatchable generation.

⁶ Snowy Hydro analysis

⁷ Energy Security Board, 2017, “Advice – The National Energy Guarantee”, 20 November 2017.

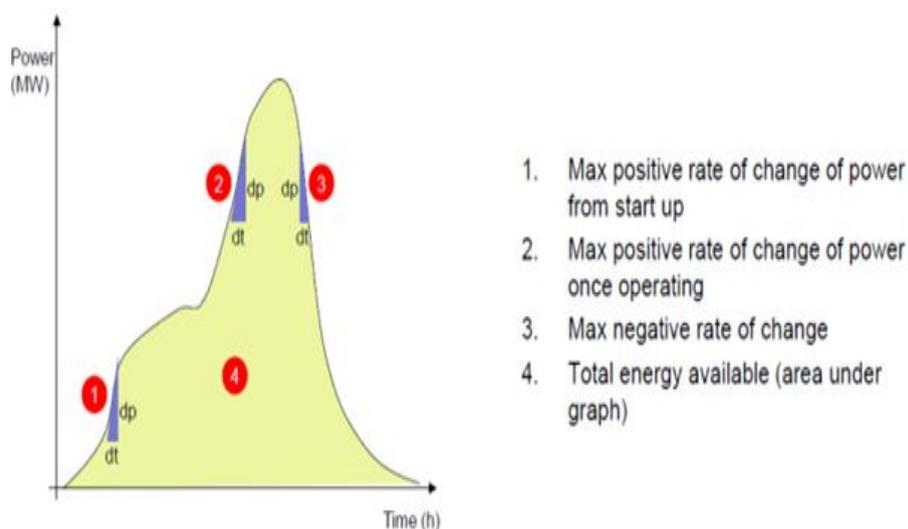
Snowy 2.0 would help the NEM transition to meeting Australia’s commitment to reduce emissions by 26 per cent to 28 percent of 2005 levels by 2030 and maintain reliability. The 2,000MW of additional, dispatchable, and flexible hydro generation would play a key enabling role to support the increase in penetration of intermittent generation such as wind, rooftop PVs, and large-scale solar. This additional hydro generation could provide ancillary services such as inertia and spinning reserve which are not available from asynchronous generation from wind and solar.

In understanding the definitions of dispatchability and flexibility, Snowy Hydro believe the following factors should also be looked at, such as:

- Predictability of the resource;
- Reliability to start-up and be available to supply a dispatchable service
- The capacity and duration of response over time
- Location of the resource; and
- The ability of the resource to match load.

It is important that the ESB construct an approach to understand flexibility as a subset of dispatchability. There is currently no measure to categorise whether a particular dispatchable generation source is flexible over sustained periods. The flexibility metrics could be considered for the system to understand how each source of generation could perform. The test for flexibility of dispatchable generation should not be confined to tests over a few hours rather the flexibility should also include tests over consecutive hot or cold days where demand is likely to be at the peak.

Figure 2: Flexibility metrics⁸



Depending on storage capacity, small pumped hydro storage can provide electricity supply for 8 hours and longer while also providing ancillary services to ensure stable operation of the electricity grid.⁹ The Snowy 2.0 project is a large storage project that can provide over 7

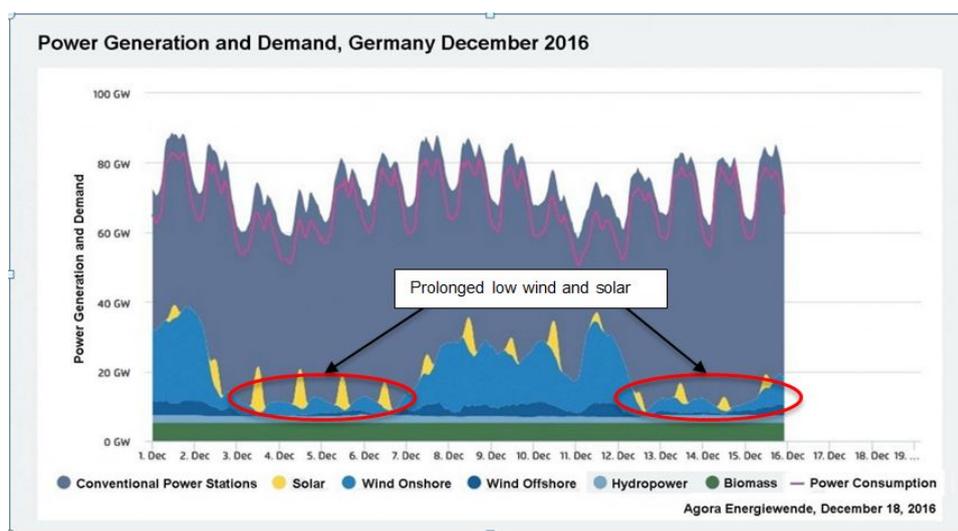
⁸ AEMC 2017, Reliability Frameworks Review, Interim Report, 19 December 2017, Sydney

