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Meeting Summary

Grid Code Development Forum – 04 December 2024

Date: 04/12/2024 **Location:** MS Teams

Start: 09:00 **End:** 11:00

Participants

Attendee	Company	Attendee	Company
Claire Newton	NESO (Chair)	Eibhlin Norquoy	Community Energy Scotland
Graham Lear	NESO (Tech Sec)	Rachel Hodges	Cubico
Tanmay Kadam	NESO (Presenter)	Maryam Begum	Cummins
Jarzinho Rapoz	NESO (Presenter)	Mathew Chandy	EDF Energy
Jeremy Taylor	NESO (Presenter)	Harry Burns	EDF Renewables
Arnaldo Rossier Chacana	NESO	Ross Strachan	EDF Renewables
Chris Street	NESO	Frank Martin	European Energy
Gopi Yericherla	NESO	Majid Bahmanzadeh	GE
Hazem Karbouj	NESO	David Monkhouse	National Grid
Ife Garba	NESO	Alan Creighton	Northern Powergrid
Isaac Crawford	NESO	Nicola Barberis Negra	Orsted
Jayaraman Ramachandran	NESO	Mike Kay	P2 Analysis
Lizzie Timmins	NESO	Chanura Wijeratne	RES Group
Stephen Sommerville	Aurora Power	Claire Hynes	RWE

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Tim Ellingham	RWE	Jordan Calder	SSE
Isaac Gutierrez	Scottish Power	Kwaku Nti	SSE
Julie Richmond	Scottish Power	Ross Craig	SSE
Nigel Platt	Siemens	Ugo-Okoye Adanna	Statkraft
Sigrid Bolik	Siemens	Andrew Larkins	Sygensys
Graeme Vincent	SPEN	Sean Gauton	Uniper
Ben Gomersall	SSE	Harry Fachiridis	Zenobe
John Harrower	SSE		

Agenda and slides

A link to the Agenda and Presentations from the December GCDF can be found [here](#).

GCDF

Please note: These notes are produced as an accompaniment to the forum recording and slide pack presented and provide highlights only of discussion themes and possible next steps.

Meeting Opening – Claire Newton (GCDF Chair) & Graham Lear (GCDF Tech Sec), NESO

The meeting was opened with an overview of the agenda items that will be covered.

Presentation: Modelling requirements for co-located sites – Tanmay Kadam, NESO

A presentation was shared in relation to proposed changes to a Guidance Note on modelling requirements for co-located sites.

The changes help clarify what constitutes a Control System Change, and scenarios were discussed highlighting when models would be required following the modification of a control system. A definition for use in the Guidance Note for a Power Park Module (PPM) was outlined.

[Discussion themes / Feedback](#)

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A forum member queried the requirements for providing models for older thermal plant when upgrading the Automatic Voltage Regulator (AVR), highlighting the difficulty in obtaining accurate models due to no longer having Original Equipment Manufacturer (OEM) support.

The presenter advised that the expectation in this case would be an update to control system data for the AVR, but there would be a discussion needed to understand how to accommodate where updates were not possible. It was acknowledged that NESO would need to provide more clarity on what would be acceptable in this case.

A forum member noted that the proposals to change the Guidance Note definition of a PPM, whilst understandable, represented a clear move from how a PPM is defined elsewhere including the Distribution Code and [EREC G99](#). The importance of a universally agreed definition across distribution and transmission codes was emphasised.

The presenter acknowledged this concern and advised they would be happy to look further into how best to reach consensus on a definition of a PPM. NESO is arranging a follow up call with DNOs to discuss this point.

A forum member raised the issue of interactions between existing and new PPMs behind a Point of Connection (POC) due to a lack of accurate model representing them in combination, using the example of a new Battery Energy Storage System (BESS) in combination with an existing windfarm. They went on to highlight the importance of complying with all aspects of the Planning Code (PC) and not just the modelling requirements.

The presenter advised that this would constitute a modification application to an existing contract where requirements for the new BESS would be reflected in updates to the Appendix F of the contract. The Guidance Note aims to make it clear that compliance would be assessed at the POC, and this would involve testing the new plant in isolation as well as the plant in combination with existing plant to ensure there are no adverse interactions.

A forum member noted that getting access to the necessary data can be challenging even for relatively recent PPMs and asked whether OEMs had been involved when agreeing modelling requirements added through Grid Code modification [GC0141](#).

The presenter advised that OEMs had been part of that modification. They advised that NESO ultimately required good quality models and data to carry out its obligations but would be open to discussion and collaboration when difficulties are faced providing the required information.

A forum member offered a scenario where two PPMs behind a POC responded to a system event that could result in overloading assets at the POC. They advised that there would need to be a level of coordination between the PPMs to ensure this situation did not occur.

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The presenter advised that the Transmission Entry Capacity (TEC) should be the maximum combined output allowable from the two PPMs in combination to ensure the scenario doesn't happen.

A forum member sought clarification on whether an extension, adding new generation plant of the same type to an existing site, would be classified as a co-located site, and so obliged to follow the requirements outlined in the Guidance Note. Another forum member advised that the Guidance Note specifically refers to co-location of different technologies.

The presenter advised that an extension would be managed in the same way as different generating technologies, as changes could be required to existing control systems. This would not be the case where the extension was treated as a separate PPM. The presenter agreed to make clear in the Guidance Note any distinctions between co-location of different technologies and extensions, and the requirements in each case.

