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Australian Energy Market Commission
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Improving Security Frameworks for the Energy Transition Directions Paper

Snowy Hydro Limited welcomes the opportunity to comment on matters raised in the Directions Paper from the Australian Energy Market Commission (the Commission) on Improving Security Frameworks for the Energy Transition Directions Paper.

Essential system services (ESS) are critical to maintaining overall power system security by meeting core power system requirements. The need for energy services such as Frequency Control Ancillary Services (FCAS), reactive power and inertia will continue to increase as the generation mix continues to change. Essential services need to be unbundled with an inertia market required at minimum to ensure that the current NEM energy-only design delivers ongoing security and reliability of supply as the energy transition continues. Snowy Hydro understands the difficulty in implementing markets for new services, however we believe further assessment should be undertaken and not ignored for 10 years.

As a general principle, we believe that a market-based approach enables a technically sound solution through the most efficient allocation of resources in the long term. The development of the Commission's framework instead focuses on improving and renaming directions through a contracting arrangement, rather than providing appropriate incentives that align with existing market structures which is proven as the most cost effective and efficient means of supporting the provision of system services. A market based mechanism, appropriately aligned with power system stability fundamentals, enables a technically sound solution through the most efficient allocation of resources. The Commission should not put aside the best interests of the market in the long term to obtain an easy to implement short term solution.

The Commission understands the critical need to provide better incentives for participants to invest in providing system security in the longer-term, however the Directions Paper has ignored this important objective to focus on transparency and compensation on directions. Despite the Commission noting that directions should remain a last-resort mechanism, the updated proposal indicates directions will continue to be used in a more transparent manner without solving underlying issues that gave rise to the need to issue directions. That is, the need for more investment in the NEM in assets capable of supplying essential system services. The key concerns Snowy Hydro has with regards to the Directions Paper include:

- No long-term objective to value services efficiently through a market; and
- No demonstrated objective to develop unbundled ESS markets, which will not support investment in the appropriate services.

At a minimum, the Commission should add as a framework objective, the unbundling of services and markets. If the Commission however proceeds with the Security Frameworks then there will need to be significant changes made to the Directions Paper, which include:

- Transitional Plan should be reduced from 10 years to 3 years. The transitional period is too long and it should be shortened to 3 years to allow for the appropriate reform to be undertaken. Through the transition period the Commission should provide an objective to unbundle and define services for AEMO and consideration of a market.

- AEMO, as the operator, is the only entity that can define services for system security and to unbundle them. It is therefore important that there is an objective in the rules to make sure this is done.
- AEMO has been unable to define these 'missing services' and there's no NER requirement in the rules to define them. That requirement needs to be written into the NER with a timeframe set.
- The Commission's proposal to amend directions compensation to a benchmark based compensation framework will inadequately pay participants. Compensation based on short-run marginal cost that does not account for scarcity, does not account for the increased costs of bringing forward plant maintenance and is often erroneously determined without including the opportunity cost of fuel which will have significant shortcomings. This would not be an improvement to directions.
- Where inertia requirements interact with energy and/or FCAS market dispatch it remains unclear how this long term procurement would lead to non-network options being able to meet the need. The framework appears to favour network options over non-network options.
- If inertia or any other defined services is to be procured by contract rather than spot market the contract counterparty should be AEMO. AEMO should play the market clearing role, as it would avoid any conflicting interests due to their role in a power system.
- Support TNSP's not being required to undertake a RIT-T if AEMO requires the inertia and/or system strength services to be provided less than 18 months after the NSCAS is declared.
- We support transparency obligations being put in place by AEMO. The proposal to have daily reporting and annual reporting on its enablement processes and assessments of security performance.
 - There should be an obligation on AEMO to demonstrate the investment being undertaken under this new framework and be reviewed after 3 years. If there is limited investment then a market should proceed as the solution.
- Support AEMO having the single procurement power to ensure adequacy of security in the nearer term which would include testing new ways to secure the system, and to avoid last resort measures such as directions.
 - AEMO has better visibility over real-time security and would be better placed to enable contracts across regional boundaries to meet the security needs of the NEM.
- If the Commission's proposal is expected to have a transition period of ten years then the contract duration should be less than three years so participants can understand the changes being made.
- An inertia market is the most efficient way to procure inertia in the long term however should the inertia floor proceed in the short term we support AEMO continuing to assess whether the inertia shortfalls and the TNSP procuring the service required.