⁹ KPMG, 2017, “Can Pumped Hydro and Solar thermal plants provide energy security?”

continuous days, 2000 MW of generation. When there is excess energy in the system the Snowy 2.0 can pump and store this energy for later usage.

Without adequate large scale storage the effectiveness of intermittent renewable energy would be greatly diminished thereby compromising energy affordability, emissions, and security and reliability objectives. Germany is one country that has experienced issues with the impact of prolonged wind and solar. In December 2016 a winter high-pressure system with dense fog throughout Germany left the wind and solar generation at extremely low levels for several weeks. Germany is much like the NEM which is undertaking an energy transition that has increased the generating capacity of intermittent energy. With approximately 20 percent of Germany's generation coming from wind and solar they were only able to generate less the 1% of the total generation mix during intervals in December.

Figure 3 - Prolonged multiple days/weeks solar and wind drought¹⁰



4.2.1.1 Demand Response being a Dispatchable Energy source

The ESB notes that it is important that “we have sufficient investment in dispatchable megawatts or demand response to meet peak demand.” Snowy Hydro understands that the emergence of new technologies has meant that the focus is not solely on ‘supply-side’ solutions although we do not believe that demand response is currently a dispatchable source at the retail mass market level for both economic and social reasons.

Demand response is an untested and costly mechanism. For instance, currently consumers contract with Retailers to ensure that they can consume electricity at a known price. Consumers are unlikely to be interested in being exposed to the spot price. The problem with retail mass market incorporation of demand response into an energy market is the challenge and costs associated with scheduling large numbers of small user loads which could comprise even 20% of the NEM peak system load. First, household users are self-interested and aim to minimize costs and increase their comfort levels, whereas the Aggregator of this service aims to decrease peak demand and minimizing the cost of electricity purchased in the wholesale market. The challenge lies in any type of coordination

¹⁰ Adapted from <http://energypost.eu/end-energiewende/>

scheme to aggregate these households into usable Demand Response resource that would align the objectives of the retail mass market users with the objectives of the NEM. The costs in coordinating very large number of end users and also incorporating various constraints of their loads needed to obtain system wide benefits would be high.

Currently there are no limitations to indicate a regulatory barrier to wholesale demand response. Evidence that there are no barriers to energy was shown in the AEMC commissioned Oakley Greenwood (OGW) report which provided quantitative evidence regarding the amount of demand-response capacity that is currently available in the NEM¹¹.

As the NEM generation mix becomes more variable and intermittent, it becomes more imperative for the NEM's central dispatch to capture the operational intent of Market Participants and improve the price discovery process for all Stakeholders to optimise their generation and consumption decisions. We therefore firmly believe that dispatchable should mean that the wholesale demand response source is able to be centrally dispatched in the Spot market and it must act in good faith as per the relevant provisions in the National Electricity Rules.

4.2.2 Dispatchable Unit

The purpose of the Reliability Guarantee is to provide an incentive to invest in dispatchable sources to meet peak demand. Hence it is an investment signal.

There is a consensus that the RG does not perversely affect the function of the existing Contracts and Forward electricity markets. The approach proposed in the NEG Consultation Paper, which relies on financial contracts to measure physical supply characteristics, is sub-optimal. Accordingly, we propose this alternative implementation.

1. Create a separate instrument "dispatchable unit".
2. Define the eligibility criteria for what constitutes a "dispatchable unit". This would be based on measurable attributes such as start-up reliability, at least 4 hours duration of continuous fully rated response etc. The AER would assess dispatchable generation sources against this eligibility criteria. This can be assessed as a yearly, and/or quarterly instrument.
3. There would be a registry (similar to the Large-scale Generation Certificate (LGC) registry) where eligible dispatchable sources would be able to create "dispatchable units".
4. The existence of a fungible "dispatchable unit" would allow a spot and forward market to be developed to allow Retailers various options to manage their RG obligation. This would promote liquidity and allow price discovery of an efficient price for the value of dispatchability.
5. Through the Registry, dispatchable Participants would be able to transfer dispatchable units to Retailers.

