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Ms Sarah Lau
Australian Energy Market Commission
PO Box A2449
Sydney South NSW 1235

Electronic lodgement: ERC0148

National Electricity Amendment (Changes to normal voltage) Rule 2012

Dear Sarah

United Energy (UE) welcomes the opportunity to respond to the Australian Energy Market Commission (AEMC) Consultation Paper titled, National Electricity Amendment (Changes to normal voltage) Rule 2012.

UE cannot recall any customer requests to change the normal voltage levels and hence does not consider that there is a need to change the National Electricity Rules. UE would normally consult with any large customers who may be impacted by a change in normal voltage levels, rather than consulting with a large number of small, low voltage customers.

UE is not supportive of a rule change to accommodate this need for additional consultation with a consequence of potentially delaying new connections. If any rule change were to proceed, UE suggest that this be limited to connections on the transmission system.

UE has responded to most of the questions in the Attachment on the basis that any proposed amendments may impact connections on the distribution or transmission network.

If you wish to discuss any matters relating to this response please do not hesitate to contact me on 03 8846 9856.

Yours sincerely

Verity Watson
Manager Regulatory Strategy

Attachment

Question 1 Scope of the problem

1. What are some of the potential triggers that give rise to a change in the normal voltage level?

2. In the absence of consultation:

   (a) Could a change to the normal voltage level impose significant administrative, capital, and operational costs on generators?

   (b) Could a change to the normal voltage level cause existing market participants to exit the market? Could it create barriers to entry for new entrants?

   (c) Are there likely to be impacts to system reliability and security if the normal voltage level is changed?

3. How often is the normal voltage level likely to be changed?

4. How would a change to the normal voltage level impact the following

parties:

   (a) Generators

   (b) New entrants

   (c) AEMO

   (d) Large users

   (e) NSPs

   (f) Broader market?

5. Do connected parties/connection applicants have provisions in their connection agreements that obligate NSPs to notify them of any planned changes to the normal voltage level? If not, is this likely to require changes to connection agreements?

6. Do NSPs consult informally with affected parties in the event that the normal voltage level needs to be changed? If so, how widely do they consult? Do NSPs use the provisions contained within clause 5.3 of the NER as a guide?

7. Do generators take into account potential changes to normal voltage within 10% higher or lower of the nominal voltage level in connecting to a network?

8. Would consultation requirements:

   (a) provide benefits to connected parties, and if so, what would be the nature and value of these benefits?

   (b) create material time delays to process new connections?

   (c) improve system reliability and security relative to the current arrangements?

9. How does AEMO currently approve changes to normal voltage?

A change in normal voltage level could be triggered by any of the following:

- Network augmentation;
- Reconfiguration of the network;
- Load increases;
- Generator connections;
- Load switching; or
- Customer request to reduce or increase normal voltage levels.

The Electricity Distribution Code in Victoria requires distributors to maintain certain standard nominal voltages and to have steady state voltage variations limited to +/- 10%, +/-6%, +10%/-6% of nominal voltage depending on the connection voltage level. Where a customer's property is damaged due to voltage variation outside of these limits, the distributor may be liable to pay compensation.

UE's electricity network including protection equipment and switchgear is set to operate within a voltage variation of +10%/-6% for customers connected to network below 1kV.

Where a distributor agrees to a connection with a customer for a normal voltage that is higher than the nominal voltage, the rule proposal suggests that the voltage variation is based on the new normal voltage agreed as opposed to the nominal voltage of the network.

Where there is one customer in this situation on a distribution substation then the distributor can change the tap settings on the transformers and enable the different normal voltage for the customer.

However, where there is more than one customer on the distribution substation then the distributor would need to advise all other customers of the potential for higher temporary over voltage and different protection equipment may be required on the network or at the other customers premises. Higher voltage equipment is more expensive and can result in higher costs to the distributor or the other impacted customers and may increase the cost of network services for all customers.

Where customers have backup generators set to kick in at certain over voltage limits there is potential that these customers may be impacted.

Where a customer is synchronised with the distributor network, a change in the under/over voltage levels would require a change in the settings of the equipment at the customers' premises. If there were impacts on a customer who was already connected then it may be difficult to gain agreement to any changed connection agreement that resulted in an adverse impact for them created by another customer. In this situation the customer already connected has not created the altered TOV issue and would be unlikely to agree to any change that was adverse for them.

