

9 June 2021

Energy Security Board
Level 26, 1 Bligh St
Sydney NSW 2000

By email: info@esb.org.au

Response to P2025 Market Design Options Paper

Snowy Hydro Limited welcomes the opportunity to comment on matters raised in the Energy Security Board's *Post 2025 Market Design Options Paper* (Options Paper).

Snowy Hydro commends the work the ESB has undertaken in the Post 2025 Market Design. The reform pathways for the development of immediate and long term reform provides some guidance on the timing for necessary reforms and has given more time to assess complex and potentially costly reforms.

The proposed immediate reforms on missing system services markets will form an important feature of the NEM. With more variable renewable energy (VRE) entering the market, and thermal sources exiting as they reach the end of their operational life, the ESB sensibly progressed the need for Essential System Services (ESS) markets. Snowy Hydro welcomes refining frequency control arrangements through market incentives in primary frequency control and a new market for fast frequency response.

The immediate need for an inertia market, however, has not been well understood by the ESB. While correctly identifying the value of a spot market for valuing and procuring inertia, the ESB has erred in proposing a longer timeframe to develop an inertia market, unnecessarily linked with a unit commitment for security (UCS) mechanism. The need for inertia will continue to increase as the generation mix changes. The market can not sit idle waiting for a UCS mechanism. Without the necessary ESS markets the NEM will be exposed to continued interventions to maintain system security, with consumers bearing the costs of those interventions.

Given the urgent issues facing the NEM as a result of the growth of variable renewable energy, it is important that the ESB focus on increasing flexible capacity and augmenting the transmission system at lowest cost. Snowy Hydro believes the most cost effective way to incentivise new capacity is by adjusting reliability settings. This will provide increased certainty of capacity revenues needed to sustain investment in firm assets.

The other pressing issue is transmission. We note that the ESB has developed 'actionable Integrated System Plan (ISP)' changes to help implement the priority network investments identified in the ISP. Snowy Hydro supports efforts to implement the ISP as soon as possible, in particular by considering changes to the RIT-T to take into account a broader set of market benefits. While it would, however, be perverse for the ESB to consider reforms which would slow the timing of new transmission through a generator usage charge and thereby discourage investment in renewables. Snowy Hydro already has over 1,000MW of dispatchable capacity which must remain idle during Victorian heatwaves because of a lack of transmission capacity. We look forward to working with the ESB on finding the most efficient and timely ways to augment transmission.

The 'initial' and 'next' reforms identified by the ESB are concerning, given the lack of detail provided and the potential impact on market participants. The proposals grouped in these categories do not provide any factual cost/benefit analysis, less than a month away from the ESB making final recommendations to the National Cabinet. The risks of getting the market design wrong could have significant consequences from the NEM. These proposals are likely to result in higher system costs and ultimately higher consumer bills. They can also undermine commercial

incentives to contract as an efficient way to manage risk, and incentives to invest and develop innovative new products and services. These reforms include:

- Transmission access reform, which introduces unnecessary complexity, undermines the contracts market and ultimately harms the efficiency of the NEM.
 - There is no evidence to suggest that Renewable Energy Zone (REZ) access reform in the medium-term will solve the problems noted by the ESB but rather create an unnecessary problem outside the REZ zones which requires full access reform. This will increase customer bills in the long-run.
 - Transmission access reform would impose enormous transitional costs. The ESB's favoured reform model would likely disrupt on-foot bilateral contracts for difference used to trade energy (ISDA Agreements), resulting in a forced renegotiation of nearly all existing wholesale energy supply contracts. The mere prospect of this change will reduce liquidity in the contracts market as participants seek to avoid the costs of disruption.
- A generator transmission use of system (Generator -TUOS) model, which would impose significant ongoing charges on generators for transmission infrastructure, discouraging investment in renewables and leading to increased costs over the long term.
- A Retailer Reliability Obligation with Physical Commitment which will pay inefficient generation to stay on longer and lead to higher costs for consumers as competition is diminished.
- A 'Scheduling Lite' proposal, designed to facilitate demand side participation in dispatch but without imposing adequate transparency or dispatch compliance obligations on demand side participants. This will complicate the ability of the market operator to balance demand and supply in real time and ultimately compromise the reliability of the NEM.

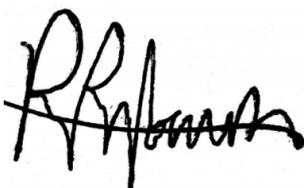
The ESB seemingly expects to evaluate and consider the submissions to this paper in less than a month before finalising a suite of recommendations for the National Cabinet. Snowy Hydro would expect that before any of the proposals are recommended, more information will be provided and a proper cost benefit analysis is undertaken to address the concerns raised by market participants.

About the Snowy Hydro Group

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 5,500 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.

Snowy Hydro appreciates the opportunity to respond to the Energy Security Board on the Post 2025 Market Design Options Paper. Any questions about this submission should be addressed to panos.priftakis@snowyhydro.com.au.

