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Australian Energy Market Commission

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## Efficient provision of inertia

AGL Energy (AGL) welcomes the opportunity to provide feedback on the *Efficient provision of inertia* consultation paper.

AGL is a leading integrated essential service provider, with a proud 185-year history of innovation and a passionate belief in progress – human and technological. We deliver 4.3 million gas, electricity, and telecommunications services to our residential, small, and large business, and wholesale customers across Australia. We operate Australia's largest electricity generation portfolio, with an operated generation capacity of 11,208 MW, which accounts for approximately 20% of the total generation capacity within Australia's National Electricity Market.

### QUESTION 1: TECHNICAL INFORMATION ON INERTIA

*Do stakeholders consider there is any additional technical information required to assess the challenges and long-term system requirements related to inertia beyond what AEMO is doing?*

*Do stakeholders have their own technical information or studies that can be shared to help answer these questions?*

We support the AEMC's key technical objectives of defining system inertia needs, defining the relationship between rotational inertia and other technologies, and determining inertia interactions with other security services. We consider that identification of specific system service needs, rather than necessary unit combinations for a secure system, is a crucial step in developing appropriate investment incentives for essential system services regardless of the procurement mechanism utilised. In regard to assessing the potential of other technologies to provide inertia, we encourage the AEMC to have a progressive approach so that emerging and potential inertia technologies will be covered by any new inertia framework.

We do not currently have technical information or studies that we can share on these questions.

### QUESTION 2: INERTIA PROCUREMENT AND ALLOCATION IN REAL-TIME

*What are stakeholders' views on the merits (or not) of defining and procuring inertia requirements dynamically in operational timeframes, as opposed to the current approach (that is, annual assessments that inform longer-term inertia procurement to specified minimum levels)?*

We strongly support the objective of defining and procuring inertia requirements dynamically in operational timeframes so that the investment incentives for the provision of inertia are aligned with the system need which is highly variable, and likely to become more variable as the system transitions, as the AEMC has noted.

Only dynamic procurement will allow the level of inertia procured to adjust with the constant variations in the volume and nature of generation, network, and load. Without dynamic procurement, over procurement will be necessary as a safety net since procurement will be based on forecast estimates, rather than actual system need. We also agree with the AEC that the dynamic procurement of inertia would lead to a co-optimisation between inertia, energy, and other ancillary services which would lead to the procurement of a more efficient mix of these services to the benefits of consumers which is not possible through static annual procurement.



### QUESTION 3: INVESTMENT SIGNALS FOR INERTIA

*What are stakeholders' views on the adequacy of the current inertia framework in providing long-term investment signals and the need for reform?*

The current inertia framework, by which inertia is procured by TNSP contract only where a shortfall is predicted, and which does not explicitly value and procure the inertia required during normal operation, does not provide adequate incentive for providers of inertia to remain or enter the market. While these generators will benefit from being dispatched in priority to generators that do not provide inertia when their inertia is required, and they will receive compensation for this operation through the energy market or directions which will cover their short-run marginal cost (SRMC), the compensation received does not vary due to the supply-demand balance of inertia and therefore an efficient investment signal does not exist.

By relying on inertia as a by-product of the provision of energy, and with no scarcity price to signal the need for investment, the current framework is no longer fit for purpose as the proportion of generators in the NEM which do not provide inertia as a by-product is growing.

Inertia would be most efficiently procured with a scarcity price signal that ensures the market is incentivised to provide the quantity of inertia demanded. If such a framework were created, in the event of an undersupply of inertia, scarcity prices would occur of a magnitude relative to the size of the undersupply and these prices would drive investment as they would signal an opportunity for investors to earn revenue at prices above SRMC. Investment would be driven by the clear expectation of revenues above SRMC since they would be the prevailing market conditions.

While the AEMC references a stakeholder submission that says investment is driven by the expectation of ongoing revenues and suggests this justifies the use of contracting rather than a market, it is well established that the best way to determine the efficient level of investment is through a market with a scarcity price signal. Since a contract approach has no market signal to drive investment it will be more likely to lead to an inefficient oversupply of inertia (since risking an undersupply would be unacceptable) to the detriment of consumers.

We also support the AEC suggestion that increased transparency of inertia demand is necessary and that a market is the best mechanism to ensure this.