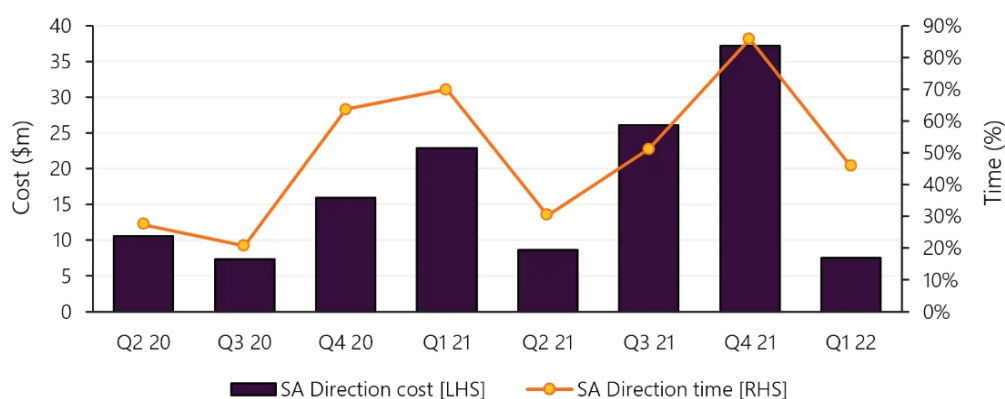
Improvements of the Directions Framework will formalise Directions

The current system strength frameworks have been important in maintaining system security to date. In 2017, when the current system was put in place, the frameworks were successful in maintaining the system.

With synchronous generators retiring however and non-synchronous generators entering the market, the pace of the transition has been rapid and has resulted in adding to the growing system strength deficit. It is for this reason Snowy Hydro understands that the frameworks need to evolve, allowing them to be agile and flexible.

The Energy Security Board (ESB) played an important role in distinguishing between electricity market design failure, and "Missing Markets" that would provide the appropriate incentives. The aim of the ESB was to reduce the number of AEMO interventions and it was found the identification, pricing and scheduling of the relevant services and constraints was found to achieve this. The long run, least-cost solution to inadequate System Strength is to reduce future AEMO interventions which as shown below in South Australia continues to be used heavily.

Figure 1: Time and Cost of system security directions (energy only) in SA¹



It is concerning, however, that since the ESB proposed reforms intended for system strength, inertia and voltage control, the Commission's approach is to benchmark directions compensation and increase transparency of directions reporting. It will mean that through this framework directions will not remain a last-resort mechanism despite the Commission's intention throughout the paper to be the opposite.

Objectives need to be refined

Snowy Hydro understands that the Operational security Mechanism (OSM) would be too costly and complex to develop and implement, however the revised rule change has removed some critical objectives of the OSM which were supported by industry.

If the proposed Directions Paper framework remains in place and market mechanisms are not adopted, then the appropriate incentives will not be in place and the investment needed by the NEM will not occur. There is a misguided belief that markets can be formed just in time to achieve the investment required. It is for this reason that the Commission should include a specific objective to make AEMO responsible for defining the system security needs and accrediting market participants to supply system services. By defining and unbundling these services they can be individually priced and participants are given the right signals to invest in the technologies required.

Snowy Hydro acknowledges that there are technical challenges that need to be overcome in order to implement a market-based approach to the valuation and procurement of system services; it is critical that design work continues until a viable market-based approach is resolved and not be removed from the objectives. Procurement of system services is a long-term, ongoing challenge and must ultimately be addressed by a sustainable solution, which has also been noted by the Commission. Attempts to bundle these mechanisms with system service reforms risks further delaying the introduction of missing markets for system services and undermining system security.