Yours sincerely,



Panos Priftakis
Head of Wholesale Regulation
Snowy Hydro

Resources Adequacy and Aging Thermal Generator Retirement	3
Resources Adequacy	3
Options for exploring modifications to the Retailer Reliability Obligation (RRO)	4
Physical RRO	4
Triggerless (no T-3 or T-1 trigger)	5
Aging Thermal Generator Retirement	6
Increased information around mothballing and seasonal shutdowns	6
Essential System Services, Scheduling and Ahead Mechanisms	7
Inertia Market	7
Operating Reserves/Ramping Reserves	8
Transmission and Access	8
Transmission investment	9
Medium-Term Access: Generator transmission use of system charges	10
Medium-Term Access: Alternative approach to assist management	11
Distributed Energy Resources and Demand Side Participation	11
Flexible Trading arrangements	12
Scheduling lite	13
Other issues	15
Assessment tool	15
Tariff reform	15
Technical standards	16

Resources Adequacy and Aging Thermal Generator Retirement

Resources Adequacy

Snowy Hydro agrees with the ESB that it should seek to encourage the timely entry of required generation and storage, and, further, that "market participants are best placed to manage their portfolio compositions over time and will make their own decisions about entry and exit" (p8). Regrettably, the solutions proposed by the ESB are inconsistent with this approach.

It is surprising, then, that the Options Paper contains very little analysis of how resource adequacy is designed to be maintained in the NEM. The NEM is an energy-only market. Maintaining an appropriate level of resources depends, in large part, on generators' ability to earn scarcity rents. The principal constraint on scarcity rents are the reliability settings which constrain generator earnings during periods of volatility - the market price cap (MPC) and cumulative price threshold (CPT). These settings have a flow-on effect to generators' ability to earn contract revenues which support the construction of new generation assets.

It is the possibility of exposure to high market prices, as much as the occurrence of them, which generates an efficient level of contracting demand from market customers and therefore an adequate level of capacity revenues for generators. The role of contract revenues means that the value of adjusting reliability settings in incentivising new investment cannot be determined simply by observing actual levels of market volatility. In other words, the fact that market conditions may

have been relatively benign does not suggest that adjusting reliability settings is not an efficient way to improve reliability.

If the ESB seeks to improve resource adequacy, these settings should be its first consideration. Although formally the responsibility of the Reliability Panel, the ESB must nevertheless investigate the relative merits of adjusting reliability settings: no responsible consideration of resource adequacy in the NEM can proceed without it. The Options Paper makes the barest mention of them, stating:

"The reliability settings provide an important price envelope to the real time market and are set to achieve the reliability standard to support efficient operational and generation decisions..."¹

This description grossly understates the importance of reliability settings. They are a critical component in incentivising the timely entry of new generation, precisely the question to which the ESB has addressed itself. It is incredible, then, that the Options paper contains almost no discussion of them, beyond referencing the Reliability Panel review to take place later this year.

A modest uplift to the MPC and CPT offers the prospect of improving energy security without any of the drawbacks of a complicated capacity mechanism such as an Enhanced RRO. It would not create a single new compliance obligation. It would not require a costly new administrative framework. In any event, the absence of any meaningful consideration by the ESB of adjusting reliability settings means that no such analysis can take place. The ESB evidently mistrusts the ability of the market to deliver energy security, and prefers a consumer-guaranteed capacity mechanism. It has not, however, even attempted to make the case why such a mechanism is superior to a market-based approach.

Options for exploring modifications to the Retailer Reliability Obligation (RRO)

The NEM has largely served the interests of energy users and consistently met its objective of reliable power, even through the clean energy transformation and periods of policy instability. Snowy Hydro has consistently argued that the existing market design can be relied upon to support reliability in the long-term. Reliability is achieved largely through the energy-only pricing signals, contracting and, as a last resort, AEMO intervention.

The financial RRO may have provided some assurance to governments and institutions that prudent contracting is occurring, however the RRO guidelines have not even been finalised so as to understand whether the benefits exceed the costs.

There is an unproven assumption that modifications to the RRO would not lead to an increase in costs and consumer prices. The physical RRO alone is a huge reform to the way energy is commercially transacted in the NEM. Removing a T-3 trigger will increase obligations on participants and increase these costs further. Snowy Hydro contends that improving contracting incentives through adjusting the reliability settings will be more efficient and cheaper than imposing a contracting requirement through regulatory fiat.

Physical RRO

The ESB's proposal to create physical certificates directly linked to physical resources is an introduction of a capacity mechanism into the NEM. This proposal would be a radical structural change for the industry, introducing an entirely new form of market exchange, shifting investment risks away from shareholders and onto consumers or taxpayers.

Capacity mechanisms like the Physical RRO are inefficient, secondary solutions. They fail to recognise the important role of market volatility in signalling the need for new investment.

¹ ESB, Post 2025 Market Design Options – A paper for consultation Part A, pp32

Reforming market settings would achieve a better outcome at lower cost. This reform is being pushed by the ESB to keep legacy plant viable rather than to incentivise more dispatchable generation into the NEM.

The ESB notes that the physical RRO can replace the current market signals for reliability investment.² Snowy Hydro is concerned by this statement. It is clear that a physical RRO would result in a less dynamic NEM and higher costs for consumers, as the level of capacity investment is increasingly centrally-determined, rather than being driven by market outcomes. It is also inconsistent with the ESB's own stated position, ie. that market participants are best placed to manage their portfolio compositions. Furthermore, there already exists a market for capacity products; replacing this with a centrally-administered mechanism won't be an effective means for addressing capacity shortfalls in the NEM. It will simply increase costs for participants and, ultimately, consumers.

If the NEM has a capacity incentive problem, insofar as investment signals do not currently provide sufficient incentives for the development of firm generation, then the appropriate policy response is to adjust the reliability settings which directly influence the level of capacity investment; the MPC and CPT. Adjusting these settings is the simplest approach to incentivising investment. It would promote a competitive, dynamic marketplace where risk is managed by those best placed to manage it, at least cost. It should eschew the Physical RRO, which is expensive, logistically cumbersome.

