Public

Meeting Summary

Grid Code Development Forum – 07 May 2025

Date:	07/05/2025	**Location:**	MS Teams
Start:	09:00	**End:**	11:00

Participants

Attendee	Company	Attendee	Company
Antony Johnson	NESO (Chair)	Lewis Smith	Scottish Power
Frank Kasibante	NESO (Tech Sec)	Duncan Drummond	Inchcape Wind
Lizzie Timmins	Code Administrator (Presenter)	Evan Stuber	SCE Storage
Tanmay Kadam	NESO (Presenter)	Craig Wilson	Scottish Power
Jayaraman Ramachandran	NESO (Presenter)	Baljit Gratton	Habitat Energy
Stephen Sommerville	Aurora Power Consulting (Presenter)	Nicola Barberis Negra	Orsted
Bukky Daniel	EDF Renewables	Scott Bull	Ofgem
Jose Ribecca	Orsted	Ross Strachan	EDF Renewables
Harry Burns	EDF Renewables	Obinna Unigwe	Field Energy
Julie Richmond	Scottish Power	Michael McGarrity	Scottish Power
Grant McCormick	Cero Generation	David Monkhouse	National Grid
Benjamin Marshall	SSE	Mark Horley	Generator Compliance Consulting Limited
Phillip Addison	EDF Renewables	Hazem Karbouj	NESO

Jan Okholm	Orsted	Mike Kay	P2 Analysis
Stuart Kerr	Scottish Power	Maria Ebue	Voltalia
Jamie Morgan-Wormald	NESO	Gopi Yericherla	NESO
Tim Ellingham	RWE	Rajiv Jha	NESO
Mohit Prajapati	EDF Renewables	Ruth Kemsley	Our Footprints
Graeme Vincent	SPEN	Chris Smith	Natural Power

Agenda and slides

A link to the Agenda and Presentations from the May 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 – Antony Johnson (Chair) & Frank Kasibante (GCDF Tech Sec), NESO

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

Presentation: Code Administrator Update – Lizzie Timmins, Grid Code Administrator

The Grid Code Administrator representative provided an update on new modifications, implementations, and consultations.

1. _GC0179_: Removal of Balancing Code No.4 (BC4) from the Grid Code. This modification was highlighted as a key update since the last GCDF meeting.
2. _GC0103 Harmonised standards_: Encouraged participants to review the work group consultation.
3. _GC0166 Dynamic Parameters_: Code administrator consultation, which opened recently.
4. _GC0180 Housekeeping Appeals_: The appeals window for GC180, a new fast track modification, has opened. She provided details on the prioritisation stack agreed upon at the panel meeting, noting that GC0179 was added to the prioritisation stack.

5. *Generator Election*: She advised that a vacancy had become available for a Grid Code Review Panel Generator Representative, as a result of a resignation. She provided details on eligibility and the election timeline. She explained that generator parties, Schedule 1 users, or materially affected parties as of August 31st of the previous year, who do not currently have a generator panel member, are eligible to nominate a candidate. Details can be found [here](#).

Election Timeline: The presenter provided a timeline for the election process and offered to answer any questions about the election.

Discussion themes / Feedback

Stakeholders provided no feedback on this item.

Presentation: Modelling Requirements for Co-located Sites Update - Tanmay Kadam, NESO

A NESO representative shared revised proposals on modelling requirements for co-located sites, focusing on existing GB and EU Users connected before 1st September 2022. He explained the need for control system models and the definition of control system changes noting:

1. that these Users are not normally subject to PC.A.9 modelling requirements unless they install Power Generating Modules of different technology types behind an existing Grid Entry Point.

2. the need for control system models for power generating modules subject to control system changes or modifications after September 1, 2022. He clarified that modifications are defined in the Grid Code, but control system changes are not, and proposed publishing a guidance note for co-located sites to shed light on these definitions.

3. an example scenario where an existing wind farm decides to install batteries behind a common Grid Entry Point. This would be considered a modification, requiring the submission of control system models as per PC.A.9

4. clarification of the definition of control system changes and the need for communication with NESO before making parameter changes. He emphasized the importance of discussing changes to control parameters (e.g., gains and time constants) and their impact on the overall control system. He added that a control system change could include any change to control function block diagrams, system architecture, or input/output signals. This also includes changes to generator control, reactive power compensation, and power controllers.

5. that any parameter change, particularly gain or time constants, may not invoke new modelling requirements. However, such changes need to be discussed and agreed with NESO beforehand to ensure they do not significantly alter the performance of the control system.