The distributor would need to consult with other large customers and generators who may be impacted as the distributor does not have a detailed knowledge of all customer equipment.

In the case of UE, the normal voltage level is rarely changed. When a new zone substation is commissioned, UE re-assess all the normal voltage levels on the network and tries to replicate the normal voltage levels that existed before the commissioning so that there will be minimal impact for customers.

UE does not recall any customer requests for normal voltage changes hence UE does not consider a change to the NER is required.

UE connection agreements currently do not include a clause requiring the distributor to notify the customer of any planned changes to the normal voltage level. Given we can't recall any requests to change normal voltage level there is little need for this clause. Where the UE network is unable to mirror

previous voltage levels, UE does consult with all high voltage customers impacted and reviews all distribution tap settings on transformers supplying low voltage customers.

As mentioned above UE consults with large customers connected on the HV network who are impacted. NER clause 5.3 is about the process to connect to the network more so than changes to an existing connection resulting from another customer's connection or changed connection.

Increasing levels of solar photovoltaic panels is increasing the voltage levels on the low voltage network. Gradually the distribution network will need to be reconfigured to bring voltage levels back to the previous/earlier state. UE would undertake this activity overtime without consultation with residential or small customers as they would have little interest or understanding of such network activities.

Generators are made aware if the network is operating at a different normal voltage. This allows generators to set their over voltage level to cater for a higher TOV so they are not disconnected.

Parties already connected, where impacted would appreciate consultation, however if already connected parties need to make changes to their protection settings they are likely to only undertake this work at a time that is suitable to their business.

If already connected parties needed to agree to the changes or the change involved amending connection agreements, then there is potential that this may create time delays for the party seeking connection.

If connected parties are not consulted, there is potential that existing customers may be adversely impacted and any higher TOV caused by the new connecting party seeking a higher normal voltage could result in the existing customer's protection equipment tripping their equipment off the network.

UE advises AEMO our normal voltage set point preference at the transmission connection asset level. AEMO reviews and approves the normal voltage. Any change to the normal voltage at the sub transmission level only impacts one customer.

Question 2 Assessment of proposed solution

1. Given the current industry practice, is there a need for a formal consultation process within the rules?
2. Is the Proponent's proposed solution likely to provide a timely and efficient consultation process?
3. If additional consultation is required, who should NSPs have to consult with and what should be the timeframe for this consultation?
4. If additional consultation is required, do NSPs and AEMO need additional guidance on what factors they should consider in deciding whether changes to normal voltage should be made and the timing for the approval of changes to normal voltage?
5. Do stakeholders have views on any alternative solutions which could be used instead of clause 5.3 of the NER?

Given current practice and the low volumes, UE consider the levels of consultation being undertaken are appropriate. UE prefers that the nominal voltage did not change, hence impacting the TOV and other customers. UE do not support the rule change and believe it is unlikely to lead to timely connections given the potential to impact existing customers.

UE has reservations that additional rules requiring consultation to occur with certain parties and to provide a timeframe for consultation would be beneficial. This is only one aspect of the potential impact of a different normal voltage and TOV level. Impacts on the distribution network and large customers

may result in a need to change equipment settings or purchase and install new equipment, these arrangements and changes to connection agreements will take time to negotiate and implement.

UE understands that AEMO approval is only required at terminal stations and not distribution zone substations.

If all other large customers impacted by a change in the normal voltage level are easily able to accommodate the higher TOV then the connecting party can have their preferred normal voltage, no other guidance is required.

There is potential that connection timeframes may be delayed. Consultation with other impacted customers will take time while existing customers consider the impacts on their plant and equipment. It may be difficult for a distributor to justify why impacted customers should change their equipment to accommodate a new connection.

UE prefers that the TOV be linked to nominal voltage levels and linked to equipment ratings for equipment on the distribution network or at the customer's premises. This provides more certainty and continuity for all parties.

The proposed amendment to the normal voltage level definition does not appear to capture a need to consult with other impacted customers. If any rule change was to proceed, UE suggest that it be limited to connection on the transmission system.