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System Operator

By email: system.operator@transpower.co.nz

Connected Asset Commissioning, Testing and Information Standard

Thank you very much for the opportunity to provide feedback on the System Operator's consultation document *Connected Asset Commissioning, Testing and Information Standard* (CACTIS). This submission is not confidential and can be published in its entirety.

Vector is supportive of the proposed CACTIS and welcomes the improved clarity of the information required by the System Operator to meet its principal performance obligations.

The proposed CACTIS introduces a new requirement for connected asset owners, such as Vector, to provide indications and measurements of controllable load. The Code defines controllable load as "…*the quantity of resources (in MW) that a connected asset owner estimates will be available for use by the system operator under a grid emergency*…". There is a concern that this definition does not specify whether the controllable load must be under the direct control of the connected asset owner, or whether it must also include load being managed by (for example), a retailer. Therefore, it is suggested that this distinction be clearly stated in the CACTIS requirements.

Our responses to the specific consultation questions are attached as Appendix A.

Kind regards

Bas van Esch
Market Strategy / Regulation

Appendix A: Responses to consultation questions

Question		Comments
Q1.	Do you agree that failing to provide key information will have an impact on the commissioning of an asset, power system security and the system operator's ability to meet the PPOs and dispatch objective?	Yes
Q2.	Do you agree with the proposal to mandate minimum time frames for the activities in Chapter 1 of the proposed CACTIS?	Yes
Q3.	Do you agree with the proposed time frames for asset owners to submit a commissioning plan and for the system operator to review them?	Yes Depending on the technology being deployed, and the circumstances it is being deployed under, there should be room for exceptions. For example – Large scale emergency diesel generation should have shorter time frames.
Q4.	Do you agree that requiring asset owners to use a standard commissioning plan template would help streamline the preparation and review process?	Yes
Q5.	Do you agree with the proposed time frames for asset owners to submit asset capability statements at the planning, pre-commissioning, and final stages of the commissioning process, and for the system operator to review them?	Yes Depending on the technology being deployed, and the circumstances it is being deployed under, there should be room for exceptions. For example – Large scale emergency diesel generation should have shorter time frames.
Q6.	Do you agree that formalising the asset capability statement assessment requirements will provide clarity for asset owners?	Yes

Q7.	Do you agree with the proposal to formalise requirements for asset owners to provide urgent or temporary changes to asset capability statements?	Yes
Q8.	Do you agree with the proposed time frames for asset owners to submit m1 and m2 models, and for the system operator to review them?	Yes Depending on the technology being deployed, and the circumstances it is being deployed under, there should be room for exceptions. For example – Large scale emergency diesel generation should have shorter time frames.
Q9.	Do you agree that the updated modelling requirements are necessary to reflect the increasing complexity and changing generation mix within the New Zealand power system?	Yes
Q10.	Do you agree that the system operator needs TSAT and PSCAD software models to conduct the studies needed to maintain power system security and meet the PPOs?	Yes There is a question on the detail required though. If a generator is embedded deep within a distribution network, there is little use for the SO to model any sort of voltage responses since it is a localised phenomenon.
Q11.	Do you agree with the proposed time frames for asset owners to submit a final connection study report, and for the system operator to review it?	Yes Depending on the technology being deployed, and the circumstances it is being deployed under, there should be room for exceptions.
Q12.	Do you agree with the proposed approach of using RMS studies for scenario screening and EMT studies for detailed fault ride through analysis of IBRs?	Yes
Q13.	Do you agree with the proposal to require asset owners to repeat fault ride through studies when control system	Yes

	parameters are modified during or after commissioning?	
Q14.	Do you support the proposed process for accessing encrypted models from other asset owners when needed for fault ride through studies?	Yes
Q15.	Do you agree with the proposed time frames for asset owners to submit a commissioning plan and for the system operator to review it?	Yes Depending on the technology being deployed, and the circumstances it is being deployed under, there should be room for exceptions.
Q16.	Do you agree with the proposed time frames for asset owners to submit a final engineering methodology, and for the system operator to review it?	Yes Depending on the technology being deployed, and the circumstances it is being deployed under, there should be room for exceptions.
Q17.	Do you agree with the proposed testing requirements for wind, solar photovoltaic and BESS technologies?	Yes
Q18.	Do you agree that the system operator needs the additional data identified in this section to maintain power system security and meet the PPOs?	Yes
Q19.	Do you agree with the proposal to use high-speed monitoring data to verify asset performance and reduce the need for routine testing of generating stations between 10 MW and 30 MW?	Yes
Q20.	Do you agree with the data quality requirements as described in Chapter 9 of the proposed CACTIS for high-speed monitoring and operational reporting?	Yes
Q21.	Do you currently have the ability to provide the additional information proposed in the draft CACTIS? If not, when do you expect to be able to meet these requirements?	No It is unclear on when the requirements apply. Can we please get clarity on how to treat:

	1. Generation plants over 1MW made up of multiple inverters – does this qualify as a single unit over 1 MW? 2. Primarily backup generation that may operate in parallel under contingency conditions. Do the same rules apply? 3. If EMT and RMS models are required for embedded generation, the SO would need similar models for the distribution network in order to show how plants react to events on the transmission network. These models do not exist for the network at Vector, 4. There is a requirement around transformer tap changer testing – is this only for the generation plants? Vector is familiar with testing at the point of connection with TP, but not for other equipment embedded deeper withing the distribution network. **Connected asset owner specific requirements** Vector is currently unable to provide the indications and measurements listed in Table J but is working with the System Operator to develop some of these functionalities. Note that hot water load, currently armed for interruptible load, is not directly metered therefore cannot be provided as actual. Also, the proposed accuracies of ±2-5% are too low given the variability of this type of controllable load.