MINUTES OF CQTG MEETING 14

Held on Friday 24 October 2025, 9:30am – 12pm
Electricity Authority office – Wellington

Members present:	Grant Benvenuti (Chair - acting), Graeme Ancell, Matt Copland, Brent Duder-Findlay, Brad Henderson, Stuart MacDonald, Mike Moeahu, Rob Orange, Jon Spiller, Philip Wong Too.
Apologies:	Sheila Matthews, Barbara Elliston, Stuart Johnston
In attendance:	Phillip Beardmore, Otis Boyle, Rob Mitchell, Amelia Tan, Nyuk-Min Vong (Vong), Kevin Wronski

1. Introduction

1.1 The Chair welcomed attendees to the fourteenth meeting of the Common Quality Technical Group (CQTG). A quorum was established, with nine of the twelve members present.

1.2 The meeting's purpose was to complete the system operator's presentation of the 'Connected Asset Commissioning, Testing and Information Standard' (CACTIS) agenda item that was held over from the CQTG meeting earlier in the week (Monday 20 October). Grant thanked members for making time to have this morning's meeting at such short notice.

2. CACTIS

2.1 Kevin and Vong continued their presentation on the CACTIS. Key points from the CQTG's discussion are summarised below.

2.2 Test plan requirements

(a) The CQTG noted the reactive power threshold for asset group 2 should be in mega Volt-Amperes reactive (MVAr), not megawatts (MW).

Action Item **14.1: Clarify that the reactive power threshold for asset group 2 is 10MVAr not 10MW.**

2.3 Testing requirements

(a) The CQTG queried whether the CACTIS would apply only to static synchronous compensators (STATCOMs) owned by network companies. The system operator clarified the intent is for the CACTIS to apply to STATCOMs owned by transmission grid owners and all transmission-

connected customers (ie, distributors and direct connect consumers), noting that oversight of non-grid owner entities is a new regulatory focus.

(b) There was discussion over whether to require testing for devices installed in the past 2–3 years. The CQTG recommended using language consistent with the grandfathering provisions in the frequency and voltage Code amendment proposals, where grandfathering applies to existing assets without the capability to comply. The CQTG noted STATCOMs would be subject to the modelling requirements in the CACTIS, as they are classified as asset group 2.

Action Item **14.2: The Authority to draft the Code clauses on grandfathering common quality information obligations, so as to link an existing asset's grandfathering status to its capability to comply with the Code obligation – ie, per the grandfathering provisions in the frequency and voltage Code amendment proposals.**

2.4 Operational communication requirements

(a) The CQTG agreed 'best endeavours' has a legal interpretation that is relatively onerous – requiring asset owners to meet an obligation regardless of cost. In contrast, a 'reasonable endeavours' standard would mean that cost could be taken into consideration when an asset owner was needing to meet an obligation. The CQTG recommended the system operator seek legal advice and consider replacing references to 'best endeavours' in the CACTIS with 'reasonable endeavours'.

Action Item **14.3: System operator to consider using 'reasonable endeavours' instead of 'best endeavours' in the CACTIS.**

2.5 High-speed data monitoring requirements

(a) The CQTG noted high-speed monitoring could be expensive for some existing generating stations, especially where the monitoring would need to be at the generating unit (in situations where the generating unit connected to the network). The CQTG noted it could be extremely difficult or perhaps even impossible, to install high-speed monitoring in some existing generating stations due to physical layout constraints.

(b) It was suggested the system operator look at the extent to which high speed monitoring is required – eg, monitor one generating unit where all generating units are identical, or monitor the bus to which several generating units are connected.

(c) It was noted Transpower, as a transmission grid owner, has phasor measurement units (PMUs) located around the transmission grid and will be installing more in the future (although not at every substation). The new PMUs will monitor up to 10Hz. These PMUs will be useful in identifying which generating stations are oscillating against each other.

2.6 High-speed data monitoring and testing

(a) The CQTG noted the system operator would need to provide good guidance on how high-speed data monitoring could be used for routine

testing. Otherwise, asset owners would be conservative and schedule routine testing regardless. The system operator explained it is happy to receive industry input on the necessary changes to its testing guidelines.

Action Item **14.4: The system operator to include in its periodic testing guidelines guidance on how high-speed data can be used for periodic testing.**

2.7 Data submission

(a) The system operator noted consultation feedback received on the draft CACTIS was that common industry formats should not be too onerous. The CQTG discussed the issue of time stamping. There was general consensus that industry participants do not like changing the clocks in some of their generating stations. Alternatives such as New Zealand standard time or coordinated universal time (UTC) were discussed. The approach used by the Australian Energy Market Operator (AEMO) was pointed to, where time does not change because of daylight savings.

(b) The system operator noted it was open to accommodating generators not changing their clocks (eg, using NZ standard time), including converting data (eg, changing UTC+12 to UTC+13). However, the system operator would need to investigate the cost of this, particularly because the system operator needs to accommodate daylight savings in respect of market offers.

