



11 April 2023

John Kim
Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

Dear Mr Kim

RE: Efficient Provision of Inertia (ERC0339)

Shell Energy Australia Pty Ltd (Shell Energy) welcomes the opportunity to respond to the Australian Energy Market Commission's (AEMC) efficient provision of inertia rule change consultation paper.

About Shell Energy in Australia

Shell Energy is Shell's renewables and energy solutions business in Australia, helping its customers to decarbonise and reduce their environmental footprint.

Shell Energy delivers business energy solutions and innovation across a portfolio of electricity, gas, environmental products and energy productivity for commercial and industrial customers, while our residential energy retailing business Powershop, acquired in 2022, serves more than 185,000 households and small business customers in Australia.

As the second largest electricity provider to commercial and industrial businesses in Australia¹, Shell Energy offers integrated solutions and market-leading² customer satisfaction, built on industry expertise and personalised relationships. The company's generation assets include 662 megawatts of gas-fired peaking power stations in Western Australia and Queensland, supporting the transition to renewables, and the 120 megawatt Gangarri solar energy development in Queensland.

Shell Energy Australia Pty Ltd and its subsidiaries trade as Shell Energy, while Powershop Australia Pty Ltd trades as Powershop. Further information about Shell Energy and our operations can be found on our website [here](#).

General comments

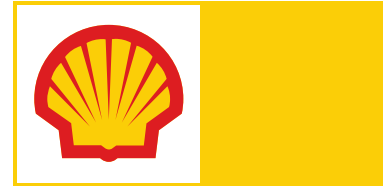
Shell Energy considers that incentives to encourage investment in inertia³ provision should be designed and implemented as soon as possible to ensure that no system issues develop due to a lack of inertia. Shell Energy's view is that incentivising inertia is most efficiently done as part of the dispatch process to enable market participants to co-optimize energy with other system services. In our view, this can be done relatively simply by creating a new Frequency Control Ancillary Services (FCAS) for Rate of Change of Frequency (RoCoF)

¹By load, based on Shell Energy analysis of publicly available data.

²Utility Market Intelligence (UMI) survey of large commercial and industrial electricity customers of major electricity retailers, including ERM Power (now known as Shell Energy) by independent research company NTF Group in 2011-2021.

³ Inertia being defined as the resistance of the network frequency to change in response to a net change in the balance of supply and demand of active power.

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management. RoCoF is the essential system service that must be managed, with the provision of real or synthetic inertia⁴ being ways of achieving RoCoF management. Other service provision methods may emerge over time.

We recommend that a RoCoF FCAS market framework be progressed by the AEMC immediately, not delayed as suggested in the consultation paper. We do not consider that the implementation of a new RoCoF FCAS market is a significant and complex change to the energy market. In fact, we suggest it would be similar in its impact and complexity to the implementation of the new very fast contingency FCAS markets⁵. The RoCoF FCAS market could in many ways be viewed as a form of super-fast contingency FCAS. We also disagree that establishing the technical input to dynamically calculate inertia requirements would be complex and challenging for the Australian Energy Market Operator (AEMO). In our view this would be no more complex than the dynamic calculation of contingency FCAS requirements which can and do change in response to changes in power system conditions such as an electrical islanding event.

In our view, the framework should be for RoCoF management FCAS with registration conditions for service providers via the Market Ancillary Services Specification developed by AEMO. We do not support the consultation paper's proposal to delay the implementation of a framework for the provision of this critical system service to allow additional technical or engineering work to be undertaken by AEMO. Instead, we suggest this engineering and technical work is more aligned to the requirements for registration as a service provider and the level of service required under different system operating conditions. This can be undertaken subsequent to the design and implementation of the necessary framework for new real time market.

The RoCoF management market for the future must be co-optimised with the Energy and the other eight contingency FCAS markets to ensure the framework can work over the long term. While synchronous generators or synchronous condensers may currently be the most obvious forms of RoCoF provision, battery energy storage systems (BESS) could reserve capacity and potentially energy storage headroom and foot room to provide the service. Wind may also be able to provide RoCoF FCAS via energy spilling. New synchronous generating units could be designed to facilitate operation in synchronous condenser mode. To achieve this, the energy and FCAS markets, including the new RoCoF FCAS market must be truly co-optimised.

