

**TO/**

Michelle Shepherd  
Commissioner  
Australian Energy Market Commission  
Level 15  
60 Castlereagh Street  
Sydney NSW 2000

Thursday, May 27, 2021

Dear Australian Energy Market Commission,

**Firm Power submission to the AEMC's Draft Rule Determination 'Access, pricing and incentive arrangements for distributed energy resources' dated 25 March 2021 (ref ERC0311, RRC0039).**

Firm Power is pleased to provide a submission to the Australian Energy Market Commission (AEMCs) Draft Rule Determination 'Access, pricing and incentive arrangements for distributed energy resources' dated 25 March 2021.

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>).

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 the potential to create stranded assets or provide perverse incentives to concentrate new technologies within specific regions of the grid while neglecting other areas of the network where this technology can provide a positive benefit to end-consumers.

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. Development of market rules which encourage Network Service Providers (NSP's) to interact with the private sector and create a level playing field in the provision of network services is a critical element of the ESB's vision of a two-sided market.

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Firm Power is supportive of the AEMC's role in advancing the National Electricity Rules and updating the framework and aligning incentives to support productive efficiency in the provision of distribution network services. We believe that DNSP's should be encouraged to develop pricing tools which enable export pricing signals to be sent to improve how exporters can integrate their behaviour with the energy system and markets.

Firm Power seeks to highlight the following key considerations of the Draft Rule:

1. Any network augmentation to provide export services should be considered as a last resort. Regulations should ensure Distribution Network Service Providers (DNSPs) are compelled to exhaust all options for procuring non-network / demand management services from the market before building more poles and wires.
2. Large standalone battery storage connected at Distribution level should be exempt from Distribution Use of System (DUOS) charges on the same basis the Draft Rule proposes to exempt large standalone generators from DUOS charges.
3. Any negative export charges levied should be used to reward service providers for "soaking up" DER generation and increasing export capacity.
4. Trial tariffs should extend beyond the TSS developed as part of the next regulatory determination or consideration should be given to grandfathering provisions in place for the life of non-network assets.
5. Access to the Demand Management Incentive Scheme (DMIS) "minimum project evaluation" scheme should be streamlined to support non-network solutions with RIT-D's available as a mechanism of last resort.
6. DNSPs that make gains under the Capital Expenditure Sharing Scheme (CESS) should not be penalised under the Efficiency Benefit Sharing Scheme (EBSS) when procuring non-network services i.e. they should be rewarded for trading CAPEX for OPEX and generating more efficient economic outcomes.

In light of the above and as a non-network service provider, we thank you for the opportunity to provide a submission to the AEMC's Draft Rule Determination.

If you have any questions in relation to this submission please don't hesitate to contact Marcus Keller at [marcus@firmpower.com.au](mailto:marcus@firmpower.com.au).

Your sincerely,



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### **1. Augmenting distribution networks to enable provision of export services**

Firm Power believes that upgrading distribution networks in order to cater for export services, should be considered in the context of capital efficiency and effectiveness and only undertaken as a last resort where demand management solutions are proven not to be viable.

Third-party non-network service providers, such as Firm Power, can provide DNSP's with alternative solutions to traditional network augmentation by offering long-term, low-cost energy service contracts that provide a positive Net-Present-Value when compared to the "do nothing scenario". These services help to better utilise DNSP's existing assets and hosting capacity with lower costs of capital. By providing a 'fit for purpose', scalable technology solution, DNSPs can deploy their capital more efficiently and avoid "lumpy" investments that may remain under utilised for the early part of their life. The savings from this approach will deliver lower overall costs to the consumer without compromising regulatory revenue and network integrity.

Firm Power recognises the AER and AEMC has provided DNSP's with the tools to invest in two-way energy flows via the Efficiency Benefit Sharing Scheme and Demand Management Incentive Scheme. Our submission below seeks to link these schemes with export tariffs, which incentivize non-network service providers to offer the most competitive pricing approaches which will ultimately benefit end-consumers.

### **2. Clarification of Definitions**

We note the following within the amendments to the Glossary (Chapter 10 of the NER):

- An Embedded Generator including Registered Participants have been excluded from the Distribution Service End User definition. We query why this has happened considering a large-scale BESS will be considered an electricity consumer when acting as a load?
- Further to the note above as Embedded Generators are not included as Distribution Services End Users will they not be eligible to participate in any Export tariffs which are applicable to '*distribution services relating to the transfer of electricity generated by a distribution services end user*'?

Firm Power would anticipate that any development of Export Tariff Guidelines, which potentially price in the benefits a non-network large generator and/or load can provide to a DNSP, should include the project proponents in this consultation process. We note the proposed new clause 6.8.1B 'Export Tariff Guidelines' for the NER does include this level of engagement with Registered Participants within its definition. If Embedded Generators are included in the Distribution Services End Users definition this ambiguity is removed.

