Grid Code Modification Proposal Form

GC0139: Enhanced Planning-Data Exchange to Facilitate Whole System Planning

Overview: To increase the scope and detail of planning-data exchange between DNOs and National Grid ESO to help facilitate the transition to a smart, flexible energy system.

Modification process & timetable

1. **Proposal Form**
   12 February 2020
2. **Workgroup Consultation**
   30 May 2022 – 22 June 2022
3. **Workgroup Report**
   17 August 2022
4. **Code Administrator Consultation**
   01 September 2022 – 30 September 2022
5. **Draft Final Modification Report**
   19 October 2022
6. **Final Modification Report**
   07 November 2022
7. **Implementation**
   10 Working Days following decision

Status summary: The Proposer has raised a modification and is seeking a decision from the Panel on the governance route to be taken.

This modification is expected to have a:

High Impact: National Grid ESO, National Grid TO and Distribution Network Operator's.

Low Impact Independent Distribution Network Operators, Generators and Distributed Energy Resource connections.

Modification drivers: System Planning, System Security and Transparency

Proposer's recommendation of governance route	Standard Governance modification with assessment by a Workgroup	
Who can I talk to about the change?	**Proposer:** Ian Povey, Electricity North West Limited Ian.Povey@enwl.co.uk 07796 548166	**Code Administrator Contact:** Jennifer Groome, Code Administrator - National Grid ESO Jennifer.Groome@nationalgrideso.com 07966 130854

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What is the issue?

The existing requirements of the Grid Code (in respect of data exchange between DNOs and National Grid ESO) are insufficient for the coordinated and efficient planning of their networks as the industry transitions to a smart energy system and distribution system operation activities.

Distribution networks are experiencing an increasing volume of Distributed Energy Resource (DER) connections. These connections are generation connections of differing technology and fuel type, storage facilities and connections offering a demand side response. The DER connections present a new set of issues to the planning and operation of the transmission system than those traditionally experienced.

Similarly, the move away from coal fired generation towards large scale renewable and DC inter-connector technology is changing the operation of and flows on the transmission network. This presents a new set of issues to the planning and operation of distribution networks, particularly those distribution networks that connect across Grid Supply Points.

Why change?

To facilitate the efficient and coordinated planning of the Transmission System, National Grid ESO and TO need a greater understanding of the quantity, type and impact of Distributed Energy Resources connected to Distribution Networks.

To facilitate the efficient and coordinated planning of their Distribution Networks DNOs need a greater understanding of Transmission System flows and fault contributions within a variety of demand/generation scenarios.

It is essential that network companies have a detailed knowledge of adjacent connected networks. This modification will significantly improve the scope and detail of the planning data exchanged between distribution and transmission companies.

What is the proposer's solution?

This modification proposes:

- An enhanced level of planning data exchanged between DNOs and NGESO; the data exchanged to largely be in the Common Information Model (CIM) format.
- DNOs, at weeks 24 and 50, to provide NGESO with CIM models detailing the sub-transmission network and equivalents representing networks at the boundary between the sub-transmission network and networks of lower voltage.
- The lower voltage distribution network equivalents shall detail aggregate demand and generation aggregated by Energy Source but disaggregated by existing/accepted-to-connect aggregate connections.
- CIM models of the distribution network shall be provided for a number of demand/generation scenarios, as follows:
    - Peak demand;
    - Summer minimum demand, and;
    - Solar-peak/daytime-minimum demand.
- NGESO, at week 42, to provide DNOs with CIM models of a switch level, single boundary representation of the transmission system.

- The physical extent of the representation of the transmission system shall be bounded by boundary nodes agreed between NGESO and DNOs.
- CIM models of the transmission system shall be provided for a number of demand/generation scenarios, as follows:
    - Maximum fault level;
    - Peak demand;
    - Summer minimum demand;
    - Solar-peak/daytime-minimum demand;
    - National high-power transfer dispatch scenario, and;
    - National low power transfer dispatch scenario.
- To align the data exchange requirements of the Week 24/50 data submissions with the those of a Statement of Works submission.

