

Modification proposal:	Grid Code GC0092: Using National Grid Network Models for Long Term Planning		
Decision:	The Authority ¹ has decided to approve ² this modification		
Target audience:	National Grid Electricity Transmission plc (NGET), the Grid Code Review Panel, Grid Code users and other interested parties		
Date of publication:	28 July 2016	Implementation date:	11 August 2016

Background

National Grid Electricity Transmission plc (NGET) is the System Operator (SO) for the National Electricity Transmission System (NETS). NGET is responsible for ensuring the stable and secure operation of the whole of the NETS. The Grid Code specifies the technical requirements for users connecting to, and using, the NETS.

Within the Grid Code, two types of electrical models are provided by NGET to Network Operators: a simple static equivalent model at Grid Supply Points (GSPs) which is used for infrastructure planning; and a more complex dynamic model used for operational planning (outage management). The latter is known as the National Electricity Transmission System Study Network Data Files (NETSSNDF).

The Operational Code (OC) of the Grid Code OC2.4.1.3 states that the NETSSNDF can only be used by Network Operators for the operation of their networks. This requirement has led to occasions where it could have been beneficial for a Network Operator to use this information for long-term planning but it was blocked from doing so. Network Operators' systems are becoming increasingly complex including situations where GSPs export to the transmission system. In these circumstances, a detailed form of the transmission system model would be useful in long-term planning.

In response to this issue, Grid Code modification GC0092 was raised to allow the use of the NETSSNDF by Network Operators for both operational and planning purposes on their networks.

The issue highlighted by GC0092 arose when UK Power Networks (UKPN) was awarded funding by the Authority through the Low Carbon Networks Tier 2 competition in 2014, for a project called Kent Active System Management (KASM). KASM is run in conjunction with NGET and aims to allow more precise operation and planning of the 132kV network in East Kent. Through the project, it became evident there was an issue regarding the use of different types of network models provided by NGET to Network Operators.

UKPN required to use the NETSSNDF for planning purposes to progress KASM but was prohibited from doing so by the conditions laid out in OC2.4.1.3. Since the project needs access to the unreduced, detailed transmission model, use of NETSSNDF by Network Operators for planning purposes is required to progress the project.

The modification proposal

Four alternative solutions were presented as part of the GC0092 issue at the Grid Code Development Forum (GCDF) which were discussed with industry representatives. The following options were discussed:

¹ References to the "Authority", "Ofgem", "we" and "our" are used interchangeably in this document. The Authority refers to GEMA, the Gas and Electricity Markets Authority. The Office of Gas and Electricity Markets (Ofgem) supports GEMA in its day to day work. This decision is made by or on behalf of GEMA.

² This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

- seeking a derogation from the existing Grid Code provisions. This was rejected as unlikely to succeed given the requirement for time-limited derogation and measures to seek compliance. These measures would most likely need a code modification and so a code modification was deemed the best way forward;
- seeking permission from data owners to use data. This was rejected as impractical as it would involve seeking permission from each party designated as a data owner;
- allow use of the NETSSNDF but with confidential data stripped out. This was rejected as it would not produce a model that would provide consistent results and would be labour intensive; and
- make a change to the Grid Code to allow the use of the NETSSNDF for planning as well as operational work. This is the proposed solution.

GC0092 was raised at the Grid Code Review Panel (GCRP) in November 2015. Following further work on the issue, it was discussed at the GCRP in February 2016 and finally presented to the GCRP in March 2016. The GCRP accepted the recommendation to take forward GC0092 as a Grid Code modification.

An industry consultation was published in April 2016 which resulted in five responses, all of which supported the change. One response highlighted other clauses which restrict usage of the NETSSNDF to operational use only and further Grid Code legal text changes are proposed as a result. The modification therefore makes changes to the following paragraphs in the Grid Code: OC2.4.1.3.3.(i).(z).(5), OC2.4.1.3.2(b), OC2.4.1.3.3(e) and OC2.4.1.3.4(b), where the words "planning and" have been inserted.