¹¹ Oakley Greenwood, 2016, "Current Status of DR in the NEM: Interviews with Electricity Retailers and DR Specialist Service Providers"

6. For any relevant year and/or quarter, the AER would be able to assess whether Retailers had sufficient dispatchable units against a forecast peak demand for the relevant period.

4.3 Allocating the Requirement

Snowy Hydro believes the reliability gap should be directly allocated to retailers to provide a clear signal to retailers who have insufficient contracts that they need to procure more thus incentivising them to address the gap. We do not support an alternative approach which would have AEMO intermediate new contracts via a “book-build” mechanism between retailers who want to procure new capacity and retailers/new entrants who want to sell new capacity. The market is more efficient if participants are able to enter into their own trades.

As outlined in section 4.2.2 a new instrument, dispatchable unit, would allow the AER to assign a target dispatchable unit requirement that corresponds to the Retailers share of forecast peak demand. The fungible dispatchable unit would allow trading to occur so there is a market for all Retailers to buy or sell dispatchable units to match their compliance obligations.

4.3.1 Allocating the requirement - Who is required to respond?

The reliability guarantee should apply to retailers as well as each large energy user registered as a Market Customer under the Rule. There should be no exemptions for large customers or any other type of participant with all loads treated equally. Large energy users account for a large proportion of energy supplied in the NEM and, as the ESB notes, “the reliability requirement could be materially affected if these large users are exempt from compliance”.

We welcome large energy users having similar obligations to retailers and agree with the ESB that if this was adopted that these *“customers would still have the flexibility to transfer this obligation to a retailer via contracts increasing opportunities for smaller retailers to participate in the market.”*¹²

4.4 Triggering the Requirement

Snowy Hydro understands that deciding the point in time in advance of the forecast reliability gap at which the reliability requirement is triggered and retailers are then required to respond involves a trade-off between the accuracy and completeness of information available at the point in time¹³. We propose the forecasting horizon is 3 years. The MTPASA process could be extended to 3 years to facilitate this recommendation. We support a trigger period of 2 years for retailers to meet a forecast reliability gap which will allow for more current and complete information. If retailers do not meet the requirement by the compliance date, the last resort function will be triggered by AEMO 1 year before the forecasted reliability gap. The trigger period allows AEMO’s response to be similar to the resources procured under

¹² Energy Security Board, 2018, “National Energy Guarantee Draft Design Consultation Paper”, pp41

¹³ Energy Security Board, 2017, “Advice – The National Energy Guarantee”, 20 November 2017, pp35

the previous long-notice RERT which we agree with the ESB is likely to be less distortionary

¹⁴

Penalties

Non-compliance with the reliability requirement will need to be discouraged through a financial penalty. The complexity however will be to determine the right penalty. To encourage compliance the ESB will need to assess penalties that take away from the violating entity any economics benefits gained from non-compliance although to not set the penalty too high to not incentivise participation. It is important the penalty levels are transparent.

If a Retailer is short of dispatchable units, a penalty for this shortfall (shortfall penalty) should be sufficiently high to incentivise Retailers to meet the RG:

- If there is a total aggregate shortfall in dispatchable units to meet the peak demand forecast, AEMO is the procurer of last resort. Retailers that were short of dispatchable units would be allocated the cost of AEMO's purchase of the balance of dispatchable units to satisfy forecast peak demand.
- All funds collected through the shortfall penalty would be returned to customers. For example, this could be done through a reduction in TUOS and/or DUOS charges.

5 CONSIDERATION OF OTHER KEY MARKET DESIGN CHANGES

Strategic Reserves and Day-Ahead-Markets

Snowy Hydro believes that an appropriately designed NEG would remove the need for further changes to the NEM such as the strategic reserve and day ahead market.

There are not sufficient issues with the current market design in the NEM such that the introduction of a day-ahead market is required. Many of the benefits of a day-ahead market are already addressed by the forward contract market that supports the NEM's real-time market.

