

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



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: [Insert the applicable drivers from the following list: Cross-code change, Efficiency, EU Compliance, GB Compliance, Governance, Harmonisation, New Markets, New Technologies, Ofgem-led/Significant Code Review, System Operability, System Planning, System Security, Transparency]

Proposer's recommendation of governance route

Standard Governance modification with assessment by a Workgroup

Who can I talk to about the change?

Proposer:

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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 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 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:

- To introduce the new data exchange requirements for a Distribution Licence area when a Bilateral Connection Agreement (BCA) for one of its Grid Supply Points has established an Appendix G via a Statement of Works application associated with a new connection(s).
- To align the Demand & Energy data and the Network data requirements of the Week 24/50 data submissions with those of a Statement of Works submission.
- To require, as part of the Week 24/50 data submission, detailed node, line and generator data at the sub-transmission voltage level.
- To require, as part of the Week 24/50 data submission, aggregated demand and generator (by fuel type) data at network voltages below the sub-transmission level.

- To require, as part of the Week 24/50 data submission, flow and fault level contribution data at an increased number of cardinal demand points.
- To modify schedules 5 and 11 of the Data Registration Code (DRC) to facilitate these proposals
- To require, as part of the Week 42 data submission, Transmission System data to be specified in a Single Boundary format model for each DNO.
- To require, as part of the Week 42 data submission, that the Transmission System model be specified as a Switch Level model.
- To require, as part of the Week 42 data submission, that Transmission System data be provided for an increased number of despatch scenarios.

DNO to National Grid ESO Data Exchange

It is proposed to enhance the Grid Code requirements for week 24 and week 50 data submissions. This will provide National Grid ESO with:

- Full details of the sub-transmission network and any connections directly connected to the sub-transmission network
- Details of all distributed energy resource connections (and those “accepted to be connected”) greater than 1MW to the distribution network and their impact on energy flows at peak demand, summer minimum demand and solar-peak/daytime-minimum demand.
- Details of all distributed energy resource connections less than 1MW to the distribution network, aggregated by fuel type and disaggregated by substations connecting to the sub-transmission network.

National Grid to DNO Data Exchange

It is proposed to enhance the Grid Code requirements for the week 42 data submission. The data describing a transmission system model will be a switch level, single boundary format model. This model will cover the whole of the DNO area in detail, together with equivalent networks at agreed boundary points. Furthermore, it is proposed that the transmission model shall be provided for the following demand points:

- Maximum fault level
- Peak demand
- Summer minimum demand
- Solar-peak/daytime-minimum demand
- National high-power transfer dispatch scenario
- National low power transfer dispatch scenario

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 [Please provide your rationale]
(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 [Please provide your rationale]
(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 [Please provide your rationale]
(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 [Please provide your rationale]
(e) To promote efficiency in the implementation and administration of the Grid Code arrangements	Neutral [Please provide your rationale]

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 ☒ BSC ☐ STC ☐ SQSS
☐ European ☐ EBR Article 18 ☒ Other ☐ Other
 Network Codes T&Cs¹ modifications

Impacted parties are NGESO, NGET 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
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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)