The current Financial RRO was intended to encourage participation into the ASX futures market, promoting a higher level of enduring contracting by retailers. The concern however with the Physical RRO is that should it be combined with a financial RRO it could likely discourage participation in the ASX futures market. This could reduce wholesale contract market liquidity and result in market participants deviating from their optimal risk management strategies, which would have cost implications for consumers. It would also disadvantage non-vertically integrated retailers, potentially impeding their ability to compete for C&I customer demand. These factors were a key driver for not requiring physical backing of eligible contracts under the existing RRO framework.

Other concerns with the Physical RRO which the ESB needs to address include:

- A capacity mechanism moving towards the 'central controller' model, which the NEM was designed to overcome. This assumes Australian Energy Market Operator (AEMO) and the Australian Energy Regulator (AER) can better forecast and manage investment decisions than developers with money at risk.
- Non-vertically integrated retailers/small retailers will suffer the most as they won't readily have contracts backed by assets.
- Inefficient plant are paid to stay idle and prolong their useful lives through capacity payments. This will not improve confidence that resources will enter the market, rather it will over-pay for resources.
- C&I load is highly variable, as these customers tend to enter relatively short-term contracting arrangements with retailers and churn regularly. There is also uncertainty around the longevity of major industrial loads and the outlook for grid demand more broadly. It will therefore be challenging and impractical for retailers to enter into longer-term financial contracts or directly underwrite investment in long-lived generation assets to support C&I load.

The ESB's modifications to accommodate stakeholder concerns could lead to unintended consequences and worsen consumer outcomes. The proposed exemptions are concerning. Large customers should be counted toward the entire reliability gap, rather than being able to opt-in for particular reliability gap periods, increasing market participant confidence in the RRO. Similarly, it is inequitable and distortionary to exempt some classes of retailers.

² ESB, Post 2025 Market Design Options – A paper for consultation Part A, pp24

Triggerless (no T-3 or T-1 trigger)

When assessing the triggerless option the ESB has not considered the trade-off that exists with a triggerless RRO which results in significant compliance costs across the whole industry with little incentives for new dispatchable investment.

Snowy Hydro provided robust, detailed feedback on the design consultation for the RRO structured around a 3 year trigger period to meet a forecast reliability gap. The AER guidelines for the RRO were then drafted, without being finalised, giving no time for market participants to understand the impact of the new market mechanism imposed on the existing market to avoid any unintended consequences. It is therefore concerning that the ESB is proposing to change the mechanism yet again without even allowing the RRO to run for a full 3 years. This regulatory uncertainty only delays future investment in the NEM.

The current RRO should therefore remain the default, unless there are demonstrably more efficient options, which have not been proven as yet. For that reason we do not believe that the ESB's developed alternative options for activating the reliability obligation are required.

The removal of T-3 determination, leaving only a T-1 timeframe would not provide sufficient confidence or time for market participants to respond. The T-3 time frame allows the market participant to have confidence in meeting the reliability standard, should there be a gap, and allows sufficient time to respond providing confidence in the market. New generation can take several years to build, so investment decisions must be timely to meet changes in demand and supply.

The RRO was never intended to remove all possibilities of shortfall and the NEM, even as part of the Post 2025 market design work, will still have some forms of intervention mechanisms to address any potential shortfalls in supply. These include the Short Notice and Medium Notice Reliability and Emergency Reserve Trader (RERT), Instructions, Directions, and Mandatory Restrictions. To the extent that these mechanisms can be used to address a reliability or system security issue the ESB will need to demonstrate how the RRO will remove these interventions.

Should the ESB consider the triggerless approach, the Market Liquidity Obligation (MLO) would need to be assessed. A triggerless MLO would not physically increase supply and ensure the reliability of the NEM; rather it would become an unnecessary obligation on generators in the market.

Aging Thermal Generator Retirement

Increased information around mothballing and seasonal shutdowns

The ESB notes that *"any action to manage the orderly exit of a large, retiring thermal generator requires accurate information made available in a timely manner"*³, highlighting that the existing information processes may not be fit for purpose for the future, given they were created without managing exits in mind.

The ESB's proposal to re-assess the MT PASA, noting it may not be granular enough to allow for a sufficient understanding of a generator's unavailability, has not considered the *recent Improving transparency and extending duration of MT PASA*⁴ review which the AEMC recently completed. In the Draft rule determination, the AEMC accepted that scheduled generating unit availability information may be commercially sensitive and acknowledged concerns associated with the

³ ESB, Post 2025 Market Design Options – A paper for consultation Part A, pp28

⁴ AEMC, Improving transparency and extending duration of MT PASA, <<
<https://www.aemc.gov.au/rule-changes/improving-transparency-and-extending-duration-mt-pasa> >>

publication of this information and the advantages it gives to participants who are not subject to the same MTPASA obligations (not just the visible cost to release this information publicly).

We also believe that the current level of information disclosure of generator availability is sufficient for participants to make informed decisions as to how they will operate in the NEM. If AEMO would like more information about a particular generator outage, for example, then they are able to request that information from market participants. Furthermore the additional layer of mandatory reporting/data collection of more granular information would be onerous to businesses and add further costs, when the benefit has not been well articulated.

The proposed changes by the ESB would have implications not only for ageing thermal plant but all generators in the NEM. It therefore needs to be properly assessed against what the market already provides through the MT PASA. The ESB has not done that through the Options Paper.