Draft legal text

The legal text is to be drafted at the Workgroup stage.

What is the impact of this change?

Proposer's assessment against Grid Code Objectives	
Relevant Objective	**Identified impact**
(a) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity	**Positive** Reduces the time necessary to interpret data exchanges into working models and allows more detailed models than current methods allow.
(b) Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);	**Positive** Accurate network models and alignment with statement of works will enable efficient offers for generation and demand connections.
(c) Subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole;	**Positive** Enables more detailed models than current methods allow which should enable the system operator to reduce uncertainty.

(d) To efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and	**Positive** Enables a more efficient exchange of information between licensees.
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	**Neutral** Implementation and administration of the Grid Code arrangements will remain unchanged by these proposals.

Consumer Impacts

None directly. Better network planning will enhance the development of smart networks and provide consumer benefit through this.

When will this change take place?

Implementation date
As soon as practicable. The Grid Code Panel have deemed this modification as high priority. On 10 January 2022 Ofgem issued an open letter which set out their regulatory approach and intent to use the Common Information Model (CIM) as the expected data standard in their data related licence requirements and for it to be used more broadly for data exchanges in the energy industry. Now that this letter has been issued, work is able to reconvene on GC0139.

Date decision required by
As soon as practicable.

Implementation approach
This modification proposal specifies that the enhanced data provision is triggered for the whole Distribution Licence area when an Appendix G to the BCA is established for one GSP within that Distribution Licence area.

Proposer's justification for governance route
Governance route: Standard Governance modification with assessment by a Workgroup

A Workgroup is required to fully develop the solution(s) and legal text for this modification.

Interactions

☒CUSC ☐European Network Codes	☒BSC ☐ EBR Article 18 T&Cs[1]	☐STC ☒Other modifications	☐SQSS ☐Other

Impacted parties are NGESO, Transmission Owners and all DNOs.

STC

There is a possibility that there may need to be consequential changes made to the STC following this modification. It is therefore proposed that any change arising from this Grid Code modification which has an impact on the STC is notified to the STC Panel so that the necessary consequential changes can be made.

CUSC

There are two current CUSC modification proposals:

- CMP298 – Updating the Statement of Works process to facilitate aggregated assessment of relevant or collectively relevant embedded generation.
- CMP328 – Connections Triggering Distribution Impact Assessment.

It is not expected that these modifications will explicitly detail any data exchange requirements, however they may wish to reference, or repeat (in a form of statement) the data exchange requirement contained within the Grid Code.

Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CUSC	Connection and Use of System Code
EBR	Electricity Balancing Regulation
GC	Grid Code
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards
T&Cs	Terms and Conditions
ENA	Energy Networks Association
CIM	Common Information Model
GSP	Grid Supply Point
TO	Transmission Owner
NGET	National Grid Electricity Transmission
NGESO	National Grid Electricity System Operator
DRC	Data Registration Code
BCA	Bilateral Connection Agreement

[1] If your modification amends any of the clauses mapped out in Annex GR.B of the Governance Rules section of the Grid Code, it will change the Terms & Conditions relating to Balancing Service Providers. The modification will need to follow the process set out in Article 18 of the Electricity Balancing Regulation (EBR – EU Regulation 2017/2195). All Grid Code modifications must be consulted on for 1 month in the Code Administrator Consultation phase, unless they are Urgent modifications which have no impact on EBR Article 18 T&Cs. N.B. This will also satisfy the requirements of the NCER process.

DER	Distributed Energy Resource

Reference material

- Open Networks Workstream 1B Product 4 report: Data Exchange in Planning Timescales; Data Scope – Final Report (22 pages)
- Enhanced Schedule 11 (Excel workbook with 5 spreadsheets)
- Schedule 5 – Enhanced Node Data V2 (Excel workbook with 4 spreadsheets)
- Ofgem Open Letter - The Common Information Model (CIM) regulatory approach and the Long Term Development Statement (10 January 2022)