6. the importance of communicating with NESO before making any control system changes. This is to ensure that any changes are properly assessed and do not require the resubmission of RMS and EMT models unnecessarily.

7. the definition of a Power Park Module (PPM) and the need for each technology to be registered as a separate BM (Balancing Mechanism) unit within the PPM. He highlighted the importance of aligning the definitions (e.g. PPM) with European codes and the implications for modelling requirements. He added that a PPM is defined as 'a collection of non-synchronous generating units joined together by a system with a single electrical point of connection to the transmission system'.

8. that each technology within a co-located connection must be registered as a separate BM unit. This ensures compliance with the Grid Code and proper classification of the entire site as a single PPM unless each technology has a separate connection point to the Transmission System.

9. that any modification or control system change to a PPM would invoke modelling requirements as per PCA.9. This includes scenarios where existing users decide to co-locate different technologies behind an existing connection point.

Discussion themes / Feedback

Participants provided feedback and suggested:

1. inclusion of diagrams in the guidance documents to clarify the definitions and requirements for PPMs, as well as clarify the definition of PPM to ensure it aligns with EREC G99 and RFG requirements.

2. updating the guidance document to include the definition of control system change and the modelling requirements for Co-located connections.

Presentation: EMT Modelling GC0141 and GC0168- Steve Sommerville, AURORA POWER CONSULTING

A presentation was shared regarding his experience with the EMT modelling process, highlighting challenges such as unclear simulation requirements, protection system modelling, and the need for updated guidance documents.

1. *Simulation Requirements*: the simulation requirements for EMT modelling are unclear, particularly whether the validation study needs to repeat the ECP 8.3 studies. He requested more clarity on the specific simulations needed.

2. *Protection System Modelling*: the challenges of modelling protection systems, especially for thermal power plants with discrete protection relays. He noted that PS Tag lacks extensive relay libraries, make it difficult to model protection systems accurately.

3. _Guidance Documents_: the EMT guidance document from July 2013 should be retired and its requirements incorporated into the GC0141 guidance note to avoid confusion and ensure consistency.

4. _EMT Modelling for Existing Sites_: difficulties in creating EMT models for existing sites, including the lack of historical data, OEM support, and the impact of Grid Code changes. He emphasized the need for flexibility and understanding from NESO.

5. _Lack of Historical Data_: creating EMT models for existing sites is challenging due to the lack of historical data and OEM support. This makes it difficult to develop accurate models for older power stations.

6. _Impact of Grid Code Changes_: Grid Code changes over the years have made it harder for existing sites to comply with modern requirements. He emphasized that NESO should be flexible and understanding when dealing with these sites to avoid discouraging upgrades and modifications.

7. _Need for Flexibility_: the importance of NESO being flexible and understanding when imposing EMT modelling requirements on existing sites. He warned that heavy-handed requirements could deter power stations from making necessary upgrades and modifications.

Discussion themes / Feedback

Stakeholders advised NESO to confirm the release date for the updated SSO guidance document and communicate it to the relevant stakeholders.

Presentation: EMT Model Development - Jay Ramachandran, NESO

A presentation was shared regarding the ongoing developments in EMT modelling, including the TOTEM (Transmission Owner Tool for EMT Modelling) model submission requirements, and various innovation projects aimed at improving the EMT modelling process and addressing challenges.

1. _TOTEM Model_: the Totem Model is an innovation project led by SSEN, representing the GB network. NESO uses this model as the base for integrating user models and conducting wider network analysis.

2. _Model Submission Requirements_: Outlined the requirements for model submission, including the need for both RMS and EMT models three months before the ION (Interim Operational Notification). He clarified that encrypted EMT models are accepted and highlighted the importance of providing models that represent plant and apparatus behaviour accurately.

3. _Innovation Projects_: Mentioned several innovation projects aimed at improving the EMT modelling process, such as co-simulation between RMS and EMT, development of a wider EMT GP model, and a grid connection simulation tool to facilitate model sharing and integration.

4. *Future EMT Modelling Approaches*: Outlined potential approaches for developing EMT models, including vendor-specific models, historical operational measurements, and generic models. He emphasized the importance of including key control elements in the models.

<u>Discussion themes / Feedback</u>

Feedback Mechanism: Stakeholders requested NESO to ensure there is a clear path for feedback from compliance engineers and model reviewers to improve the efficiency of the EMT model approval process and should provide a detailed document outlining the specific types of studies required for EMT model validation.

AOB

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

The next GCDF will be held on the **04 June 2025** with the **26 May 2025 being the deadline for agenda items and presentations**.