**GRID CODE WORKING GROUP GC0156**

**ELECTRICITY SYSTEM RESTORATION STANDARD**

**QUESITONS AND ANSWERS DOCUMENT**

| No | **Question** | **Answer** |
| --- | --- | --- |
| 1 | Can a link be provided to the E&R Terms and Conditions document | [https://www.nationalgrideso.com/document/160021/download](https://urldefense.com/v3/__https:/eur02.safelinks.protection.outlook.com/?url=https*3A*2F*2Furldefense.com*2Fv3*2F__https*3A*2Feur02.safelinks.protection.outlook.com*2F*3Furl*3Dhttps*3A*2F*2Furldefense.com*2Fv3*2F__https*3A*2F*2Fwww.nationalgrideso.com*2Fdocument*2F160021*2Fdownload__*3B!!KLAX!j8U0UNCmu7WzQTbvSQ-W8e4CB0M8aYs3qMiDPX8lygs45mT9NKij1U0kqaQkPEK9kH_W5JArdAf5TnNTHtm8NA*24*26data*3D05*7C01*7CChristopher.Statham*40ofgem.gov.uk*7C6c76d143449d42d3435a08da2787ee05*7C185562ad39bc48408e40be6216340c52*7C0*7C0*7C637865762439197655*7CUnknown*7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0*3D*7C0*7C*7C*7C*26sdata*3DRsYNTCeeMarJIJzSuSChbynQdE5wDLcd7fASXUo6mXI*3D*26reserved*3D0__*3BJSUlJSUlJSUlJSUlJSUlJSUlJSUlJSUlJSUlJSU!!B3hxM_NYsQ!2KNGj1lQKL4CuZPtd32_Tk1jUKSLQi9pmvXef5jhPecQ5r_77jdHZxhY3cAS9xezkZMRcFxxVCDx4iVzoguO1YAQu9mdo_OVQdLxac3HAg*24&data=05*7C01*7CChristopher.Statham*40ofgem.gov.uk*7C6670b695df61417f52cd08da278a90bd*7C185562ad39bc48408e40be6216340c52*7C0*7C0*7C637865773347169642*7CUnknown*7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0*3D*7C3000*7C*7C*7C&sdata=Op2Pvsd5nG5Tb8sXoC4aSOyDnMtb3GpdFV2ny0LsigI*3D&reserved=0__;JSUlJSUlJSUlJSoqKioqKioqKioqKiolJSoqKioqKioqKioqKioqKiUlKiUlJSUlJSUlJSUlJSUlJSUlJSUl!!B3hxM_NYsQ!313uMRsaoK6gwhAOo7ttk8pBp94TG4MoAI2-ez7uqwZB6TA5FlH3neGz4hIvFZ3aQdVo2Bde0srE1-jYmxwLP-Esovg1or_HvTxUEcR1tmg$) |
| 2 | Can a link or copy of the BEIS Direction dated 19 October 2021 which was sent to the ESO on behalf of the Secretary of State be circulated to the group. |  |
| 3 | Alastair Frew and Garth Graham raised a number of questions – these are summarised in Questions 4 – 12. A copy of the document which includes comments from Alastair are included in this document |  |
| 4 | In terms of the new Black Start standard for 2026 what is envisaged as the demand recovery profile? | See attachment in No 3 |
| 5 | In terms of demand 24 hours after the start, 60% of demand will be between 12 & 30GW but it can be seen from the graph (see document in item 3 above) that 60% of the daily peak demand of 20 to 30GW will occur between 24 & 48 hours depending on the time of day and year.  Related to this, what role, in the first 24 hours (and the next 48 -72 hours) will industrial and commercial demand restoration play within the 60% (moving to 100%) figure? Given that reliable (i.e. non-interrupted) electricity supplies will be some days off, will I&C users such as factories etc., with continuous processes, or offices / shops / hospitality etc., wish to return to their ‘BAU’ (in terms of them freely being able to use electricity when they wish / need to) when they can, realistically, expect (Grid Code OC6) demand control rotational demand disconnection during this 24 (48-72) hour period. Are they more likely to delay their return to site(s) until they have greater certainty of non-interrupted electricity supplies? | Further clarity is being sought from BEIS on the definition of demand  *“electricity demand” will be calculated by way of the forecast of the next peak transmission demand.*  Critical demand (CNI) will have priority as ESO will coordinate with DNOs to bring demand up sequentially.  Our initial view is that demand rotation during restoration process would be an additional complexity.  Also, during restoration, it is possible that certain commercial demand may not be staffed. |
| 6 | The obvious first question this graph only shows transmission demand does the standard actually require total demand and how will this be factored in? | Clarity is being sought from BEIS |
| 7 | Is every party who provides any service between the start of the incident and 100% demand being restored a “restoration service provider”? [According to definition in ERNC, Article 3(2), “*‘restoration service provider’ means a legal entity with a legal or contractual obligation to provide a service contributing to one or several measures of the restoration plan*”. Given that the restoration plan gets us to the 100% demand being restored, the answer (in law) is clear.] | Primary Restoration Service Providers could connect within  Phase 1: 0-2hrs  Phase 2: 2-24hrs including Anchor Generators  Phase 3: 24-72hrs  Secondary Restoration Service Providers could start reconnecting from phase 2 and beyond, depending on how quickly external electrical supplies are provided.  In summary, any provider with a Restoration Service Contract and CUSC participants are Restoration Service Providers. |