NGET's recommendation

NGET issued its GC0092 Final Report to us on 30 June 2016. The Final Report³ recommends approval of the legal text changes, set out in Annex 1 of the Report. NGET considers that the proposal provides the necessary access to the NETSSNDF for the Network Operators for both planning and operational purposes.

NGET considers that GC0092 will better facilitate the following Grid Code Objectives:

- (i) the solution will facilitate more efficient and co-ordinated operation and planning of UKPN's system with the potential for these benefits to be extended to the other Distribution Network Operators (DNOs). This, in turn, would lead to more co-ordinated and efficient operation and planning of the transmission system;
- (ii) the proposed changes will allow DNOs to carry out better planning allowing them to facilitate connection of further embedded generation;
- (iii) in light of the fact that, under certain circumstances, UKPN or the other DNOs are now exporting to the transmission system, it is important to accurately model the whole network to ensure better protection of assets and allow better utilisation of existing infrastructure; and
- (iv) the proposed change will allow UKPN to improve their ability to comply with the GSP Bilateral Connection Agreements and future European Network Codes (ENCs), as both sets of these documents specify technical requirements at the connection point between transmission and distribution networks.

³ Grid Code proposals, final reports and representations can be viewed on NGET's website at: <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/>. Information about GC0092 appears here: <http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/GC0092/>

Our decision

We have considered the issues raised by the modification proposal and set out in the Final Report dated 30 June 2016. We have considered and taken into account the responses to NGET's consultation on the modification proposal which are included in the Final Report. We have concluded that:

- implementation of the modification proposal will better facilitate the achievement of the objectives of the Grid Code⁴; and
- approving the modification is consistent with our principal objective and statutory duties.⁵

Reasons for our decision

We consider this modification proposal will better facilitate Grid Code objectives (i), (ii), (iii) and (iv).

(i) 'to permit the development, maintenance and operation of an efficient, co-ordinated and economical system for the transmission of electricity'

Due to the changing nature and complexity of the interaction between transmission and distribution networks, this modification permits the sharing of necessary information, leading to better planning by DNOs. It will allow the improved co-ordination of functions and, in turn, provide more efficient, and, ultimately, a more economical, system to the end customer.

We consider that allowing Network Operators to utilise models they already have access to in new ways for the greater benefit of the system will better facilitate this Grid Code objective.

(ii) 'to facilitate 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)'

This modification will allow Network Operators to carry out better, more detailed, planning of their infrastructure which will facilitate improved connections to their networks in future. By improving and facilitating better connections to their networks, Network Operators will allow more generators to compete.

For this reason, we consider the modification better facilitates this Grid Code objective.

(iii) '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'

With the increasing interaction between transmission and distribution networks, it is important that the networks are modelled accurately and the impacts on both are understood. Efficiency of the overall system is improved by increased understanding of these impacts, as is overall system security.

⁴ As set out in Standard Condition C14(1)(b) of NGET's Transmission Licence, available at: <https://epr.ofgem.gov.uk/>

⁵ The Authority's statutory duties are wider than matters which NGET must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

We consider the improved information sharing resulting from the modification will better facilitate this Grid Code objective.

(iv) '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'

With the upcoming implementation of the ENCs, the improved information sharing resulting from the modification should enable Network Operators to better comply with the ENCs. Improving modelling and planning at the distribution and transmission boundary points will make compliance more achievable. For this reason, we believe the modification better facilitates this Grid Code objective.

Decision notice

In accordance with Standard Condition C14 of NGET's Transmission Licence, the Authority hereby approves modification proposal Grid Code GC0092 '*Using National Grid Network Models for Long Term Planning*'.

Min Zhu

Associate Partner – Cost & Outputs and Technical

Signed on behalf of the Authority and authorised for that purpose