Essential System Services, Scheduling and Ahead Mechanisms

Snowy Hydro welcomes the work undertaken by the ESB to specify and value essential system services so that they are efficiently procured through market-based procurement, where possible. Throughout the process AEMO have requested the necessary tools needed to commit to ahead ancillary services transactions however at no stage have AEMO clarified why they need any new mechanisms, Unit Commitment, or new powers which are not already available under the current market conditions.

The ESB notes *“the unit commitment for security (UCS) is a mechanism where AEMO, can schedule resources contracted through structured procurement ahead of time to keep the system secure when dispatch and real-time do not”*⁵ without highlighting that many of the benefits of unit commitment are already addressed by the forward contract market that supports the NEM's real-time market. In not highlighting these existing benefits the ESB have demonstrated that this UCS mechanism has not been well understood and that it will only impose unnecessary costs and risks on market participants without corresponding benefits.

Market Participants can already hedge pricing risk using sophisticated financial derivatives under the current framework so any scheduling improvements from a UCS mechanism would be limited. Should the market operator have concerns with transparency and predictability then the focus should be directly on improving scheduling. The UCS contemplated by the ESB would impose unnecessary costs and risks on market participants, both in terms of one-off implementation costs and ongoing monitoring, trading and compliance obligations through UCS and voluntary financial ahead markets.

Inertia Market

The need for structured procurement of ESS does not imply a need for a unit commitment for security; they should not be bundled together as a single reform. Snowy Hydro is therefore concerned that the ESB has sequenced an unnecessary UCS mechanism before the development of an inertia market, which ought to be a priority reform.

The ESB correctly identified a spot market approach for valuing and procuring inertia, however should this take a longer period of time to develop then the ESB should actively be working on ways to value inertia and not wait for a UCS mechanism. The need for inertia will continue to increase as the generation mix continues to change. As is now well understood, the retirement of thermal generation and increase in inverter-based generating systems has reduced inertia. The main issue now is that the current categorisations of the services are not always fit for purpose, particularly in potential islanding areas where there can be large amounts of variable renewable energy (VRE) generation and low inertia. With increasing levels of inverter-based generation, the

⁵ ESB, Post 2025 Market Design Options – A paper for consultation Part A, pp47

inertia of some subsystems like North Queensland, Tasmania and South Australia are already low at times of high VRE generation. This will worsen in the future. As inertia reduces, frequency control becomes more challenging as there is less time available to address imbalances in supply and demand. An inertia market is therefore required to ensure that the current NEM energy-only design delivers ongoing security and reliability of supply as the energy transition continues.

The effectiveness of an inertia market will depend on its ability to provide adequate incentives for the provision of the service. Snowy Hydro understands the difficulty in integrating an inertia price within the energy market price, however we believe further assessment can be undertaken in an inertia spot market like the FCAS market, where generators and synchronous condensers are co-optimised. An inertia market is an immediate reform and not a next reform. We suggest the ESB re-consider their timing approach to an inertia market.

Operating Reserves/Ramping Reserves

Snowy Hydro believes the consideration of whether operating reserves have the potential to provide a positive externality for resource adequacy, should be left with the AEMC and the Reliability Panel (the Panel). We continue to support the need to adjust reliability settings as the most efficient and the least-cost approach to improving system security, however providing a market price signal for Operating Reserves would be preferable to AEMO interventions.

The AEMC's draft determination on the Operating Reserve market and Introduction of ramping services rule changes should lead the discussion on whether there is a need for these markets.

The ESB has correctly noted that Stakeholders, including Snowy Hydro have expressed views on whether the benefits would outweigh the expected costs. While the benefits are around costs associated with intervention or direction being minimised, the ESB need to consider the costs and implications of including operating reserves which include:

- giving careful consideration as to how this proposal would impact the contracts market. This is particularly important given the importance of financial contracts in underpinning new investment.
- Creating an additional reserves market is likely to complicate the contracting process, with a potential splintering of the market reducing liquidity.
- AEMC noted that *"It would appear logical that the increased complexity of the system through the transition could give rise to new and unknown risks. While there may be benefits in additional reserves being available to deal with such risks, there will be costs involved in providing additional reserves."*⁶
- *Signals for long term investment signals for example could be impacted as operating reserves could be seen as another revenue stream for existing dispatchable resources that would otherwise retire or be mothballed.*
- These options would not directly facilitate new investment.
- With AEMO being responsible for determining target quantities to be procured through the operating reserve, the market could face a scenario where AEMO continues to use RERT and directions in addition to the operating reserve, costing consumers more than what previously was intended.

Transmission and Access

Snowy Hydro is disappointed with the ESB's apparent resolve to implement access reform, and its claim that it needs to do so for the benefit of investors in renewable energy.⁷ It is remarkable that the ESB should assert this justification when the majority of renewable energy developers overwhelmingly resist the reforms.

