

Meeting summary

Grid Code Development Forum – March 2022

Date: 02/03/2022	Location: MS Teams
Start: 09:00	End: 11:00

Participants

Attendee	Company	Attendee	Company
Rob Wilson (RW)	National Grid ESO (Chair)	Sean Gauton	Uniper UK
David Halford (DH)	National Grid ESO (Tec Sec)	Grace March	Sembcorp
Murray Yelland (MY)	National Grid ESO (Presenter)	Priyanka Mohapatra	SP Energy Networks
Bieshoy Awad (BA)	National Grid ESO (Presenter)	Robert Newton	Zenobe Energy
Frank Kasibante (FK)	National Grid ESO (Presenter)	Ross Strachan	Scottish Power
Pooja Rughoo	National Grid ESO	Martin Aten	Uniper Energy
Terry Baldwin	National Grid ESO	Lakshmipathi Chinna Murugan	Nordex UK
Ayman Attya	National Grid ESO	Harikrishnan Ramaakrishnan	Nordex
Alan Creighton	Northern PowerGrid	Ander Madariaga	Ocean Winds
Graeme Vincent	SP Transmission	Joshua Logan	Drax
Paraic Higgins	ESB Independent Generation	Paul Youngman	Drax
Ruth Kemsley	EDF Energy Renewables	Isaac Gutierrez	Scottish Power
Garth Graham	SSE		

Agenda and slides

A link to the Agenda and Presentations from the March GCDF can be found here

<https://www.nationalgrideso.com/calendar/grid-code-development-forum-gcdf-02032022>

GCDF

Please note: These notes are produced as an accompaniment to the slide pack presented and provide highlights only of discussion themes and possible next steps.

Meeting Opening – Rob Wilson, NGESO

RW opened the meeting providing an overview of the agenda items for discussion, and a run through of current open actions.

Update to the TS3.24.70 Dynamic System Monitoring (DSM) – Murray Yelland / Pooja Rughoo, NGESO

An update was presented in relation to proposed changes to the TS3.24.70 Dynamic System Monitoring (DSM) standard and to provide some of the supporting ideas in relation to:

- Why are DSMs required
- What changes are planned
- Any parallel/future work

Discussion themes / Feedback

The Chair confirmed to the attendees that the DSM standard is one of the Electrical Standards referred to in the Grid Code. To update the standards a specific change process will need to be followed which involves presenting the proposed changes to the Grid Code Panel and then going sending this out for comment for 20 working days. If all changes are agreed the updated version will be implemented. And there are further process steps if agreement is not reached. The presenter confirmed that they are happy to follow this process as they are keen to ensure that we arrive at a workable solution for all parties.

The Chair assumes that these changes could not be applied retrospectively and will just apply to new equipment that is installed going forwards?

It was confirmed that the changes would not apply retrospectively as this would be difficult and expensive.

Several attendees asked why the DSM is different from the G99 standard as the DSM can be quite complex for an unformed user along with having to obtain the correct equipment from specific expert suppliers which can be very expensive?

The presenter agreed that this was an unfortunate problem and relies on more suppliers coming into the market to provide this equipment. Mainly though, the Grid Code standards and G99 had applied to different user groups.

Could the qualification process (for equipment) be made easier and what is the process if a unit wanted to become DSM compliant?

The presenter confirmed that currently the ESO have never type tested/qualified a DSM unit as this was a process that was inherited from NGET. There is no official registration type process as such, and this is something that the ESO will take away to investigate.

A question was raised around the current frequency, accuracy, and resolution requirements and how challenging the current specification is. It was asked whether we have engaged other suppliers with regards to this specification?

There has been some feedback from suppliers with regards to general resolution requirements with some of the issues now fixed. We are happy to look at any specific examples and if we do need to look at amending some of these standards then it would be beneficial to have more suppliers than less that can meet these standards.

It was mentioned that if the resolution requirements are so similar to G99 then why could we not just have one specification that can be used by both distribution and transmission?

This is something we can investigate but perhaps in terms of referring to the G99 requirements in the DSM rather than directly copying across.

It was noted that the benefit of harmonisation across transmission and distribution, as purchasers of the product, will be more choice and as a result lower cost. It would be good to understand if ESO have spoken to providers to see if they can meet these proposed changes and by when as this could be an issue with the new standard being introduced before the manufactures can make the amendments required to meet these new standards?

This is a very valid point and will be noted.

It was raised that with regards to the question of qualification, it is believed that the ENA already conducts qualifications for relays and protection units, but it would be useful if they established a qualification process for PMUs as this has been a challenge

The next steps are for ESO to consider the questions which have been asked today and the formal process will then need to be followed in terms of presenting these changes to a future Grid Code Panel before seeking comments.

Reduction in Short Circuit Levels and potential implications on Fault Ride Through – Ayman Attya / Bieshoj Awad, NGESO

A verbal update was provided to raise the awareness of some of the challenges related to the reduction in short circuit levels in the transmission system and its potential implications on fault ride through. One of the issues identified is that classical short circuit level indices may not be representative of system strength and that other indices may need to be used. Following on from this, NGESO have recently published a System Operability Framework paper to outline our thoughts on the issue and summarise the various indices that may be used to quantify system strength. A webinar is scheduled on 10th March to present the paper and discuss the options presented and their suitability for use in assessing system strength and fault ride through.

