| Grid Code Modification Proposal Form | At what stage is this document in the process? |
|---|---|

# GC0139:

## Enhanced Planning-Data Exchange to Facilitate Whole System Planning

| | |
|---|---|
| 01 | **Proposal Form** |
| 02 | Workgroup Consultation |
| 03 | Workgroup Report |
| 04 | Code Administrator Consultation |
| 05 | Draft Grid Code Modification Report |
| 06 | Final Grid Code Modification Report |

**Purpose of Modification:** 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.

This modification will enhance and align certain data exchange processes, providing greater granularity of data at a wider range of operating conditions; this will help facilitate improved coordination and more efficient planning of the networks for all parties.

| | |
|---|---|
|  | **The Proposer recommends that this modification should be:** assessed by a Workgroup to form the final proposals for the modification and then proceed to Workgroup Consultation.<br>This modification was raised 12 February 2020and will be presented by the Proposer to the Panel on 27 February 2020**.** The Panel will consider the Proposer's recommendation and determine the appropriate route. |
|  | **High Impact**: National Grid ESO, National Grid TO and Distribution Network Operator's. |
|  | **Medium Impact** None |
|  | **Low Impact** Independent Distribution Network Operators, Generators and Distributed Energy Resource connections. |

 

## Contents



## Timetable

*The Code Administrator will update the timetable.*

**The Code Administrator recommends the following timetable:** *(To be updated following first Workgroup Meeting)*

| | |
|---|---|
| Initial consideration by Workgroup | dd month year |
| Workgroup Consultation issued to the Industry | dd month year |
| Modification concluded by Workgroup | dd month year |
| Workgroup Report presented to Panel | dd month year |
| Code Administration Consultation Report issued to the Industry | dd month year |
| Draft Final Modification Report presented to Panel | dd month year |
| Modification Panel decision | dd month year |
| Final Modification Report issued the Authority | dd month year |
| Decision implemented in Grid Code | dd month year |

**Any questions?**


Contact:

**Rob Pears**

**Rob.Pears@nationalgrideso.com**

**07866 165540**

**Proposer:**

**Ian Povey**

**Ian.Povey@enwl.co.uk**

**07796 548166**

**National Grid ESO Representative:**

**Insert name**

**email address.**

**telephone**


 

## Proposer Details

| | |
|---|---|
| **Details of Proposer:**<br>(Organisation Name) | Electricity North West |
| Capacity in which the Grid Code Modification Proposal is being proposed:<br>(e.g. CUSC Party) | Grid Code and CUSC Party. |
| **Details of Proposer's Representative:**<br>Name:<br>Organisation:<br>Telephone Number:<br>Email Address: | <br>Ian Povey<br>Electricity North West Limited<br>07796 548166<br>ian.povey@enwl.co.uk |
| **Details of Representative's Alternate:**<br>Name:<br>Organisation:<br>Telephone Number:<br>Email Address: | <br>Ian Sandford<br>Western Power Distribution<br>07810 054450<br>isandford@westernpower.co.uk |
| **Attachments (Yes/No):** Yes<br>1. Data Exchange in Planning Timescales; Data Scope – Final Report (22pages)<br>2. Enhanced Schedule 11 (Excel workbook with 5 spreadsheets)<br>3. Schedule 5 – Enhanced Node Data V2 (Excel workbook with 4 spreadsheets) | |

## Impact on Core Industry Documentation.

| | |
|---|---|
| **BSC** | |
| **CUSC** | X |
| **STC** | X |
| **Other** | |

There may be an impact of the CUSC in respect of the Statement of Works process (as defined in CUSC article 6.5.5) and its data requirements.

There is a possibility that there may need to be consequential changes made to the STC following this modification.

 

# 1 Summary

## Defect

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.

## What

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

## Why

To facilitate the efficient and coordinated planning of the Transmission System, National Grid 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.

 

If these changes are not made, as the overall system becomes more interactive, with increasing volumes of Embedded Generation, demand side services and active network management, it will become more difficult to achieve coordinated and efficient overall network planning to facilitate the transition to a smart energy system.

## How

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.

 

# 2 Governance

## Justification for Standard Governance Procedure

Given the materiality, complexity and wide-ranging impact of the changes proposed in this Modification, the Proposer believes that this Modification should proceed using the standard governance route. This Proposal does not meet the Self-governance and Fast Track governance arrangements are not appropriate for this Modification.

## Requested Next Steps

This modification should be assessed by a Workgroup.

# 3 Why Change?

The existing scope of planning data exchange requirements is insufficient to meet the planning challenge predicted against the transition to a smart energy system and to 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.

To facilitate efficient and coordinated whole system planning 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.

# 4 Code Specific Matters

## Technical Skillsets

A high proficiency in power flow analysis, knowledge of distribution/transmission system planning & operation and knowledge of the existing Grid Code data requirements.

## Reference Documents

- Data Exchange in Planning Timescales; Data Scope – Final Report (22pages)
- Enhanced Schedule 11 (Excel workbook with 5 spreadsheets)
- Schedule 5 – Enhanced Node Data V2 (Excel workbook with 4 spreadsheets)

Please see Annex 1 for direct links to these documents.

 

## 5 Solution

This modification proposes to implement the changes outlined in Section 1 “How” via changes to the Grid Code which will be outlined in Section 9 “Legal Text” (currently in progress).

## 6 Impacts & Other Considerations

Impacted parties are:

- National Grid ESO
- National Grid TO
- All DNOs

Impacted processes are:

- Week 24/50 data submission process
- Week 42 data submission process
- Statement of Works submission process

Industry Codes potentially impacted:

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.

### Does this modification impact a Significant Code Review (SCR) or other significant industry change projects, if so, how?

No

### Consumer Impacts

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

 

## 7 Relevant Objectives

### Impact of the modification on the Applicable 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 |
| (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 |
| (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 |
| (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 |
| (e) To promote efficiency in the implementation and administration of the Grid Code arrangements | None |

This modification proposal will significantly improve visibility for network companies of what is connected to the electricity system and how this will impact the operation of their networks at differing demand and generation scenarios (relevant Objectives (a)).

This will therefore improve the ability of all network operators to efficiently plan, maintain and operate their networks. Furthermore, an enhanced data set will provide

prominence of generation connection opportunities and/or service provision (Relevant objective (b)).

Increased data and knowledge of the network's operation will promote improved network planning, maintenance and operation leading to increased security and efficiency of connected generation at all network levels Relevant objective ©).

This modification directly improves network companies' ability to develop efficient and coordinated networks as obligated by their licences (Relevant objective (d)).

# 8 Implementation

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.

# 9 Legal Text

## Text Commentary

It is the intention of the Proposer to draft legal text in support of this modification and make this available prior to commencement of a Workgroup.

# 10 Recommendations

## Proposer's Recommendation to Panel

Panel is asked to: refer this proposal to a Workgroup for assessment.

# ANNEX 1 – Open Networks Project Report

The following documents and schedules are referenced in this proposal:

- Open Networks Workstream 1B Product 4 report: Data Exchange in Planning Timescales; Data Scope – Final Report Link
- Enhanced Schedule 11 Link
- Enhanced Schedule 5 Link

 