⁶ AEMC, Reserve Services in the National Electricity Market, Directions Paper, 5 January 2021, pp33

⁷ Options Paper, Part A, p80

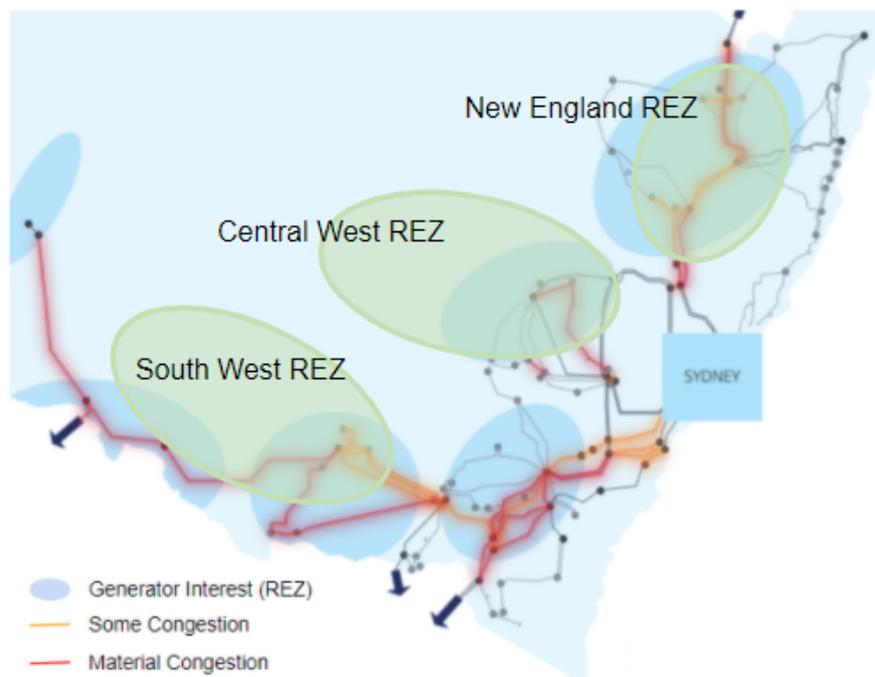
Although the ESB has presented a number of access reform 'options', it is clear that it favours, in the long term, the introduction of locational marginal pricing and financial transmission rights. In substance, this is the same as the Coordination of Generation and Transmission Investment reform (COGATI) previously proposed by the AEMC and which was widely rejected by most stakeholders. It is disingenuous for the ESB to propose this reform when it has not adequately addressed the critique in the more than 30 submissions provided in the COGATI process. We note that the ESB has provided no modelling whatsoever to support its options, and appears to believe this should be done only after a model has been agreed upon.

Transmission investment

The fundamental problem in the NEM is a lack of transmission capacity, and this will be more effectively resolved with an Actionable ISP. Transmission congestion and a lack of network investment are central to the current difficulties being experienced in the NEM. The ESB correctly highlights that *"substantial transmission investment will be needed to accommodate the forecast 26-50 GW of new large scale variable renewable energy expected by 2040"*. Congestion has caused a slowdown in investment in new renewable and firming capacity, increasing prices and grid instability.

Increasing transmission capacity should be prioritised in the reform process and this is best achieved by an actionable ISP with committed timelines and funding. While there will always be some congestion in the NEM, the current problems cannot be solved by access form. More transmission capacity must be built. Until transmission is built the cheapest renewable energy will be unavailable to consumers. Figure 1 below highlights the problem NSW is facing with congestion; there is already no spare transmission capacity available for renewables. There are currently more than 6,000MW of applications for new renewable generation, but this capacity is unable to be developed until transmission infrastructure is upgraded.

Figure 1: NEM Congestion in Regional Areas (REZs)⁸



Snowy Hydro has therefore strongly supported an Actionable Integrated System Plan (ISP), which, together with existing locational signals, obviates the need for access reform. The ISP displaces, rather than complements access reform. The renewable energy industry has almost unanimously

⁸ Snowy analysis

adopted a similar position. The actionable ISP sets out proposed augmentations of the transmission system to support connection of the capacity that is projected to occur. The Options Paper mentions improvements to the ISP which Snowy Hydro agrees with, noting:

“Governments also may value a range of benefits that are not currently captured by either the ISP or the RIT-T. These benefits may include boosting local economies or delivering additional employment opportunities in rural communities. These wider economic benefits could be captured in a broader cost-benefit test for actionable ISP projects to guide the respective contributions of tax-payers and electricity consumers.”

The traditional RIT-T process is too narrow in assessing potential benefits for Actionable ISP projects. For these Projects (which again have been identified by AEMO as being part of the optimal development path for the NEM) a "whole-of-system" benefits approach needs to be adopted in order to capture the full benefits of the type of long-term, strategic projects identified by AEMO as Actionable ISP Projects. The whole of system benefits that should be part of the assessment for Actionable ISP Projects should include long term risk management, energy security which includes avoided intervention and long term competition benefits

Transmission upgrades will accelerate the integration of renewables and large scale storage into the grid, both of which are good both for consumers and Snowy Hydro. The Actionable ISP can clearly address most of the problems transmission access reform is attempting to solve, shown below. This includes removing congestion, solving Marginal Loss Factor (MLF) issues, connecting Renewable Energy Zones (REZ) and improving system strength. Implementing transmission access reform at a time when the ISP will solve the exact same problems will only increase costs for consumers.

Medium-Term Access: Generator transmission use of system charges

Of the ESB's medium-term access options the most concerning is the Generator transmission use of system charges (G-TUOS). The G-TUOS model, which would charge generators an ongoing charge for transmission infrastructure, risks making renewables expensive and discouraging investment, leading to increased costs over the long term for the market.

The G-TUOS proposal, while creating significant costs and risks for the market, does little to answer the problems on medium-term access the ESB is seeking to solve. The ESB has itself highlighted that the proposal would do little to alleviate congestion while generators will continue to bear volume risk and have no direct congestion risk mitigation tools for operational timeframes. We therefore agree with the ESB's concerns with this proposal.