To help ensure there is a pathway to a sustainable market and new investment there will need to be obligations in the rules for AEMO. Investors need signals and the services need to be unbundled. Market power concerns, as noted in the Directions paper, will not be an issue in most cases if the need for new resources is signalled to the market ahead of time. The Rules should therefore include an obligation for AEMO and TNSPs to publish what new entrant resources or capabilities could participate in the OSM constraints/combinations.

¹ Source: <https://aemo.com.au/newsroom/news-updates/qed-q1-2022>

No long-term objective to value services

The Commission's intent for a long-term goal to value services through markets has disappeared with no cost benefit analysis.

Transitional arrangements which sunset after 10 years will give no opportunity for the appropriate incentives required for investment and the NEM will have to wait until after 2030 to consider markets. The transitional arrangements are unnecessarily long and must be at maximum 3 years if there are transitional arrangements. .

Snowy Hydro notes that a recent report by Marketwise Solutions for the Australian Energy Council ("MarketWise Report")² found that a market-based approach to procurement is most consistent with the current NEM market design, given that inertia dispatch outcomes are consistent with energy market dispatch outcomes, and can be co-optimised with fast frequency response and fast frequency control ancillary services. Furthermore, spot market prices reflect the economically efficient price of inertia in an operational timeframe. In contrast, the MarketWise report highlighted a number of limitations of a non-market approach to procurement, including potential over-procurement (increasing system costs), lack of co-optimisation and lack of a transparent price mechanism.

No demonstrated objective to develop unbundled ESS markets

One of the main objectives of the Operational Security Mechanism (OSM) proposal was to serve the purpose of unbundling the Essential System Services (ESS) by defining and unbundling these services so as they can be individually priced. With no intent to define services under the new objective of the Commission there is no transparent way these services will ever be identified and appropriately invested.

Directions compensation to a benchmark based compensation framework

The Commission notes that directions compensation runs a high risk of over or under compensating participants instead of preferring to amend the basis of directions compensation to a benchmark based compensation framework, similar to the framework used during market suspension. Snowy Hydro is concerned that participants will be paid inefficiently for the service without any consideration of an efficient market which will ultimately not lead to the investment required in the market. At a time when investment is needed most the Commission will ignore all market approaches and attempt to make directions more transparent and improved.

The compensation available under directions is inadequate, as it is based on short-run marginal cost, does not account for scarcity, does not account for the increased costs of bringing forward plant maintenance and is often erroneously determined without including the opportunity cost of fuel. These shortcomings are just further formalised through this benchmarking based compensation framework.

Snowy Hydro is particularly concerned with the proposal to adopt a short-run marginal cost approach for benchmarking directions compensation. For fuel constrained generators such as hydro-power, short-run marginal cost is not a meaningful concept. Compensating for directions based on such an approach may be "cost-effective", insofar as generators would receive less compensation, but it would not be "equitable" (as suggested by the Commission), efficient or good policy. It would simply mean that output is appropriated from generators at below fair value. Compensation based on the estimated short-run marginal costs of particular generators does not not, in fact, "improve the framework's cost efficiency" for the same reason that the NEM is not settled based on individual short-run marginal cost.

A much fairer approach is to compensate generators based on opportunity cost or, at least, as occurs at present, a value tied to the market-clearing marginal price. Deliberately

² MarketWise Solutions, Inertia Ancillary Service Market Options, 31 August 2021

undercompensating generators for directions may be superficially appealing but in the long-run will undermine revenue adequacy for generators needed to provide system strength to the NEM.

The Commission's rationale for omitting compensation for opportunity costs is circular and specious. The Commission refers to its decision not to include opportunity cost compensation for market suspension, because the rationale for that framework was apparently to remove the incentive to rely on directions, which do not compensate opportunity costs. Yet the Commission now cites with approval the lack of opportunity cost compensation under market suspension as reason not to compensate directed participants for opportunity costs. In short, the Commission never asks itself the question: is there merit in compensating directed generators for opportunity cost? Would it improve the directions framework and, ultimately, support the NEO? It is an important question because, for fuel constrained assets, opportunity cost is by the far the most significant economic cost. It is difficult not to form the impression that the Commission is simply seeking ways to lower payments to generators.

More direction compensation claims under this approach are likely to go to an independent expert and will take a very long time to resolve.