Snowy Hydro supports the Australian Energy Market Commission's (AEMC) view that the introduction of a day-ahead market, and the related reforms necessary to implement it, would not necessarily be in the long-term interests of consumers¹⁵. This would come at a time when the day-ahead market has already comprehensively been evaluated prior to the commencement of the NEM and the decision was not to introduce a day-ahead and rely instead on financial hedges between parties.

Day-ahead markets are present in most major markets in North America and across most European markets. A key function however across these markets is the efficient coordination of electricity transactions with neighbouring power markets which is not relevant in the NEM.

¹⁴ Energy Security Board, 2017, "Advice – The National Energy Guarantee", 20 November 2017, pp43

¹⁵ AEMC 2017, Reliability Frameworks Review, Interim Report, 19 December 2017, Sydney, pp164

Snowy Hydro is concerned that the day-ahead market could also create new issues resulting in strategic capacity withholding or disorderly bidding.

Benefits of a day-ahead market are already addressed by the forward contract market that supports the NEM's real-time market. Market participants can already hedge pricing risk using financial derivatives under the current frameworks so any scheduling improvements from a day-ahead market would likely be limited. In addition Generators can structure their bids in the real-time market based on their costs, plant characteristics and contract position to ensure dispatch of their generation fleet to cover their contract positions. This provides some certainty over which plant will be running and for how long. If the expectation is that the proportion of fast-start plant in the NEM is going to increase to manage real-time volatility then market signals for slower-start generation may not likely be needed.

The implementation of the NEM's real-time market also delivers benefits similar to those of a day-ahead market. AEMO's pre-dispatch already signals expected market outcomes at a 30-minute resolution to the end of the next market day. The information in pre-dispatch means any scheduling improvement through the implementation of a day-ahead market may be limited.

Snowy Hydro does not support the need for a strategic reserve that is separate to the RERT. The RERT could benefit from improvements to reduce the complexity and associated cost of participating in the mechanism. If there was a separate strategic reserve formed then the cost associated with such reserves would be significant. In the recent Reliability Framework' Review the AEMC correctly noted that "*in considering the need for such a strategic reserve mechanism that is separate from the RERT, it is important to be clear about the problem*"¹⁶ which we believe has not properly be addressed.

The inclusion of a reliability requirement as part of the development of the NEG will negate the need for a separate strategic reserve. The reliability guarantee will oblige retailers to hold a minimum amount of contracts with dispatchable generators in relation to their own demand. The additional incentive and price signal for dispatchable synchronous plant which provides services such as synchronous inertia and system strength, would negate the need for a strategic reserve.

A strategic reserve is unnecessary and economically wasteful. It is not needed even without a Reliability Guarantee.

The impact of the NEG on affordability

The complex compliance and contracting obligations will likely impact energy prices. There are already expected complexities in Retailer business processes and IT systems for 5 minute settlement which will lead to additional costs. The NEG final design must complement other current regulatory processes such as 5 minute settlement, AEMC

¹⁶ AEMC, 2017, Reliability standard and settings review 2018

Reliability Framework Review, and ACCC pricing enquiry. Australia can make deep cuts in our greenhouse emissions with good policy design and avoid net adverse impacts on consumers.

CONCLUSION

Snowy Hydro's view is that a well-designed NEG would provide investment certainty in generation. There is an important role for governments to play in setting stable policy frameworks for the NEG, then letting markets work to deliver secure and reliable energy. The two elements of the NEG, the reliability guarantee and the emissions guarantee, would firm up intermittent renewables and reduce uncertainty around emissions reductions.

We recommend the establishment of a fungible instrument called a dispatchable unit which will allow Retailers the flexibility to meet Reliability Guarantee without adversely impacting on the depth and liquidity that currently exists in the Contract Markets.

For the Emissions Guarantee we recommend a light handed regime which would avoid the complexity and cost associated with a compliance registry.

Snowy Hydro has an important role to play in the present and future as we work towards achieving an affordable and reliable energy supply as Australia transitions to a low emissions future. We welcome the opportunity to continue to engage with the ESB.

Snowy Hydro appreciates the opportunity to participate in this consultation process. For further clarification on our submission, contact me on kevin.ly@snowyhydro.com.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'K Ly', with a horizontal line underneath.

Kevin Ly
Head of Wholesale Regulation