We note that embedded generators and registered participants are not included in the definition of 'customer export' under rule 8.13. Once again, we query why these customer classes have been omitted?

Furthermore, the Draft Rule seeks to exempt large standalone generators from the application of DUoS charges to maintain competitive neutrality with transmission. As per SAPN's proposal, charges to standalone market generators connected to the distribution network should not prevent the efficient entry of generation, and should not put them at a competitive disadvantage to transmission connected generators.

Firm Power would support this equity principle. Without this exemption, distribution connected, large format standalone batteries, which have the potential to enhance export and import network capacity by charging during times of high DER generation and discharging at times of high demand consumption, would be unfairly disadvantaged compared to transmission connected battery storage. This would lead to battery storage being deployed in transmission networks rather than distribution networks, which could have otherwise benefitted end consumers by providing demand management services much closer to the source.

### **3. Using export pricing to create more efficient pricing signals for non-network service providers**

If the market for third party energy services or 'network balancing' was able to grow in a sustainable manner, non-network service providers will flow into the sector and the most competitively priced services will emanate. Sound commercial principles are required to generate demand for energy services in order to create these cost efficiencies without compromising DNSP service delivery.

DNSP's should be encouraged to observe existing ring-fencing rules and:

- Promote incentives for non-network service providers to provide export management services at all levels of their network;
- Procure these contracts from third parties instead of directly trying to upgrade their own assets and retail surplus capacity (this should be a last resort);
- Provide certainty of export tariff pricing over the life of an asset underpinned by an energy services contract i.e. 15-20 years, and
- Enable non-network service providers to obtain clear signals that DNSP's will not seek to compete with them in a RIT/D by providing a competitive (battery based) network solution.

Based on the number of DMIS projects created by DNSP's, and the value of the investments made to date, we would suggest the RIT-D and Demand Management Incentive Scheme (DMIS) has not delivered a productive quota of non-network solutions to the market. As has been offered in previous submissions, we would suggest there is a significant need to reform these schemes to encourage DNSP's to consider non-network solutions. The alternative is for network capital to be deployed into greater network augmentation and result in greater long-term costs to end consumers.

#### **4. Using export pricing to create more efficient solutions for consumers.**

Consideration should be given to energy consumers who live in apartments, do not maintain an ownership interest in an export capable PV system, and are therefore unable to benefit from two-way pricing for export services. Considering these consumers contribute to the cost burden of DNSP improvements to facilitate two-way electricity flow, they will not obtain benefit if there is not a material pass back of value to them via some mechanism.

Utilisation of third party contracted batteries connected at distribution level and located in regions with high PV penetration, enable existing export capable assets to obtain much higher utilization. Batteries can act as a load and effectively 'soak' the incremental solar export moving into the grid. This soak enables the existing capacity and integrity of the network to be preserved without the need for augmentation.

In addition to supporting the objectives of DNSPs, large batteries connected at HV level are also able to provide energy flexibility across a much broader profile of customer groups:

- By supporting export of not just households but large C&I customer solar systems,
- By "sharing" network assets with other users via DNSP directed dynamic connections, and
- By dispatching into peak loads to support customers not able to time shift or curtail load under a demand management or dynamic connection arrangement.

The Draft Rule clarifies that distribution tariffs may include positive and negative export charges for users. DNSPs should be required to achieve balance between positive and negative export charges, where practicable, and thereby incentivise non-network service providers to 'soak' DER generation and improve the utilisation of network assets.

Furthermore, we are supportive of the Draft Rule proposing to increase the individual and cumulative thresholds for tariff trials as a transitional arrangement over the next two regulatory periods. However, the requirements to include the trial network tariffs in the TSS developed as part of the next regulatory determination creates investment risks for non-network service providers, who are deploying capital into projects with an operational life that extends well beyond the next regulatory determination. To the extent non-network service providers have relied on trial tariffs to establish their services, they should be allowed to have the option to continue to use the trial tariff or switch to the TSS developed tariff as part of the next regulatory determination at their discretion.

**5. Interplay of export pricing with DUoS**

We would support development of a new alternative control export service, however it would be important to clearly define this service and separate the costs of providing export services from the costs of providing existing consumption-based DUoS services.

We also seek to understand how export pricing may interact with the negotiation of an Individually Calculated Tariff (ICT). We are aware existing DNSP tariffs are onerous in terms of when a load can operate in and around peak demand periods, with lock out arrangements and capacity charges utilized as the primary method of imposing negative price signals. It is important for any form of export pricing to reflect and reward the ability of a BESS to optimize around peak periods and operate both as a generator and a load.

Existing DNSP tariff arrangements impose DUoS charges on bi-directional technologies like batteries. By treating batteries in the same way as indiscriminate load instead of controlled or ‘dynamic’ loads, it imposes pricing which is not cost-reflective. As mentioned above battery technologies can ‘soak’ rooftop solar PV during the day, as well as inject power during the early evenings reducing stress on network assets. If however, batteries recharge during a peak period, whether or not the actual peak has materialized, and further whether the peak has achieved a constraining threshold on the given equipment, the battery will be penalized.