A forum member asked for clarification of whether EMT models were required for a new PPM.

The presenter advised this would be a requirement.

A forum member asked for clarification of requirements where PV panels or an inverter needed to be replaced.

The presenter advised that this was currently under consideration with respect to BESS augmentation, which would not be too dissimilar to the PV scenario highlighted, and the Guidance Note will be updated with an appendix covering this once this has been developed.

A forum member proposed that this work should be aligned with the ongoing [GC0168](#) modification.

The presenter agreed to take this away and discuss with the GC0168 workgroup.

A forum member advised that the Guidance Note needed to be as clear as possible, as not all generators are clear on what the requirements and associated costs are.

The presenter encouraged industry to read the Guidance Note and provide feedback to aid this.

Presentation: Extension of user model submission for Analysis & Modelling to support operationally critical system for ENCC – Jarzinho Rapoz, NESO

A presentation was shared in relation to proposed Grid Code changes that will require Users to provide RMS/EMT models at least 5 months (the current requirements is 3 months) prior to the date requested for issue of the Interim Operational Notification (ION). This would allow sufficient time for detailed dynamic models to be created in the Online Stability Assessor (OSA) tool ahead of ION, with the expectation that this would improve efficiencies in power system operation through a reduction in balancing costs due to increased confidence in data.

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Discussion themes / Feedback

A forum member asked if the model provided needs to be fully validated ahead of creating dynamic models for the OSA tool. The forum member went on to ask if the model should be the open unencrypted generic model.

The presenter confirmed that this had been investigated and that the model would need to be the final fully validated and open unencrypted generic version.

Multiple forum members noted that this proposal would give less time to generators to validate their models, which would have impacts to project timescales. The two-month increase was noted as having a potentially significant impact on developers.

A forum member questioned why it was not possible to utilise a single model and application, such as DlgSILENT PowerFactory, for all RMS and EMT model requirements.

The presenter advised that PowerFactory was used for offline simulations whereas OSA carried out online analysis in real-time and so this would not be practical.

A forum member advised that only a preliminary model would be obtainable in the proposed timescales, as site commissioning to benchmark the model against plant test results would not be achievable in time.

The presenter agreed to consider this.

A forum member reasoned that the timescales of the vendor supplying the models should be addressed, rather than proposing a code modification that places additional risk on developers. They went on to highlight the impact on CP2030 of any change that could slow down connections.

The presenter advised that discussions on vendor timescales were happening, but the proposal had been brought forward in parallel to gain feedback from industry.

A forum member noted that the presentation did not include information on NESO discussions with the vendor (which were provided verbally during the discussion) and felt this was a crucial step ahead of any modification proposal. They also noted lack of consideration of impacts on generators prior to the presentation.

Presentation: Obligatory Reactive Power Service (ORPS) methodology review - Jeremy Taylor, NESO

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A presentation was shared announcing to industry that NESO has partnered with an external consultant to review the ORPS methodology. The announcement included the scope of the project, its timeline, extent of industry engagement and deliverables.

The review of the ORPS methodology, which remunerates generators for obligatory voltage support, comes following significant changes to the energy landscape; the current payment mechanism is based on gas prices and unchanged since 2007. The review will consider costs for present and emerging technologies providing mandatory reactive power, with 11 potential technologies identified. The review is anticipated to take 7-8 months and will involve input from industry. An assessment of code impacts will be carried out as part of the work.

Discussion themes / Feedback

A forum member enquired whether payments would be based on technology type.

The presenter advised that technology type would be a factor.

A forum member suggested that technology type should not be a factor as reactive power is the same no matter the source.

The presenter advised that feedback like this is why they are keen to have industry onboard to understand the impacts of anything proposed.

A forum member asked if the ORPS review only considers reactive power services during operation of the network within operational limits, or whether different technologies performance during over/undervoltage scenarios would be a factor.

The presenter agreed to take this away to get a view from the subject matter experts involved.

A forum member asked whether ORPS involved embedded generators as well as those directly connected to the transmission system.

The presenter advised that ORPS only involves directly connected generators.

A forum member highlighted an issue with the current ORPS methodology affecting offshore wind generators and enquired whether there would be a review of this and an associated CUSC modification.

The presenter was aware of the issue. They advised that they expected the review to result in a modification to the CUSC and would also be considering any required changes to other codes.

A forum member asked whether the review would involve modelling or live testing.

The presenter advised there would be modelling work carried out in PLEXOS.

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A forum member asked whether there would be changes to the power factor envelope requirements of inverter-based generation.

The presenter agreed to take this away for consideration.

A forum member suggested that reactive power support from embedded generation sources should be considered as part of the review. Another forum member noted that this would require NESO to consider what restrictions would need to be imposed on DNOs.

A forum member noted that changes to power factor requirements widening the envelope of operation could cause a risk of pole slipping for synchronous generation.

The presenter made a note of these suggestions.

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Considering the presentations given a forum member reiterated the importance of not slowing down connections crucial to the delivery of CP2030.

The dates for the 2025 GCDF sessions are available on the [GCDF webpage](#).

The Chair thanked the attendees and presenters for their contributions and closed the meeting.

The next GCDF will be held on the 08 January 2025 with the 03 January 2025 being the deadline for agenda items and presentations.