| 8 | What involvement will the E3C have in this process and is it envisaged they will introduce rota powercuts? [This presumably depends on whether the rota disconnections are via ESEC or Grid Code OC6? Given that the distribution network restoration is initially uncertain I don’t see how we can, for example, envisage using ESEC rota disconnections in the first 24 (48?) hours as until the distribution network has been fully restored – this does **not** mean that demand is 100% restored – can those networks be configured by all 14 DNOs respectively to invoke the 3 hour ESEC rota disconnection arrangements. Therefore, initially the sharing of the available power to those parts of the distribution networks that are restored would, it seems to me, be via OC6 rota disconnections (including disconnecting the ESEC protected sites) but that we could (would?) look to move to ESEC rota disconnections (not disconnecting the protected sites) from day 2-3 onwards?] | Till date, Rota powercuts has not been considered for ESRS strategy |
| 9 | **Phase 1 -** starting generation are the only parties doing anything:-  Blackstart Service Providers on the transmission system as per current definitions and requirements or do these requirements need to be changed?  Anchor generators in distributed restart, these requirements are not fully defined yet. | See response 7 above |
| 10 | **Phase 2 -** energising the system are the parties then:-  Blackstart service Providers running.  TOs switching in circuits from Blackstart service providers to somewhere, presumably to BM units but is this based on week 24 DRC schedule 16 data or is current data required?  Anchor generators running.  DNOs switching in circuits from anchor generators to somewhere, presumably Top-up Service Providers. | See response 7 above |
| 11 | **Phase 3 -** starting other generators are the parties then:-  Blackstart service Providers running.  ESO/TOs operating islands from Blackstart service providers  BM Units starting, this isn’t really defined anywhere, there is the requirement to complete Schedule 16, but will BM parties actually be held to the power requirements and times submitted. Equally there is text for other site restrictions in schedule 16 but is this sufficient or are more items such as minimum System Strength or minimum Fault Levels also needed. [Does this also depend on the FRT situation as per GC0151/ GC0155? If, as per the scenario envisaged in Julian Leslie’s 7th May 2021 letter, the cause of the blackout was an FRT event (or suspected FRT event) then what do the grid connected generators and the ESO have to do, prior to restarting, to ensure the FRT obligations (as per GC0151/ GC0155) are addressed?] | See response 7 above  For FRT situation, the generator in question would have to satisfy the FRT requirement ESO Compliance team prior to re-connecting.  Restoration process will progress for other generators. |
| 12 | Anchor generators running.  DNOs operating islands from anchor generators.  Top-up Service Providers as part of distributed restart, requirements not defined  Will other embedded generators be involved at this stage or later and are there any requirements associated with that? | Restoration Service Provider requirements are defined on ESO website  Other embedded generators are expected to commence reconnecting when they believe it is safe to do and/or following conversation with their DNO |
| 13 | Which Parties are required to be involved? | Stakeholders across the industry - Please see the GC0156 WG1 materials |
| 14 | What are these Parties are required to do? | Collectively implement strategies to support implementation of ESRS |
| 15 | When do these Parties need to do it? | From now onwards - till when the Regulatory Framework is updated, and then actual implementation will follow |
| 16 | And finally where is this specified or going to be specified? | Ultimately, the regulatory frameworks (GC, DCode etc). Contracts |
| 17 | Provide Copies of the Workstream Reports   1. Modelling and Restoration Tool 2. Future Networks 3. Technology and Local Diversity 4. Compliance Activities 5. Communications Infrastructure 6. Markets and Funding Mechanism 7. Regulatory Frameworks | Circulated on 28 April |
| 18 | Produce a Glossary and Definitions Document | Circulated 12 May 2022 |