Table 1 below compares the annual network charges for a Transmission vs Distribution connected battery. It shows how DUoS in its current form continues to impose a major barrier on the implementation of battery projects and the capital efficient energy services they can offer networks. Export pricing could be used to off-set DUoS fees in particular by reducing or removing capacity charges for asynchronous technologies.

**Table 1 assumptions:**

- 100MW/200MWh BESS
- 2 cycles per day
- BESS used for standard operation i.e. Arbitrage and Ancillary Services

TARIFFTYPE	FIXED & USAGE	CAPACITY	TOTAL	TUOS	DUOS	CCF LEVY
DNSP	\$1,857,000	\$6,380,000	\$8,237,000	Liable	Liable	Liable
TNSP	\$0	\$0	\$0	Exempt	Exempt	Exempt

Firm Power is supportive of SAPN’s proposal to explicitly exclude large standalone generators (and batteries) from ongoing distribution charges. Further Firm Power seeks recognition and reward of the ability of standalone generators to meet demand with the highest level of asset utilization (as defined in clause 6.18.5(f)(2) of the NER) as well as optimizing locational benefits of distribution connected standalone generators much closer to the location of retail customers (as defined in clause 6.18.5(f)(3) of the NER.)

**6. Interplay of EBSS, DMIS, STPIS and export pricing**

Firm Power seeks to understand how export pricing may interact with the Efficiency Benefit Sharing Scheme, Demand Management Incentive Scheme and Service Target Performance Incentive Scheme for each DNSP.

Firm Power queries whether the electricity ‘supply’ conventions within the Service Target Performance Incentive Scheme (STPIS) apply to reliability and performance measures when considering bi-directional export pricing arrangements. Will pricing signals be built into STPIS which will obligate DNSP’s to provide customers and consumers with minimum standards for exporting their electricity to the grid? Further what percentage of revenue at risk will be offered by DNSP’s for ‘export supply enablement’.

Will STPIS based parameters be established for:

- a) Export reliability in terms of maintaining grid stability and connectivity for export
- b) Export availability (especially during periods of high solar output and high probability of curtailment by

AEMO<sup>1</sup>)

- c) Export capability where existing network assets are better utilized by a DNSP to benefit consumers and customers.

In terms of encouraging DNSP's to incentivize non-network providers to support export pricing objectives, Firm Power seeks to understand what provisions the AEMC has considered. If a non-network service provider could defer a network constraint from becoming an identified need, could the non-network service provider obtain access to:

- Negative export charges (via trial tariff or otherwise) for providing non-network export services and
- Some form of a DMIS minimum project evaluation scheme.

We would expect RIT-D's as being the market testing mechanism of last resort.

## **7. Supporting DNSPs to develop export pricing**

The mechanics of enabling DNSP's to fund non-network services in terms of OPEX also needs to be reviewed.

We would encourage the AEMC to consider that any gains made under the CESS by a DNSP should be allowed to be kept, even if it means there are greater operating expenses which would otherwise reduce the DNSP's EBSS benefits. In summary we would support DNSP's being rewarded for trading CAPEX with OPEX. Other avenues of reform may include:

- Capitalising expenses into the DNSP's Regulated Asset Base and/or
- Providing a pre-approval process for NSP's to secure funding for their projects and encourage an OPEX approach to the provision of network service under the Demand Management Incentive Scheme.

Firm Power queries whether large scale embedded generators are included in the EBSS definition change to Distribution Service End Users (Ref proposed changes to NER Clause 6.5.8(c)(1)).

There is a lack of definition as to how DNSP's could use (fast response) tariffs and dynamic connection agreements to encourage greater utilization of existing infrastructure. In the absence of this DNSP's will be encouraged to continue to increase expenditure on network infrastructure, which may only be fully utilized for short intervals each year. We are aware of several scenarios where the lack of definition is impeding update of dynamic connection agreements, for example:

- We have witnessed proactive customer engagement by DNSP's seeking to increase the uptake of dynamic connection agreements with little to low success due to the lack of long-term tariff certainty for existing customers, and
- We are aware of DNSP's potential to deliberately oversize substation equipment (including BESS) with the objective of renting capacity to third parties to materialize new long-term 'shared access' revenues.

Firm Power is supportive of a 'Dynamic Connection' arrangement where export tariff structures are based on different charges for different types of export including:

- Rewarding variable export capacity offered through a dynamic operating envelope,
- Rewarding the ability to offer capacity by acting as a highly responsive and reliable load, and/or
- Offering an incentive rebate (negative tariff) to customers when called upon by the DNSP to export in specified circumstances.

<sup>1</sup> [Microsoft Word - SA Technical Report Factsheet \(aemo.com.au\)](https://www.aemo.com.au/SA/Technical-Reports/SA-Technical-Report-Factsheet)