Action Item **14.5: System operator to investigate the option of a uniform standard for use in timestamping / data recording for the New Zealand power system and electricity market.**

2.8 Connection study requirements

(a) In response to a query from a CQTG member, the system operator explained that engineering judgment informed by the results of root mean square (RMS) studies would be used in determining the scenarios / contingencies that needed to be run in electromagnetic transient (EMT) studies.

(b) The CQTG noted the incremental effort for EMT studies is 3–4 times the effort for PowerFactory studies. There was some concern about relying on engineering judgment rather objective criteria, as engineering judgment would mean there was always a need for discussion with the system operator rather than a discussion being triggered by certain criteria (eg, a minimum short circuit ratio). A self-assessment by the asset owner based on objective criteria would help to remove bottle necks. It was suggested that the available fault level requirement used by AEMO could be used as an initial screening tool.

(c) In response, the system operator noted the difficulty in defining a set of objective criteria that applied across many different power system scenarios, and across different technologies (eg, grid following inverters and grid forming inverters). The system operator and asset owners could be placed in a situation where the objective criteria said EMT studies

were not required but the system operator found reason for EMT studies to be undertaken based on its analysis of the RMS studies.

(d) The system operator highlighted that New Zealand's power system is in a transition period at present, and the system operator is concerned about things going wrong on the power system during this transition. The system operator recommended asset owners talk to the system operator early in their commissioning process. The CQTG agreed the system operator should incorporate in its commissioning guideline a recommendation that asset owners / developers submit draft studies to the system operator three months prior to the commissioning date.

10.52am Stuart MacDonald left the meeting.

Action Item 14.6: System operator to incorporate in its commissioning guideline a recommendation that asset owners / developers submit draft studies to the system operator three months prior to the commissioning date.

2.9 Sharing models

(a) When a post-event investigation takes place, the system operator will lead the investigation. The CQTG noted that vendors could find it difficult to fix modelled control interactions because only the system operator has access to the models of the different asset owners.

(b) It was suggested that a model developed by the University of Monash in Australia may be a way forward on this issue. The University of Monash has developed a model that an asset owner could run against the wide area power systems computer aided design (PSCAD) models to understand the control interaction issues. Once these studies were done, the modelling could be shared with other asset owners without any intellectual property restrictions.

2.10 Review time frame

(a) The system operator noted the CACTIS specifies delivery times rather than start times. The CACTIS does not require the provision of drafts of the deliverables required in the commissioning process.

(b) In response to a query from a CQTG member, the system operator confirmed that the connection study report is like an overarching summary report.

11–11.05am Short break.

2.11 Modelling requirements

(a) There was agreement amongst various CQTG members that PowerFactory and PSCAD plant-specific models are the norm for new connections. However, some concern was expressed about the transient security assessment tool (TSAT) model coming into the asset owner's area of responsibility because tuning the model requires tuning against other asset owners' assets. It was noted that modelling effort does not scale linearly with the number of models. Finding a bug in one study

requires re-running or re-validation of other studies, which quickly adds up to a lot of studies when there are several models.

(b) The system operator explained it is trying to minimise the number of studies that asset owners need to undertake. The system operator considers that, looking forward, some type of oscillatory assessment will need to be included in the system operator's control rooms to assist in managing oscillatory issues in real time, including running simulations for any fixes to oscillatory issues. The system operator is collaborating with PowerTech over the conversion of TSAT to the small signal stability assessment tool (SSAT). Using SSAT would enable the screening out of some contingencies and scenarios, thereby reducing the number of EMT studies asset owners would need to do.

(c) A CQTG member proposed the creation of a contract template specifying the system operator's modelling requirements that asset owners could share with original equipment manufacturers (OEMs). This template would need to cover model requirements over the life of the asset. Such a template would reduce the extent to which asset owners 'reinvent the wheel' in their contract negotiations with OEMs, and result in more consistency across asset owners in how they approach modelling requirements with OEMs.

(d) There was general agreement with this proposal. The CQTG noted its preference was to not mandate contractual terms in the Code. An option would be for the modelling-related terms in the contract template to be appended to the system operator's modelling guidelines. The Code could place a 'reasonable endeavours' obligation on asset owners to include these terms in their contracts with OEMs, but asset owners would retain the flexibility to vary from the terms if this was necessary.

(e) The CQTG agreed the contractual terms should include escrow arrangements. Putting models in an escrow account provides asset owners with access to the models in the event the OEM ceases to exist.

Action Item	**14.7: Liaising with the Authority, the system operator to work with asset owners and OEMs to prepare contract template terms relating to the provision of models by OEMs. Include escrow terms.**

(f) The CQTG considered an important issue was what happened if issues were identified when models were validated (eg, validating the TSAT model against the PSCAD model). The system operator suggested the most efficient approach would be for the system operator to liaise directly with the relevant OEM, while keeping the asset owner informed.

(g) The Authority noted the Code can only regulate New Zealand entities, so asset owners have ultimate responsibility for modelling-related Code obligations.