Table 1: Assessment of medium-term access options⁹

4 Generator TUOS	Provides some locational price signals to generators. Relies on administratively process to accurately forecast the forward cost of congestion, and generators being able to predict the administratively determined charges.	No change to market design in operational timeframes.	Difficult to create locational signals because storage can either alleviate or worsen congestion depending on whether it is charging or discharging. No change to market design in operational timeframes.	Generators continue to bear volume risk and have no direct congestion risk mitigation tools for operational timeframes. The resetting of Generator -TUOS charges on an administrative basis represents a risk to generators (similar to MLFs).
------------------	--	---	---	---

Snowy Hydro believes that a scheduled resource that can be constrained off should not be required to pay TUOS charges. The current cost recovery regime for prescribed and common transmission services (collectively, TUOS) was put in place on the basis that application of sunk costs to consumers is unlikely to impact consumption and utilisation of the network whereas the same charge applied to upstream market participants would distort efficient energy consumption and dispatch. Upstream market participants include all entities engaged in the wholesale electricity market.

⁹ ESB, Post 2025 Market Design Options – A paper for consultation Part A, pp87

Imposing TUOS charges to renewable generators will likely distort regional spot prices and give economically incorrect signals to market participants. Snowy Hydro argues that the likely result of requiring renewable generators to pay for the sunk network would be to distort the uptake of renewable investment. The distortionary impact of TUOS costs imposed would be passed through to customers via higher spot prices. Hence the recovery of sunk network costs from renewable generators can potentially lead to distortions in investment/retirement decisions and generation dispatch. The recovery of these TUOS costs from end use customers was found to least distort decisions with respect to network use. It also reflects the fact that only consumers are net contributors to the cost of electricity supply: applying TUOS to generators does not ultimately relieve customers from those costs, it merely distorts how they are collected.

Given that storage and generators are not end users of electricity, and are connected to the network primarily for the purposes of providing flexibility and energy services, there is no rationale for them to contribute to both the generator connection costs and shared network TUOS charges.

We also note that all of the proposals in the Options Paper would cause significant disruption to existing over-the-counter energy contracts, the most important tool for trading energy in the NEM. Under the ISDA contract framework, changing the common reference price which is received by counterparties and exchanged under electricity swaps and caps would almost certainly constitute a Market Disruption Event for the purposes of the 2005 ISDA Commodity Definitions. This would be the case even where, as in the 'Congestion Management Model', generators are designed to be made whole against the regional reference price: the implementation of the model would effectively change the calculation of the regional reference price. This would lead to these contracts being renegotiated and possibly terminated, depending on the agreed Disruption Fallbacks. There would be a significant likelihood of disputes as not all parties will be able to renegotiate terms, with flow-on effects to financing arrangements. Uncertainty associated with the change will dissuade parties entering contracts even before the change is implemented.

Medium-Term Access: Alternative approach to assist management

If there are concerns regarding medium-term congestion management, and there is a need for reforms to ensure that technologies are able to be remunerated for alleviating transmission congestion, then Snowy Hydro has a simple solution for dispatchable energy.

The influx of renewables in the NEM is increasing congestion in the transmission network. Although transmission investment will solve this to an extent, the competition for transmission access is creating risk for existing and future dispatchable generation, as it reduces the firmness of their dispatch when prices are very high. It thereby increases the cost of dispatchable generators offering firm contracts to energy users. The ESB notes that congestion is a permanent feature of a high VRE power system, which increases the importance of such contracts. Snowy Hydro believes that the ESB should therefore consider changes to the form of the market price floor.

Snowy Hydro's simple solution to reduce this transmission access risk for dispatchable generation is to lift the bid price floor of semi-scheduled generation and (ideally also) lower the bid price floor of scheduled generation. This change will benefit the market as a whole as it offers more certain capacity revenue to dispatchable generation, increases the 'price signal' for capacity investment, lowers contract costs to retailers and hence electricity costs for consumers, facilitates the dispatchable generation that future renewable generation relies upon for firming, which enables the evolution of the NEM to a decarbonised and renewables dominated energy supply. Snowy Hydro would be happy to provide more details on this proposal.

Distributed Energy Resources and Demand Side Participation

Snowy Hydro acknowledges the ESB's efforts to implement iterative but systematic and nationally

consistent solutions to emerging challenges in the DER and DSP parts of the energy supply chain. This is preferable to ad hoc, jurisdictional responses that address some immediate problems but do not always account for operational considerations, or consumers' needs and preferences. The SA Smarter Homes initiative is one such example.

The proposed Maturity Plan is also a reasonable approach to considering potential reforms, but it must draw on established governance processes. The ESB is aware of the broad range of recent and forthcoming regulatory initiatives, many of which can achieve much of what the ESB is trying to promote and are, in general, being developed through the standard rule change process.

Examples are the Wholesale Demand Response Mechanism, 5 minute settlement, revised switching rules, AEMC review of metering and its assessment of rule changes relating to the integration of DER into distribution networks, cost reflective pricing for DER, network planning processes, and a review of the RIT-D. This demonstrates that significant reform can occur in an iterative and considered manner under the current framework. The fundamental changes to the NEM that the ESB is proposing must go through these established channels to allow full cost / benefit analysis, and for industry and other stakeholders to have sufficient time to consider what is being proposed.

We also note that many of the benefits that the ESB is trying to generate are possible through current arrangements. This might require minor amendments to existing rules or they could become more apparent over time in line with technological developments. For example, the most significant consumer benefit of demand side participation is the ability to avoid higher prices through flexibility and this can be easily achieved in a contract with a traditional retailer. Demand side participation may not yet be occurring on a scale that some stakeholders would like to see. However, it will become far more accessible to smaller customers over time as the cost of smart meters and appliances declines and as more diverse retail offerings emerge in response.

