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By Engage Victoria website:
<https://engage.vic.gov.au>

Energy Makeovers Pty Ltd – submission due 13th September 2019
Electricity Distribution Code Review Issues Paper

To Whom It May Concern,

Please find attached Energy Makeovers' submission in relation to the ESC's issues paper in relation to the Electricity Distribution Code review.

Please do not hesitate to contact me
information or clarification.

should you require any further

Yours faithfully,

A handwritten signature in black ink, appearing to read "Bryn Dellar", with a stylized flourish at the end.

Bryn Dellar
Executive Chairman
Energy Makeovers Pty Ltd

Attachment:

Energy Makeovers' submission: Electricity Distribution Code Review Issues Paper

Context for Energy Makeovers submission

Energy Makeovers is a leading energy efficiency and solar storage company with more than 10 years focused on carbon abatement in the energy chain to mitigate the effects of climate change.

As part of our solutions portfolio, Energy makeovers provides behind-the-meter solar storage systems to residential, small business, commercial and industrial customers throughout Victoria.

Energy Makeovers strongly supports the Victorian Government's policy position to reduce green-house gas emissions in the energy sector, including various energy efficiency schemes and the accelerated transition to a renewable-based energy system. This includes the deployment of 650,000 solar installations over the next 10 years.

Energy Makeovers also supports the ESC's intent of ensuring its regulatory framework supports the take-up and operation of BTM solar storage and new business models in a manner that supports grid stability and customer safety.

General comments regarding Electricity Distribution Code

Traditional customer interactions that distribution business have include:

- Planned customer outages
- Unplanned customer outages
- New Connections

There are a range of customer protection requirement and service level obligations and technical requirements that currently exist within the Distribution Code.

Energy Makeovers as a principle, supports the continued codifying of these obligations within a Victorian Electricity Distribution Code, whilst taking into account:

- Avoiding unnecessary duplication with existing Australian Standards and/or national regulatory instruments

- Harmonisation where possible of definitions within the National Electricity Rules and/or made by the Australian Energy Regulator
- New and established digital communication channels with that enable (near) real-time customer engagement
- Of leveraging the deployment of the smart meter technology that has occurred in Victoria

Renewable behind-the-meter generation and battery storage

An ever-increasing level of customer interaction with distribution businesses is occurring in relation to the connection of renewable embedded generation such as behind-the-meter installation of solar and/or storage systems.

However, there are few if any specific customer service obligations and/or service level requirements for Distribution Businesses relating to the connection renewable embedded generation and storage.

Energy Makeovers' experience is that there are inconsistent approaches taken by the five Victorian distribution businesses and sometimes poor customer service and outcomes are experienced. This includes:

- Inconsistency in application processes
- Lack of transparency of the key network information that may constrain a solar connection
- Inconsistent and often excessive timeframes in assessing solar connection applications
- Variable transparency of application status

Larger residential, small-business and medium commercial customer segments can be poorly served. This relates to typically customers seeking to install solar systems in the 15-100kW size range, utilising AS4777 compliant inverter-based systems.

Energy Makeovers believes there is a strong case for increased emphasis within the Distribution Code on consistent and more flexible technical standards and new service level requirements relating to the connection of behind-the-meter renewable embedded generation and/or battery storage.

Voltage standards

In recent years, electricity distribution networks have become more distributed and dynamic in nature, impacting network voltage. The local network voltage level is often the key issue in distributors constraining the connection of renewable embedded generation.

At the same time commercial/industrial equipment and customer appliances are generally more robust and tolerant of short-term voltage excursions.

In this context, the current fixed parameter voltage standards within the Distribution Code may no longer be appropriate.

Energy Makeovers supports a review of distribution network voltage standards and the transition to the Australian Standard AS61000.3.100. This standard has been adopted by several jurisdictions outside of Victoria.

AS61000.3.100 provides flexibility of voltage limits, utilising a statistical approach. Adopting such a standard in Victoria should facilitate the capability for distribution businesses to connect increased amounts renewable embedded generation whilst minimising network investment through system augmentation.

Similarly, increased flexibility of voltage standards should also apply to customers' embedded generator configurations.

Smart metering monitoring

The local network voltage level is often the key determining factor as to whether a renewable embedded generator can be connected and/or will remain connected when operating.

Traditionally, distribution businesses have been required to only install limited voltage monitoring equipment across their network and hence information on local voltage profiles is limited.

Evidence of distribution businesses non-compliance with voltage standards at a local network level is often difficult to ascertain.

Energy Makeovers understands that several distribution businesses are already utilising some limited forms of remote voltage monitoring via their smart metering networks.

Energy Makeovers supports an increased obligation on distribution businesses to increase the granularity of voltage monitoring across their networks. This could facilitate:

- Increased transparency of distribution business voltage standard non-compliance
- Improved timeliness of the assessment of embedded generation connection applications
- The resolution of disputes in regard to unplanned disconnection of customer's embedded generation because of network voltage excursions

Minimum technical requirements for embedded generation

Energy Makeovers supports consistency of technical requirements for embedded generation across the 5 Victorian distribution businesses and the Distribution Code is the relevant instrument for technical requirements to be set out.

Currently there is some variance of requirements across the distribution businesses and technical requirements are often set out in a variety of documents. This results in increased system equipment and project management and installation costs to ensure technical compliance with each distribution business.

However, care should be taken to avoid duplication or inconsistencies of existing Australian standards such as AS4777, or any technical requirements set out by the federal Clean Energy Regulator.

Technical requirements that could be aligned across Victoria could include various requisite configuration parameters such as:

- Over-voltage and under-voltage setpoints
- Over-frequency and under-frequency setpoints
- Rate of change of frequency
- Vector shift
- Re-connection delay times
- Power-factor management at voltage extremes

Customer Service & Guaranteed Service Levels

Energy Makeovers supports the introduction of a variety of Customer Service obligations and guaranteed service levels within the Distribution Code in relation to the connection of renewable embedded generation and battery storage.

Energy Makeovers recognises that the complexity (and hence effort and time required) for a distribution business to assess a solar connection application may increase with system size. However, segmentation of treatment is inconsistent across the distribution businesses.

For example, most Victorian distribution businesses will quickly and/or automatically assess residential or small business -sized solar systems seeking to export generation up to 10kW per phase. However, one distribution business limits their simple assessment approach at 5kW per phase above which they indicate a 65 day turn-around which has often ballooned out to be many months.

Extended delays by distribution businesses completing their assessments can result in real economic loss to customers if their solar installation is delayed into the next calendar year with the subsequent loss of value of small-scale technology certificates (STC).



Energy Makeovers suggests distribution businesses should be obligated to provide a decision for solar connection applications:

- ≤10kW per phase; within 3 business day.
- >10kW per phase; within 20 business days

Our experience has shown that some Victorian distribution businesses can achieve these service levels, hence they are realistic obligations.

Availability of distribution network information

A key limiting factor in determining whether a solar connection application will be accepted is the current amount of solar generating capacity installed that is connected to the local distribution transformer.

At least one distributor has published the threshold as being 30% for a distribution customer supplying multiple customers and 50% for distribution transformers supplying a single customer.

However, there is no mechanism for a customer to quickly ascertain the available capacity on the distribution transformer they are connected to. The only recourse is to make a solar connection application that may cost up to \$2,500 and sometimes wait more than 65 days for a response.

To allow customers to quickly assess solar connection options, Distributors should be obligated to provide a customer with an initial assessment of the current solar loading capability of the distribution transformer they connected to within 1 business day.