SOF paper and feedback proforma can be found [here](#) and link to the webinar [here](#) and the group was invited to feedback via the proforma and attend the webinar if interested.

Discussion themes / Feedback

It was noted that in the last GC0155 workgroup the issues around fault levels were raised with decreasing fault levels on the network which are happening quite quickly, especially in Scotland. Windfarms are connected in these areas that were designed for a minimum fault level which is higher than the level currently in that area. Are ESO addressing this?

The responsibility of managing stability is shared between the ESO, generators and the TOs. There are requirements in the SQSS that need to be met with regards to system stability.

There is a need to ensure equipment can ride through faults and an enduring requirement to ensure plant remains compliant, and to allow this to happen there will be information that the ESO will need to provide which will be discussed further in the upcoming webinar.

It was noted that some further thinking will be required because if there is no obligation for ESO to maintain a minimum fault level then potentially generators may have to make expensive changes to their plant to be able to cope with a lower fault level.

Given the localised nature of fault levels maintaining a minimum level could be complex and expensive.

A minimum fault level across the system could be counterproductive and could require some customers to invest in expensive plant that they might not need to.

We need to decide on the best way to provide clarity to customers and this might mean providing projections for what will be happening on the system in the future and generators can then work out if this will be an issue for them.

It was asked if the GC0155 modification was addressing the issue around the potential of some customers making investments which would improve short circuit levels for other customers that have plant that can't deal with low levels?

GC0155 was not intended to deal with this issue but specific areas in the existing fault ride through text that had been highlighted by the previous work under GC0151 as needing clarification. Minimum fault level requirements and the implications of this are a complicated subject and the intention was that this would not be covered by GC0155, but we acknowledge that we will need to identify by what route this will be dealt with.

It was noted that there doesn't appear to be any commercial availability for 'grid forming' from "green" plants such as wind and solar, and while there have been a number of papers written on this subject and there is also a Grid Code working group looking at this, and although it has been implemented in the Grid Code there is still a lot of requirements that still need to be defined which means simply making changes to this equipment is not really a reality at present. Synchronous Compensators seems to be the most cost effective way of increasing short circuit levels at the moment.

It was noted by a participant that there are already commercial grid forming solutions BESS & Statcom converters, but we agree that Grid Forming may be the solution going forwards but is not widely available yet. The importance of the approval of GC0137 was to set the minimum specification for Grid Forming and allow stakeholders to start designing or procuring equipment to meet this. GC0137 does not by itself set up the markets.

It was noted that GC0137 was not a mandated requirement and the specification is only mandatory should you wish to participate in Grid Forming.

One of the key points in terms of getting GC0137 approved was that it was not mandatory but having the specification does not set-up any type of commercial market for providing Grid Forming but does facilitate in terms of knowing what the specification would be to participate in any future markets.

A participant did not believe that generators could decide whether they need to provide Grid Forming and with the Grid Code only requiring you to ride through when there is a fault. The issue seems to be when low fault level happens when the fault is complete, and we are in the recovery zone and this is what we have seen in recent events.

So, either we change the Grid Code to take into account these fault recovery considerations or Grid Forming will become mandatory for many developers.

When looking at the fault ride through requirements, the post fault system also needs to be considered. In order to confirm that the disturbance has been ridden through, the plant also needs to be able to stabilise after the fault has been cleared.

It was also noted that GC0155 is not intending to resolve this issue as it is very substantive. The next steps will be the webinar which is being held on the 10th March.

Increasing participation / interaction at future GCDF's – Rob Wilson / David Halford, NGENSO

We invited the participants to this month's GCDF the opportunity to any suggestions in relation to how we can increase participation and interaction at future GCDF's.

Discussion themes / Feedback

It was noted that ESO have already received some feedback with regards to how we can look to increase participation and interaction at further GCDF's, which will include making the recording available after the meeting has taken place and publishing this on the ESO website.

The GCDF is an open forum, and all parties can suggest items to be discussed.

Participants were encouraged to send any ideas or suggestions they might have in terms of increasing participation and interaction at future GCDF's to the GCDF inbox.

Whole System Technical Code – Frank Kasibante, NGENSO

The WSTC Team shared have a brief overview of the project and shared an update with regards to current progress in respect of engagement with the Industry and the next steps in respect of project scoping papers which will be presented to the Steering Group on the 16th March.

Discussion themes / Feedback

It was asked if the WSTC webpage could be shared with the group which can be found [here](#).

AOB

The Chair informed participants that there are currently two SQSS consultations open.

The first consultation is in relation to a review of the SQSS which was highlighted in the ESO RIIO-T2 plan and can be found [here](#).

The second consultation involves the 2022 version of the Frequency Risk Control Report which is looking at establishing what conditions the ESO is going to secure the system for to avoid unacceptable frequency conditions as defined in the SQSS and can be found [here](#).

RW thanked the attendees and presenters for their contributions and in closing the meeting reminded everyone that the GCDF is an open forum and agenda items are invited from all parties.

Next GCDF will be held on the 6th April with the 29th March being the deadline for agenda items and presentations.

Action Item Log

Action items: In progress and completed since last meeting

ID	Month	Agenda Item	Description	Owner	Notes	Target Date	Status
3	September	Minimum Short Circuit Levels	Ensure GCDF is updated with regards to progress on developing a proposal to include in the ESO System Operability Framework (SOF) paper	BA		On-going	Open