Our concern is that any premature action to direct the industry in a particular direction through a top down approach could undermine incentives for market participants to develop competitive solutions and / or enter into mutually beneficial contracts for services. The ESB should continue to rely on competition as a principle underpinning any reform initiative. This is the mechanism for encouraging innovation that delivers efficient and customer focused solutions to emerging problems. This is relevant across all elements of the supply chain.

Competitive neutrality - in terms of applying common obligations on all market participants, regardless of fuel or business model, for example - must be a core element of future reform measures. This will encourage efficient investment in generation, demand response capabilities and infrastructure across the energy supply chain. As such, we are concerned about some of the specific measures the ESB is proposing and we recommend more detailed analysis of proposals for flexible trading arrangements and scheduling lite in particular, to fully understand their broader impact. We see considerable risks in some of the options, which have the potential to disadvantage specific business models relatively to others.

At the distribution network level, the ESB should also continue to rely on the competitive market to deliver innovative solutions to alleviating congestion and system support. The Australian Energy Regulator has considered numerous waivers from its ring-fencing guidelines in recent years while networks continue to argue the case for integration. However, competitive markets will always deliver more efficient and customer focused solutions than that provided by a regulated monopolist.

Current rule change processes (e.g. relating to the integration of distributed energy resources) and the Post 2025 market design process provide an opportunity for a more comprehensive reform of network planning and the RIT-D. Rather than relying on piecemeal measures, such as small scale incentive schemes for regulated monopolists to consider non-network solutions for managing demand, a future framework should maintain the clear separation between monopoly network services and the competitive market.

Flexible Trading arrangements

The potential benefits of creating a framework for more flexible trading arrangements must be assessed against the likely costs and risks. As a general point, both models that the ESB proposes will substantially increase the unpredictability and reduce retailers' visibility of retail load for many service providers (traditional retailers and others). A retailer's primary function is to manage risk on its customers' behalf but flexible trading arrangements undermine its ability to do so and increase these risks - and therefore, the costs - of managing that volatility. This will flow through to retail prices, making them higher than what they otherwise would be, while transferring market risk - at least in part - to end consumers.

Recent events in Texas, where a spot pass through is a common tariff structure and consumers can readily switch between retailers within a short period of time, exposed end consumers to wholesale market prices as high as \$9,000/ MWh. Similar outcomes would be possible under the ESB's proposals. There are some very large consumers who have both the incentive and ability to respond to sharper price signals and this is already occurring. Despite the claims of some stakeholders, we expect very few smaller consumers will be willing to do this for some time and the ESB should adopt a more cautious and iterative approach. We caution the ESB against making substantial changes to current arrangements that are costly and will generate significant market risks in the short term. The ESB cannot yet be certain that any form of flexible trading arrangements will create a net benefit for consumers.

In terms of the specific models that the ESB proposes, we agree that option 1 is a more practical and feasible option that will create the fewest risks. In contrast, option 2 could only proceed following a more detailed process of impact assessment, cost benefit analysis of this and other options, and extensive stakeholder consultation. As the ESB notes, there are many unanswered questions about how it could work in practice given the scale of the change.

Both options raise the issue of the allocation of core consumer protections between competing parties. Energy is regulated as an essential service and there are strict controls around disconnection and interruptions and these must apply to all participants who have the ability to influence energy supply. Other practical challenges relate to the administration of other support measures, such as hardship management, concessions, and life support.

Complaint handling is another important issue to resolve. Ombudsman schemes would need to be revised to incorporate all trader-services participants, and ensure complaints and costs are allocated to the appropriate party. This is a challenge that energy ombudsman schemes are facing as they expand to include exempt sellers following recent policy changes.

The ESB must not underestimate the challenges in developing a competitive neutral and effective consumer protection framework where there are multiple service providers involved. There is considerable risk of eroding some of those core protections and / or the potential for some business models to bear a disproportionate cost of regulatory obligations or reduced ability to manage commercial risks. At this stage, it is difficult to see how option 2 will function in practice, noting the many issues that the ESB identifies in Part B of its Options paper. The ESB will need to account for these issues but also the impact on established systems and procedures for current service providers, and the supporting market infrastructure.

Scheduling lite

This proposal has the potential to undermine the orderly operation of the wholesale and energy services markets, increasing the cost of system management. At a time when the system is becoming more volatile, we see considerable risk in diluting the information available to AEMO about demand and supply conditions or reducing the incentives for some market participants to strictly comply with established market procedures. There are already inadequate transparency requirements for non-scheduled customers, who are not required to notify the market of their intentions or bid into the market, and this proposal risks exacerbating the problem. Sudden

changes in demand, even for scheduled load, can destabilise the grid, as occurs when aluminium potlines are turned off in response to market volatility.

Reducing the exposure of some participants to regulatory and other costs (e.g. RERT, FCAS) increases the costs that must be recovered from other participants, even in situations where the former are contributing to those costs. For example, AEMO may need to be more active in the market to accommodate inflexible generation and / or unpredictable demand response over which it has reduced visibility. Individual aggregators or larger customers who want to participate in wholesale and energy services markets are relatively small individually but their cumulative impact is significant, which the ESB acknowledges in its characterisation of household solar as the largest generator in the NEM (albeit dispersed across the country) and the potential scale of demand response.