### QUESTION 4: WILL THE AEC'S PROPOSED SOLUTION BEST ADDRESS THE PROBLEMS RAISED?

*What are stakeholders' views on the AEC's proposed solution?*

*Is it the best solution to improve the:*

- *efficiency of inertia provision in the operational timeframe?*
- *efficiency of inertia provision in the investment timeframe?*
- *transparency of the power system's inertia requirements?*

AGL, as a member of the AEC, was involved in the drafting of AEC's proposed solution and considers that its proposed solution best addresses the problems raised in operational and investment timeframes because it uses market signals to drive investment and the behaviour of providers of inertia, and provides a transparent price signal. By using the forces of demand and supply to determine efficient prices, the AEC solution will provide a more efficient signal for the provision of and investment in inertia than any alternative solution.

### QUESTION 5: ALTERNATIVE OPTIONS

*Do stakeholders consider that any of these options address the problems identified (see Chapter 3) more effectively than the proposed solution of an inertia spot market? Are there any additional options not identified in this consultation paper that should be investigated?*



### Ahead or close to real-time market for inertia

We do not support the ahead market alternative, as an ahead market relies on forecasted demand and other market conditions and therefore will lead to less efficient participation, market signals, and investment outcomes.

The AEMC has stated that it has decided not to address the ahead market alternative as it considers it is covered by the Operational Security Mechanism (OSM) rule change. We do not consider the OSM as an alternative mechanism to value and procure inertia since the OSM is designed more as a scheduling mechanism for system services that cannot be separately valued. We strongly support the unbundling of system services where possible and therefore suggest this inertia rule change pursue the objective of designing an inertia specific mechanism which is not associated with the OSM.

### Shadow pricing

The shadow pricing approach, like an inertia spot market, uses the forces of demand and supply to determine a price, but instead of determining the scarcity price from the marginal cost of supply, it assigns a value to inertia by determining the marginal cost of an inertia constraint, with the price of inertia based on how much money were saved if the constraint were relaxed. We expect it may be possible to create an effective inertia market through a shadow pricing mechanism, but suggest it is likely to more complex than the proposed inertia spot market without additional benefit.

### RoCoF Control Service

A rate of change of frequency (RoCoF) spot market would have some of the same benefits of an inertia spot market, however it would preclude some of the stability benefits of inertia which are not covered by RoCoF, and we therefore suggest the AEMC focus on the inertia spot market.

### Adjustments to the existing TNSP procurement framework

AGL supported the introduction of the new system strength framework under which TNSPs contract with generators and others to provide all the needed system strength in the NEM. We consider this is the best approach for system strength because system strength is a local requirement and therefore the markets for system strength from a competition perspective are small and therefore have few participants, which makes efficient price discovery unlikely.

This contrasts with inertia which is a global service that can be provided interregionally. We therefore do not consider TNSP procurement is the best primary mechanism for the procurement of inertia. As discussed above under question 3, it is well established that the best way to determine the efficient level of investment is through a market with a scarcity price signal and since a contract approach has no market signal to drive investment it will be more likely to lead to an inefficient oversupply of inertia.

### AEMO forward procurement

We suggest AEMO contracting for inertia will not be the best approach for the same reasons discussed in the above paragraph.

### Maintain the current framework until technical work informs the best approach

Consistent with our last submission on this inertia consultation and our 2016 rule change request for an Inertia ancillary service market, we do not consider the current framework is adequate. The NEM needs a scarcity price signal for inertia as soon as possible to ensure market participants are incentivised to provide inertia and the current framework is inadequate for the reasons outlined above.



#### QUESTION 6: IMPLEMENTATION CONSIDERATIONS

*What are stakeholders' views on the implementation considerations identified?*

Given this rule change has only recently commenced we agree the implementation considerations identified are still relevant. In regard to the potential need for a cost benefit analysis we strongly suggest that the parameters for how such analysis is conducted is informed by stakeholders to ensure that it is as accurate as possible and is not reliant on assumptions which may undermine the result.

The AEMC has extended the statutory timeframe for a draft determination until 29 February 2024 and we consider this appropriate given the complexity of this rule change.

#### QUESTION 7: DO YOU AGREE WITH THE PROPOSED ASSESSMENT FRAMEWORK?

*Do you agree with the proposed assessment framework? Are there additional principles that the Commission should take into account or principles included here that are not relevant?*

Yes, the five assessment criteria (power system security, principles of market efficiency, costs and complexity, timing and uncertainty, innovation and flexibility) seem appropriate.

If you have any queries about this submission, please contact Anton King on (03) 8633 6102 or [aking6@agl.com.au](mailto:aking6@agl.com.au).

Yours sincerely,

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