It should be noted that the dispatched energy required to supply a RoCoF FCAS market will be very small in comparison to the requirements for system energy or existing FCAS markets because the time frame for power delivery is relatively short. Accordingly, the appropriate deployment of BESS for these markets offers cost-effective approaches to these issues.

Shell Energy does not support the alternatives to a RoCoF FCAS market discussed in the consultation paper. It is not clear that they would provide the correct incentives for investment in the provision of inertia over the long term. In the case of central procurement, contracts for inertia provision or regulated assets provided by network service providers (NSPs) are likely to result in over procurement or provision and increased costs to consumers.

Directions by AEMO may not represent a pragmatic alternative as in the case of a synchronous generating unit it must be available to be dispatched. A BESS must have sufficient stored energy or storage headroom to provide the service, even though the actual quantity of dispatched energy will be minor. From the viewpoint of market and power system operational efficiency, directions should not be considered a method for ongoing supply of this essential system service.

An ahead style mechanism, such as OSM, fails to co-optimize energy and FCAS dispatch. As a result, this is likely to result in inefficient over procurement which may negatively impact energy market dispatch through the

⁴ Synthetic inertia is sometimes referred to as fast frequency response.

⁵ Shell Energy understands this is proposed to be a 1 second measured response in the future MASS (version 8)



unnecessary reservation of capacity and energy storage that would otherwise be available for dispatch in the energy and FCAS markets.

The proposed shadow price alternative would have the effect of limiting provision of supply to synchronous generators as the dispatch engine would have no insight into whether inverter connected resources had capacity or storage available to enable provision of the required service. It would also not result in a cost-of-service advantage over a RoCoF FCAS market as in the RoCoF FCAS market oversupply would similarly result in a zero-price outcome.

In contrast, under our preferred RoCoF FCAS approach, procurement volume would be net of network service provider regulated services and also synchronous inertia from energy market dispatch. We do not support a market design that would allow for unit commitment or de-commitment by AEMO as proposed in the Operation Security Mechanism (OSM). Market participants should be free to continue to choose to commit, or decommit units based on forecast price outcomes across the energy and FCAS markets.

To ensure reliable investment signals are provided to participants, a common clearing price must be paid to all service providers who the dispatch engine either dispatches or relies on for the provision of the service. This would include real inertia allocated to synchronous generators dispatched in the energy market.

Additionally, we propose that to address market power concerns, synchronous generators would not be required to submit a bid. Rather, synchronous generators would have a default bid of \$0 per MWsec automatically allocated to those synchronous generators dispatched in the energy market based on the AEMO allocated contribution to meeting the RoCoF management requirements. Synchronous generators would therefore act as a price taker only.

Network services providers (TNSPs and DNSPs) should also be permitted to participate in the RoCoF FCAS market but would be limited to service provision using non-regulated assets. An NSP would not be permitted to build and operate a regulated network asset for the sole purpose of providing RoCoF FCAS. This would ensure that efficient incentives are retained for market based service provision over the long term.

We recommend that cost recovery for RoCoF FCAS align with cost recovery for contingency FCAS.

Shell Energy's proposed RoCoF FCAS framework will facilitate the unbundling of what are currently opaque and undefined bundled essential system services under the proposed OSM. As such, our model would promote the AEMC's longer-term objective of unbundling essential system services.

Implementing new RoCoF FCAS markets would also provide the most efficient and effective framework for AEMO to meet its obligations under the revised Frequency Operating Standard where new RoCoF standards are proposed under the full range of potential power system operating conditions including the declaration of indistinct events.

Shell Energy does not consider that retaining the status quo is an acceptable outcome. Provision of RoCoF management via implementing a RoCoF FCAS market is essential for the ongoing secure operation of the power system and the effective provision of incentives for the ongoing efficient operation of the energy markets.

For more detail on this submission, please contact Ben Pryor, Regulatory Affairs Policy Adviser (0437 305 547 or ben.pryor@shellenergy.com.au).

Yours sincerely

[signed]

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