Transparency

Snowy Hydro submits that it is sensible for the Commission to look at opportunities to improve transparency in the use of directions. Although the proposal by the Commission will provide less information to the market in comparison to the AEMO requirement to report after every direction, we support AEMO being required to prepare a detailed quarterly report that includes trends observed in directions in each quarter, AEMO's view on whether directions may be required in future reporting periods, and a breakdown of compensation amounts payable to each directed or affected participant.

The transparency measures, however, do not go far enough. To achieve the appropriate transparency we support clear obligations in the Rules that outline the granularity of information that is required from AEMO. The market would benefit from clear target dates for AEMO to provide transparency of future needs. It is for this reason Snowy Hydro does not support a seven-year review to update on the framework. Instead the appropriate length should be 3 years for a review. As noted earlier, the Commission should also focus on the entry of new investments to understand whether it is delivering the intended benefits and whether it is contributing to unbundling system services.

Enablement of Planning Timeframe Security Contracts

Snowy Hydro supports placing enablement responsibility on AEMO, which would align with the previous work undertaken as part of the Commission's Essential System Services (ESS) work. AEMO would have better visibility over real-time security and would be better placed to enable contracts across regional boundaries to meet the security needs of the NEM. AEMO is best placed to enable security contracts.

AEMO would also have the advantage of being the one centralised system for enablement which would be needed and it would avoid significant costs, with the TNSP developing its own capabilities and systems to communicate close to real-time with other TNSPs to determine security needs and which TNSPs contracts would be enabled to meet those needs.

If the Commission's proposal is expected to have a transition period of ten years and be reviewed in seven years then the contract duration should be less than three years. Under the transitional services framework the contract duration should be extended to a maximum of five years.

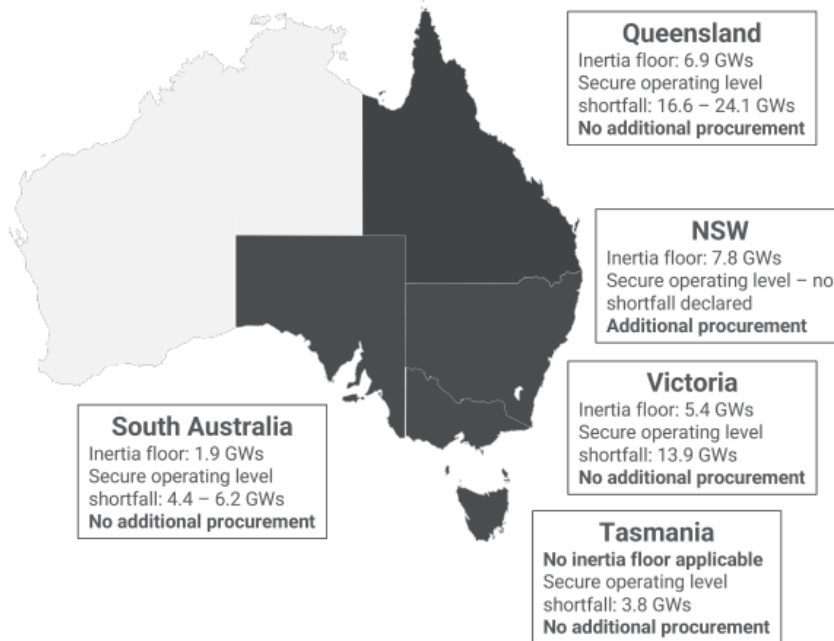
Inertia Floor

An inertia market is the most efficient way to procure inertia in the long term. However should an inertia floor proceed in the short term we support AEMO continuing to assess whether there are

any inertia shortfalls in sub-networks as it does under the current framework. The TNSPs would then be obliged to make this level of inertia continuously available, three years into the future, mirroring the current system strength obligations.

With the introduction of a mainland inertia floor we would support figures, such as the one below, being displayed by AEMO through public reports on what procurement is required in what regions.

Figure 2: How the new minimum inertia floor could operate



Source: AEMC

About Snowy Hydro

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 Directions Paper and any questions about this submission should be addressed to me by email to panos.priftakis@snowyhydro.com.au.

Yours sincerely,

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