(h) In response to a query from a CQTG member, the Authority advised missing a timeframe requirement in the CACTIS would not be a breach of the Code if the CACTIS provided for timeframes to be varied by agreement between the asset owner and the system operator.

2.12 Cost recovery

(a) The CQTG supported the system operator undertaking some studies (eg, EMT fault ride through studies) and model benchmarking (eg, TSAT model benchmarking) on behalf of asset owners, on a cost recovery basis.

(b) The Authority noted it would need to consult on a possible cost recovery mechanism.

Action Item **14.8: Include in Part 8 of the Code a cost recovery mechanism for the system operator to do studies and model benchmarking on behalf of asset owners.**

2.13 Model accuracy

(a) The CQTG agreed it would be sensible to keep model accuracy requirements in the system operator's modelling guidelines, rather than in the CACTIS. This was because some concessions around model accuracy will inevitably be required, and having the requirements in the modelling guidelines provides more flexibility around the granting of these concessions on a case-by-case basis.

3. AOB

3.1 The next CQTG meeting has been scheduled for Wednesday 3 December 2025. This will be a short, online meeting to discuss the second tranche of Code amendment proposals covering Issues 6 (information) and 7 (Code terminology).

3.2 The meeting closed at 11.48am.

Summary of outstanding action points

No.	Action	Who	Status
5.15	• Authority to consider the appropriateness of including in the Code a new definition 'generating system'. **Update:** This is now included in the hybrid stations/BESS AOPO work.	Authority	In progress
7.2	• Voltage issue: Authority to consider clarifying the terms "synchronised", and "available for dispatch" in clause 8.23 of the Code.	Authority	In progress
7.7	• Voltage issue: Authority to consider submitters' concerns about the potential costs of Option 2 as part of evaluating the option's benefits and costs.	Authority	In progress

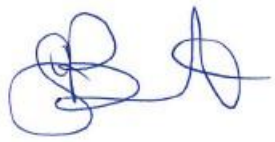
7.12	• Harmonic issue: Authority to develop harmonics options 1 and 2, discuss with the harmonics sub-group, and present a draft options consultation paper to the CQTG in Q1 2026.	Authority	In progress
8.11	• Authority to elaborate (under FSR-007 in the first tranche of Code amendment proposals covering Issues 6 (information) and 7 (Code terminology)) that further clarification of how clauses 8.17 and 8.19 would apply to BESS will be provided in the DIBR. **Update:** This is now included in the hybrid stations/BESS AOPO work rather than the DIBR	Authority	In progress
9.6	• Authority to further develop Alternative 1 for the co-ordination of reactive power flows through GXPs, to establish a bilateral information-sharing framework between the system operator and distributors.	Authority	Not started
9.9	• Authority to clarify the definition of “idle” in relation to BESS AOPOs, and to clarify the voltage AOPOs when in standby mode. **Update:** This is now included in the hybrid stations/BESS AOPO work.	Authority	In progress
12.1	• Authority to consider an external peer review on the system strength work.	Authority	Not started
13.1	• Authority to consider incorporating the CQTG’s feedback into the frequency-related decision paper.	Authority	In progress
13.2	• Authority to consider incorporating the CQTG’s feedback into the voltage-related decision paper.	Authority	In progress
13.3	• Authority to consider incorporating the CQTG’s feedback into the information-related decision paper.	Authority	Not started

13.4	• System operator to consider incorporating the CQTG's feedback into the CACTIS.	System operator	In progress
13.5	• Authority to set up an online meeting to consider the remainder of the system operator's CACTIS presentation.	Authority	Complete
14.1	• Clarify that the reactive power threshold for asset group 2 is 10MVAr not 10MW.	System operator	
14.2	• Draft the Code clauses on grandfathering common quality information obligations, so as to link an existing asset's grandfathering status to its capability to comply with the Code obligation – ie, per the grandfathering provisions in the frequency and voltage Code amendment proposals.	Authority	
14.3	• Consider using 'reasonable endeavours' instead of 'best endeavours' in the CACTIS.	System operator	
14.4	• System operator to include in its periodic testing guidelines guidance on how high-speed data can be used for periodic testing.	System operator	
14.5	• Investigate the option of a uniform standard for use in timestamping / data recording for the New Zealand power system and electricity market.	System operator	
14.6	• System operator to incorporate in its commissioning guideline a recommendation that asset owners / developers submit draft studies to the system operator three months prior to the commissioning date.	System operator	
14.7	• Liaising with the Authority, the system operator to work with asset owners and OEMs to prepare contract template terms relating to the provision of models by OEMs. Include escrow terms.	System operator	
14.8	• Include in Part 8 of the Code a cost recovery mechanism for the system	Authority	

	operator to do studies and model benchmarking on behalf of asset owners.		

Confirming the CQTG has approved these meeting minutes are a true and correct record.

Dated this 29 day of January 2026



Grant Benvenuti

Chair (Acting)