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Australian Energy Market Commission
GPO Box 2603
Sydney NSW 2000

10 September 2020

Dear Australian Energy Market Commission

Firm Power submission on distributed energy resources integration – updating regulatory arrangements, dated 30 July 20 (Ref: ERC0309, ERC0310, ERC0311, RRC0039)

Firm Power is pleased to provide a submission to the Australian Energy Market Commission's (AEMC's) consultation paper on distributed energy resources integration – updating regulatory arrangements, dated 30 July 2020 (**Rule Change**).

Firm Power is an intending participant in the National Electricity Rules as a Generator and specialises in providing energy services as a non-network solution to network limitations and constraints. Firm Power leverages private investment to provide innovative solutions, actively participates in Regulatory Investment Tests (RITs) and works with NSPs to design efficient and cost-effective means to save customers money through non-network solutions.

Firm Power was recently awarded a grant under the NSW Emerging Energy Program to develop two battery energy storage systems in Western Sydney as a way of deferring network investment to meet peak summer loads (see here for further details: <https://energy.nsw.gov.au/renewables/clean-energy-initiatives/emerging-energy-program>).

Firm Power broadly supports the objectives and principles of the Energy Security Board's (ESB's) "two-sided market" in streamlining services for those who use electricity and those who sell electricity on behalf of end users. The Rule Change is a critical element of the ESB's vision of a two-sided market.

Scalable technologies, such as rooftop solar PV, energy storage (such as batteries), demand response, energy management systems and electric vehicles are increasingly offering cost-effective substitutes for grid infrastructure and conventional generation. DERs can help smooth variability locally rather than cause increasing spikes within the transmission system thereby flattening the "duck curve" which will become increasingly pronounced without a coordinated and efficient approach to integrating DERs.

Around the world, network operators are re-imagining the grid as an interactive network that provides value to connected end-users, however, the challenge is to implement change in a fair and equitable manner that does not have a potential for creating stranded assets. If changes provide inequitable outcomes, this would result in increasing numbers of end-users leaving the grid, creating greater burden on remaining customers which eventually brings about a feedback loop and "death spiral" for network providers.

To counter the "death spiral", the power system needs to evolve from a commodity kWh delivery system to an interactive network where technology providers can offer flexibility services and maximise the efficiency of network investment. It also needs to do this in a way that encourages would-be defectors to participate.

In light of the above and as a non-network service provider, we provide the following responses to the Rule Change:

Suite 6, Level 6, 201 Kent St Sydney NSW 2000

W www.firmpower.com.au

E info@firmpower.com.au

M +61 427 054 436

1	Proposed assessment framework	<p>The NEO and NERO seeks to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers with respect to price, reliability of the national electricity system, and reliability and quality of supply of electricity supply experienced by consumers.</p> <p>Whilst we agree with the assessment criteria included in section 3.4 of the consultation paper, the key missing aspects are:</p> <ul style="list-style-type: none"> • Equality and fairness. There is an unavoidable complication of distinguishing between DER users and non-DER users when determining the most efficient way to deliver hosting capacity in aggregate. It is also questionable what ability the end-consumer has to realistically reduce their individual burden on hosting capacity which is determined at the whole of distribution system level. Non-network service providers and aggregators have an important role in facilitating efficient utilisation of network assets and are best placed to provide 'balancing' services in a fair and equitable manner rather than place this burden on end-consumers. • Investment certainty and risk of stranded assets. If DNSPs are incentivised to maximise import (i.e. peak demand) as well as export (i.e. hosting capacity) this potentially leads to the proliferation of further network infrastructure which is only fully utilised for a short period. For the end-consumer this creates a risk that network assets become stranded assets, particularly under a "death spiral" scenario. Instead, DNSPs should be incentivised to maximise the utilisation of network assets by contracting 'balancing' services, such as non-network providers to ensure power flows between distribution networks and transmission nodes are economically optimised. An example of this is contracting energy storage at interface points to provide balancing services at distribution bulk supply and zone substations.
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2	<p>Updating the regulatory framework to reflect the community expectation for DNSPs to efficiently provide export services.</p>	<p>The Rule Change proposes to recognise export services as part of the network services to be provided by DNSPs to customers.</p> <p>Part of the proposed definition change is to consider export services as an 'identified need' when determining network investments and also allow existing incentive schemes to apply to export services.</p> <p>Firm Power is concerned about including a mandate for DNSPs to invest in and provide export services when the existing regulated investment frameworks are promoting inefficient capital and operating expenditure for consumption services. Expanding the mandate of DNSPs without addressing current inefficiencies in network planning and investment will lead to even greater inefficiencies in the market and greater burden to end-consumers.</p> <p>For example, there are very few Regulatory Investment Tests for Distribution (RIT-Ds) that result in non-network solutions being deployed. There are also very few examples of the Demand Management Incentive Scheme (DMIS) being used to promote non-network solutions.</p> <p>Instead of requiring DNSPs to provide export services, an alternative category of services should be considered in the form of 'balancing' services which help to balance the import and export of power flows within distribution networks. These balancing services will also provide NEM-wide benefits as conventional generation continues to retire, therefore, ring-fencing requirements should apply.</p> <p>This will allow the market to develop the most efficient solutions for maximising the utilising of network assets whilst supporting increasing DER hosting capacity. In this category, NEM-wide benefits of 'balancing' services should also be recognised to align with the ESB's two-sided market principles.</p>
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3	Promoting incentives for efficient investment in, and operation and use of, export services.	<p>The Rule Change proposes to adapt the AER’s service target performance incentive scheme (STPIS) to export services and introduce an appropriate incentive to encourage DNSPs to invest in export capacity to a level that meets community expectations and willingness to pay.</p> <p>Given the divide that exists between DER users and non-DER users as well as changing economics of DER technologies, determining a broad-brush metric for export services, similar to the concept of Value of Customer Reliability (VCRs) will be extremely challenging and may impact on the principles of fairness and equality.</p> <p>Instead, DNSPs should remove barriers and provide incentives for ‘balancing’ service providers to increase the efficiency and utilisation of network assets, thereby also improving hosting capacity.</p> <p>Part of the existing barriers for ‘balancing’ services is the imposition of Demand Use of Service (DUoS) charges for bi-directional technologies, like batteries. By treating batteries in the same way as indiscriminate load instead of controlled loads, this imposes pricing which is not cost-reflective. Battery technologies can act to ‘soak’ rooftop solar PV during the day as well as inject power during the early evenings thereby reducing the stress on network assets, however, they are penalised through DUoS charges as if they create a further burden on the network. Removing DUoS charges for battery technologies would remove a major barrier to their implementation.</p> <p>Furthermore, incentive schemes, such as demand side engagement and the DMIS should be adapted to reward DNSPs for contracting balancing services and increasing DER hosting capacity via non-network solutions. This creates an efficient marketplace for balancing service providers that delivers services at the lowest cost and improves the utilisation of network assets. The use of these incentive mechanisms also reduces the risk of building stranded network assets and also supports service providers who are best placed to deliver the services rather than place this burden on end-consumers.</p>
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4	<p>Enabling export charges as a pricing tool to send efficient signals for future expenditure associated with export services, reward customers for actions that better utilise the network or improve network operations, and allocate costs in a fair and efficient way.</p>	<p>The Rule Change proposes to remove the current prohibition on charging for exporting electricity and develop cost-reflective pricing signals for efficient investment in export services.</p> <p>Although we are supportive of introducing incentives that promote better utilisation of network assets we do not believe end-consumers are best placed to provide these services in an efficient and equitable way.</p> <p>There are inherent difficulties in structuring network tariffs that are fully cost-reflective, completely transparent (especially via retailer passthroughs) and are therefore socially accepted. This is especially the case with export services, where some customers may desire and be willing to pay for hosting capacity, but other customers may not desire such service features and therefore not want to be imposed with higher costs. Volumetric (i.e. kWh) type cost recovery also does not provide the right incentive to promote hosting capacity and results in an unavoidable cost to DER users which leads to inequitable outcomes.</p> <p>Instead, DNSPs should be incentivised to contract balancing service providers to increase the efficiency and utilisation of network assets, thereby increasing DER hosting capacity. Balancing service providers are best placed to provide the least cost improvement in network operations, especially when NEM-wide benefits are also considered.</p> <p>Firm Power also supports SAPN's proposal to explicitly exclude large embedded generators [and batteries] who are standalone generators from ongoing distribution charges. As mentioned above, this has been a major barrier to the deployment of bi-directional technologies like batteries in distribution networks.</p>
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We thank you for the opportunity to provide a submission to the Rule Change. If you have any questions in relation to this submission please don't hesitate to contact Chris Wilson on the contact details provided below.

Your sincerely,



Chris Wilson
Director, Firm Power
Email: chris@firmpower.com.au

Suite 6, Level 6, 201 Kent St Sydney NSW 2000

W www.firmpower.com.au

E info@firmpower.com.au

M +61 427 054 436