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To: AEMC  
Submitted via email

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**Re: Response to Primary Frequency Response Rule Changes – Draft Determination**

Infigen Energy (Infigen) welcomes the opportunity to make a submission. Infigen owns portfolio of wind and firming capacity across New South Wales, South Australia, Victoria and Western Australia. Our renewable portfolio includes 670 MW of vertically integrated wind plus c90 MW of contracted capacity in Victoria. Infigen also owns and operates a portfolio of dispatchable firming capacity including a 123 MW open cycle gas turbine in NSW, a 25 MW / 52 MWh battery in SA (commissioning October 2019) and will soon take ownership of 120 MW of dual fuel peaking capacity in SA. Infigen has also bought Power Purchase Agreements (PPAs) from wind farms, and is seeking additional wind and solar PPAs. Our development pipeline has projects at differing stages of development covering wind, solar and dispatchable firming capacity.

**1. OVERVIEW**

In our submissions to the Directions Paper, while acknowledging that frequency performance has deteriorated, Infigen did not support an uncompensated mandatory primary frequency response for all resources. This was on the basis that requiring all (capable) resources to provide tight deadband primary frequency response (PFR) will mean that the service is not being provided by those that are best able to or at least cost, with a risk of over-consumption and, eventually, under-supply (i.e. the usual market characteristics of a mis-priced good). Mandatory requirement for PFR will not reward or incentivise potential capabilities of emerging technologies and indeed may deter new investment in these capabilities as noted in our previous submission.

Further, Infigen does not support a blanket requirement on all assets at this time. Both implementation of a PFR response and seeking exemption from the PFR requirement may be complex and costly. This cost – if equal for each participant regardless of assets size or operation – will be more burdensome on generators with lower annual turnover. While such assets may apply for an exemption, this will also be a costly exercise and we therefore recommend initially exempting all units less

than 100MW<sup>1</sup>, until AEMO confirms that frequency performance is still unsatisfactory.

Notwithstanding these broad arguments, Infigen has specific comments on the AEMC's Draft Determination as noted below – seeking to minimise disruption to existing and future assets while still delivering the services requested by AEMO.

#### *Sunset clause*

Infigen supports the AEMC's decision to implement a sunset clause, with a view to developing appropriate market mechanisms (whether spot market or otherwise) to incentivise the efficient delivery of PFR (at the lowest cost to consumers) as quickly as possible. We would encourage the AEMC, however, to consider the implementation timeframe and whether a shorter sunset clause (e.g., two years instead of three years) would be appropriate to drive implementation of relevant markets.

It is critical to use the time between commencement and the sunset date to identify the quantity of services required to maintain a secure system and the price trade-offs that will apply. We note that AEMO has not, to date, identified what an "adequate" frequency histogram would look like. We propose that this should be an immediate obligation placed onto AEMO to assist with evaluating the effectiveness of the mandatory requirement and create a framework for designing, modelling and assessing new market frameworks.

#### *Exemption guidelines*

We broadly support the proposed exemption guidelines. We can see the merit in keeping the criteria of exemptions broad for flexibility and workability. However, there may need to be a role for AER to provide independent review of exemption applications.

Infigen supports the inclusion within the rules of an exemption framework under clause 4.4.2B which considers capability, cost of implementation, stability, ongoing costs, and other relevant physical characteristics. However, in our view technical risk associated with implementing PFR on each asset also needs to be considered in the framework. Specifically, there may be assets where compliance *may* be possible, but this is uncertain; implementation costs should be assessed against likelihood of successfully complying with the PFRR.

#### *Deadband setting*

Infigen agrees with lower bound of the deadband setting being set in the NER and not by AEMO through the PFRR (i.e., AEMO may elect a higher but not lower deadband). However, the proposed lower bound of +/-15mHz is extremely tight and poses technical and economic risks across the network. There has been no

<sup>1</sup> Or an alternative level, if supported by quantitative modelling.



evidence presented on the costs and benefits of the deadband being set so close to 50Hz, why it was set at this level in a NEM-specific context, or even what distribution of frequencies would be produced (or what distribution is required, as noted above). Infigen proposes initially setting a wider deadband, with tightening to occur if frequency performance remains inadequate against an appropriate standard.

The proposed deadband of +/-15mHz is less the metering accuracy – Infigen agrees with the AEMC that generators that do not have high-speed metering equipment should not be obliged to install it.

#### *Headroom or Stored Energy*

Infigen supports AEMC decision not to mandate headroom or stored energy. However, without a mechanism to procure headroom or stored energy, governor response alone may be ineffective at maintaining frequency. We again emphasise the need to transition to a market mechanism so that available resources can be efficiently allocated to different timescales (e.g., ensuring headroom required for contingencies is not exhausted by delivering PFR – or at least that any trade-offs are made explicit, as with existing FCAS services).

## **2. CONCLUSION**

We look forward to the opportunity to continue to engage with the AEMC. If you would like to discuss this submission, please contact Dr Joel Gilmore (Regulator Affairs Manager) on [joel.gilmore@infigenenergy.com](mailto:joel.gilmore@infigenenergy.com) or 0411 267 044.

Yours sincerely

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