We have previously stated that without an efficient price discovery process there would be market and operational inefficiencies, from reduced confidence in pre-dispatch prices, inaccurate reserve forecasting and procurement by AEMO, reduced ability for AEMO to manage the central dispatch process and inefficiencies in pricing of financial contracts. This is reflected in our support for the proposal to lower the default threshold for being classified as non-scheduled from 30 MW to 5 MW nameplate capacity leading to new generators above 5 MW nameplate capacity being classified as scheduled or semi-scheduled, unless an exemption is granted by AEMO. This logic applies equally to the demand and supply side.

We also note recent comments by the AEMC Reliability Panel about the importance of accuracy of supply and demand forecasts:

*'The Panel considers that improving the ability to accurately forecast supply and demand should be a key area of focus and will play an increasingly important role in the management of reliability in the power system. As the generation mix continues to incorporate higher penetrations of variable generation capacity, the ability to manage the increasing variability across the day will be important, so that any shortfalls in supply can be addressed in a timely manner. In addition to this short-term forecasting, the Panel considers that the ability to plan and account for unexpected and extreme events in the future should be an area of continued focus, given the impact that these events had on the operation of the power system over the reporting period'*¹⁰

We also note AEMO's comments about the importance of operational visibility as demand response capability grows in its Knowledge Sharing Report #3 for its VPP Demonstrations:

As VPPs continue to grow, the current market conditions and incentives may result in very volatile behaviour. At scale and without adequate visibility, forecasting and dispatchability ahead of time, such resources may adversely impact AEMO's ability to maintain power system security and reliability:

- *AEMO's ability to provide accurate central forecasts will degrade, reducing the reliability of signals to the market for unit commitment decisions and power system planning.*
- *Large ramps or swings in output may result in power swings on the network, potentially jeopardising power system security and AEMO's ability to dispatch the market.*¹¹

AEMO also states that scheduling in central dispatch is a 'likely progression' for VPPs when these portfolios reach a material capacity in a region.

Within this context and as the market moves to 5 minute settlement, we do not support measures that would reduce the visibility of the activities of some market participants or diminish the

¹⁰ Reliability Panel, 2020 Annual Market Performance Review, Final report, 20 May 2021, page 98

¹¹ Australian Energy Market Operator (2021), AEMO Virtual Power Plant Demonstrations: Knowledge Sharing Report #3, February 2021

consequences of non-compliance.

Concerns about the administrative burden of bidding and dispatch obligations, telemetry requirements and other requirements for participation in wholesale and energy services markets, such as their impact on market participation, should be addressed through a broader review that evaluates the administrative impact on all market participants. This would avoid the risks that Scheduling Lite will create.

Other issues

Assessment tool

The proposed assessment tool introduces an additional layer of complexity and uncertainty for competitive service providers who are developing innovative new products and services. The assessment criteria include considerations that cannot always be easily clearly assessed, particularly in advance, or defined objectively. Examples include the potential impacts on vulnerable consumers. The benefits of new products and services may flow through to particular consumer segments indirectly - through lower prices, for example - or over time as technological changes reduce costs. This has often been the case with new products and services across many industries, not just the energy sector.

As described in the Options Paper, the 'benefits first' approach that the ESB proposes involves questions such as what a new service or tool would allow consumers to do that they couldn't do before and what evidence is there that consumers want this new offering. This places the burden on service providers to demonstrate the potential benefits to the ESB and others (including Energy Consumers Australia and other consumer advocates), i.e. to obtain permission to offer a particular product or service, rather than developing a new offering within a competitive market and having regard to established regulatory obligations. This type of public interest test for new competitive service offerings discourages and undermines innovation.

Analysis of future market design and regulatory controls on new products and services must be quantitative as far as possible, reflect reasonable assessments of risk, based on evidence and proportionate to the expected consumer detriment. Where this cannot be done ex ante, the ESB should enshrine ex post evaluation in its regulatory design that draws on consultation with regulated businesses to understand the full range of impacts.

Tariff reform

We agree with the ESB that exposure to sharper price signals can encourage more efficient consumption, network utilisation and investment decisions. However, to this point, network tariff reform has not been orderly or able to achieve its objectives in any meaningful way. This reflects networks' failure to effectively engage with consumers and retailers through the Tariff Structure Statement (TSS) process. Rather, many of the networks have developed complex pricing proposals and sought to obtain approval and acceptance, rather than engaging more constructively with consumers and retailers at an early stage. The TSS framework seems capable of delivering meaningful tariff reform but the ESB (and Australian Energy Regulator in its role to approve TSS and network tariffs) should require the networks to adopt a more collaborative approach.

At the wholesale level, the competitive market allows energy consumers with some flexibility in their consumption profile to enter into contracts that offer exposure to sharper prices. This will extend to smaller consumers over time as the cost of demand response technologies and supporting infrastructure declines.

As a final point, the ESB must reconcile the regulation of retail prices with sharper price signals. There is a high risk that retailers will face costs that they manage and / or pass through to consumers (e.g. Time of Use or demand-based network charges) when the prices they charge are

regulated or caps on annual bills are in place.

Technical standards

The ESB's principles for technical standards are reasonable. However, we encourage the ESB to consider the incentives for service providers to develop new products and services and their ability to recover costs as it tries to promote switching. At the same time, the ESB should avoid an overly prescriptive approach that potentially locks all parties into a common communications platform or network that is made redundant through technological developments. Top down solutions are generally more expensive and / or have a greater risk of redundancy. A preferable approach would be to develop minimum technical standards at the outset to which the competitive market can adapt, similar to the approach to smart meters in NECF jurisdictions.

