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Energy Security Target and Safeguard  
NSW Department of Planning, Industry & Environment

Via email: [energysecurity@environment.nsw.gov.au](mailto:energysecurity@environment.nsw.gov.au)

## Essential Energy submission to the Energy Security Target and Safeguard consultation paper

Essential Energy welcomes the opportunity to respond to the NSW Government's consultation paper on the Energy Security Target and Safeguard, as part of the NSW Electricity Strategy.

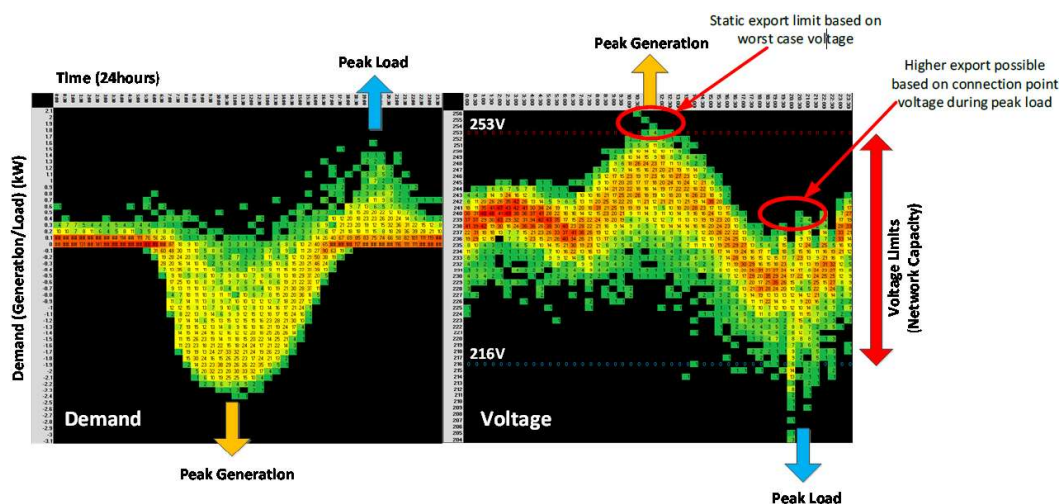
As the distribution network service provider that covers 95% of New South Wales and a state-owned corporation, Essential Energy is in a unique position to assist in the development of the Energy Security Target and Safeguard, and ensure that the most effective tools and programs are implemented to achieve the government's policy objectives. To this end, we have provided some comments into the proposed peak demand reduction scheme as well as some insights into other ways that energy security could be achieved.

Specifically, in the case of the Essential Energy's network, the problem is not peak demand but effective utilisation of distributed energy resources (DER) to defer or eliminate the need for future network investments to minimise whole of system costs. This submission focusses on better utilisation of DER and network assets, as well as insights into controlled loads and incentives.

### Utilisation

Essential Energy's network has the longest length of circuit and the lowest customer density in the NEM. The size of the network means that there are times when one transformer is required to connect one customer. The improvements in reliability standards over the last decade have meant that Essential Energy's network does not have a peak demand problem as such to respond to; it has problems with keeping voltage stable and this means limits are required on customer DER exports into the network. Essential Energy suggests that a broader focus on utilisation or optimisation of both network and DER assets, is more in the longer term interests of NSW customers, rather than a narrower focus on peak demand reduction.

As the level of DER has grown there are more constraints being placed on DER exports due to voltage issues – refer to the charts below. The left 'duck curve' shows how DER exports flow into the grid in the middle of the day (solar), and on the right, it shows the impact on voltage. Voltage needs to



remain within a steady range for system stability. Load shifting by customers into the middle of the day to act as a 'solar soak' is something that Essential Energy is investigating as part of tariff development. Electric vehicles and batteries are also included as part of the business' tariff reform work to encourage customer export and usage to assist in better utilisation of the network and DER assets.

However, in order to know what actions are beneficial in terms of optimising utilisation and peak demand reduction, some fundamental improvements in network data and capabilities are required. These capabilities include basic visibility of what is connected to the low voltage (LV) network, what energy is flowing, and where constraints are occurring. For Essential Energy, data from DER is currently received on a net metered energy 15/30 minute basis, with delayed collection through the billing process. Some of the improvements to visibility can come from network investment, but a lot of this data and capability could be accessed through partnerships where infrastructure is already deployed (such as smart meter data). Essential Energy suggests that any peak demand reduction schemes being developed, are done so cognisant of the national initiatives already underway such as the Distributed Energy Integration Program (DEIP) which aims to maximise the value of DER for all energy users and focuses on enabling the core capabilities that networks require to support these initiatives.

#### *Controlled load*

Controlled load is the oldest form of demand management - it has allowed distributors to defer investment by shifting these loads to off peak times – it has also been used in recent times as a method to stabilise the system when high exports from DER begin affecting the voltage. Essential Energy is concerned that there is a potential for retailers to game controlled loads already in place. If those customers with an existing controlled load tariff have their meter replaced (new smart meter), it could be considered 'new' controlled load.. Care needs to be taken so that retailers are incentivised to only add new controlled load, and not 'cannibalise' existing controlled loads.

#### *Incentives*

The NSW Government needs to be aware of other incentive schemes that may be affected by the introduction of a new peak demand reduction scheme. Incentives to assist in promoting demand management (and non-network solutions) are currently in place under the Australian Energy Regulators (AERs) Demand Management Incentive Scheme (DMIS) and the Demand Management Innovation Allowance (DMIA). These schemes aim to reduce building of additional infrastructure by networks in favour of ways to reduce customer demand on the grid. In addition, the Independent Pricing and Regulatory Tribunal (IPART) is currently reviewing the reliability standards for NSW distributors. As part of this review, incentives for distributors to reduce constraints for DER exports are being assessed. Essential Energy recommends that the outcomes of this review is also taken into account (a draft report in due to be published in September 2020). The introduction of new incentives for peak demand reduction should be modelled in light of other incentives available to ensure the modelled benefits are realised and that duplication is reduced.

Essential Energy is supportive of the initiatives of the NSW Government in promoting the Energy Security Target and Safeguard, however, suggests that a broader objective of working towards better utilisation of network assets and DER, rather than a narrower focus on peak reduction, would be more beneficial.

We would welcome the opportunity to discuss these issues in more detail. Please contact Natalie Lindsay, Head of Regulatory Affairs on 02 6589 8419 or via [natalie.lindsay@essentialenergy.com.au](mailto:natalie.lindsay@essentialenergy.com.au).

Yours sincerely



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