

GC0151 Fault Ride Through

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The issue

- The ESO's 7th May 2021 letter set out a 'voluntary' interim process;
- The ESO's 24th June 2021 GCRP presentation suggested the interim process was amended.

[Added 06 July 2021] - Clarification by ESO: These slides were a holding response to the panel ahead of GCDF. They were not presented. No specific amendment to the process was defined.

- This highlighted the need for certainty for Users.

Why?

- The interim process has flaws as it would:
 - 1) Be placing Users (and in particular Generators) in breach of a relevant **legal requirement**;
 - 2) Have a significant **commercial impact** on Users and consumers;
 - 3) Have a significant impact on the safety and **security of the electricity system**;
 - 4) Apply an **unreasonable timing** obligation on some stakeholders;
 - 5) Apply a **discriminatory process** to some stakeholders; and
 - 6) Not ensure and **enhance transparency** of the FRT situation in GB.

Legal Compliance

- Need to ensure that Users comply with REMIT Article 5 obligations concerning, in particular, market manipulation.
- Need to be mindful of ACER Guidance.

Significant commercial / system impact

- Following the interim process could lead to Users suffering significant commercial impact given the zero output and duration aspects.
- Following the interim process could impact system security given the zero output and duration aspects.

Unreasonable timing / discriminatory

- The interim process would see Generators having to respond within 2 hours or go to zero output.
- Not possible / practical to complete an investigation of a fault of the transmission system which occurred 150 kms away and determine that it was co-incident with a plant trip and that this was outside of Grid Code obligations at, say, 4am on a Sunday morning.
- The interim process would see different approaches being applied to different parties; between Users like generators and interconnectors as well as between Users and Network Operators.

Need to ensure and enhance transparency

- General lack of access to historic or real time post event FRT information for Users from ESO
- Uncertainty as to what 'safe level' actually means: for example, safe for NETS, safe for Users' asset(s) or safe for NETS and Users' asset(s)?
- Need to share lessons learnt widely
- Need to see dynamic largest infeed loss information from ESO

Objective of GC0151

- To codify a solution which will:
 - 1) Be placing Users (and in particular Generators) in compliance of a relevant **legal requirement**;
 - 2) Have minimal **commercial impact** on Users and consumers;
 - 3) Have a positive effect on the safety and **security of the electricity system**;
 - 4) Apply a **reasonable timing** obligation on all stakeholders;
 - 5) Apply a **non-discriminatory process** to all stakeholders; and
 - 6) Ensure and **enhance transparency** of the FRT situation in GB.

Solution (1) < 100

- Where User's site or Network Asset TEC/ asset capability is < 100 MW; no immediate export limitation would be immediately applied but the User or Network Operator would have three months from the date of submission of waveform data by NGESO to investigate and if necessary, resolve the cause of any non-compliance.

Solution (2)(a) > 100 MW

- a. Where the User or Network Operator is in receipt of an **ION**: a MW export constraint would be applied immediately to a level of either:
 - i) 70% of the *station* TEC/ asset capability; or
 - ii) the prevailing largest infeed limit (whichever is lowest)
- Note – the export limit will not be reduced below 100 MW (i.e a User with 130 MW would only be constrained to 100 MW)
- The User or Network Operator would have 3 months from the date of submission of waveform data by NGESO to investigate and if necessary, resolve the cause of any non-compliance.

Solution (2) (b) > 100 MW

- b. Where the User or Network Operator is in receipt of a **FON**: no immediate export limitation would be immediately applied but the User or Network Operator would have three months from the date of submission of waveform data by NGESO to investigate and if necessary, resolve the cause of any non-compliance

Solution (2) (c) > 100 MW

- c. Where the User or Network Operator is in receipt of a **LON**: i. if the reason for the LON relates to equipment changes that could reasonably be expected to affect the FRT performance (e.g. a generator replacement or software update that fundamentally changes the FRT capability or protection settings that are tighter than were applied previously) then the User or Network Operator would be managed as for an ION (see (a) above).
- ii. For all other reasons (e.g. a software upgrade that only affects a windfarm's central control unit) the User or Network Operator would be managed as for a User or Network Operator in receipt of a FON.

Solution (3)

- For **any** User or Network Operator: if the cause of the FRT non-compliance is not resolved after three months from issue of the waveform data by NGESO, the User or Network Operator would have to constrain the station TEC/ asset capability to 50% until the non-compliance was resolved

Solution aspects

- The solution has three core aspects:
 - (i) Time to investigate;
 - (ii) MW Threshold; and
 - (iii) Degree of forced constraint.
- Also looks to provide Further Clarity on Voltage Protection Setting

Applicable Objectives

- Positive on (a), (c) and (d).
- Neutral on (b) and (e).