

RIIO-ED2 Safety, Resilience, and Reliability Working Group (SRRWG) – 30th January 2020

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| From: Ofgem | Date: 30 th January | |
| People invited: Relevant stakeholders | Time: 10am to 1pm | Location: 1.17 10 South Colonnade |

1. Introductions, overview and Terms of Reference

- 1.1. David Neilson (DN), Catherine Dow (CD) – SPEN
- 1.2. Caroline Farquhar (CF) – Citizens Advice
- 1.3. Ruth Crascall (RC) – WPD
- 1.4. Jonathan Booth (JB), David Darley (DD) – ENWL
- 1.5. Greg Farrell (GF), David Wilkins (DW) – NPG
- 1.6. Landel Johnston (LJ), Fraser Nicholson (FN) – SSEN
- 1.7. Susannah Garwell (SG) – UKPN
- 1.8. Mark Hogan (MH), Fraser Glen (FG), Nayar Hussain (NH), Jack Ambler (JA) – Ofgem
- 1.9. Chenghong Gu (CG), University of Bath
- 1.10. Ofgem indicated that it aims to get dates narrowed down as soon as possible in relation to the pathway to ED2; it is anticipated that the Methodology Consultation is more likely to be published in July rather than June. DW suggested that the work on charging may take up some of the board's time.
- 1.11. Ofgem asked whether the Terms of Reference are drawing out resilience in the right way. There was agreement that the working group on 3rd March should be the right way to focus on cyber, climate change and workforce resilience, so long as there

is space to discuss the various topics. JB noted that the ToR as currently drafted are searching for a macro measure for all dimensions of resilience; it should be considered whether there is enough time/space to discuss the individual elements.

- 1.12. SG pointed out that safety is in the terms of reference, but it's not on the forward plan. Ofgem agreed that it should be added in. DW asked where load will fit into the working groups; Ofgem set out that there will be ongoing discussions in the overarching and decarbonisation/environment working groups. It also noted that ED1 RIGs working group is also covering some thoughts about how to record/report load and associated indices etc.

2. Workstream timelines

- 2.1. Workforce resilience was originally scheduled for 7th April, but now looking at 3rd March.

3. ED1 Performance to date

- 3.1. The majority of tree cutting costs are around the 'maintenance cut' (known by the relevant standard, ENA 43-8), rather than the 'resilience cut' (known by the relevant standard, ETR132). Ofgem highlighted that these costs are often focused on within the overall price control settlement since there are no output measures in this space currently, but the costs are a significant part of the price control.
- 3.1.1. JB stated that it is a blended area of business as usual (BAU) and resilience-driven functions. There is also another angle on this in terms of climate change adaptation, and what becomes BAU in the future and how this is cost assessed.
- 3.1.2. CF questioned whether efficiencies have been achieved in this space. Ofgem highlighted that there are different challenges facing different companies, both in terms of the approaches to monitoring and contracting.
- 3.1.3. It was noted that the 4 year view (all activities) does draw out some of the challenges that different licensees are facing (such as contracting issues in WPD, for example). DW added that history also plays a part in the view here, suggesting that activities undertaken towards the end of DPCR5 would impact the tree cutting programmes undertaken in ED1 to date. JB set out that the RIGs do not yet reflect the actual activity involved (i.e. landowner negotiations, waste disposal); the

resilience cut is much more costly than maintenance cut. LJ and DN noted that climate change is also meaning trees are growing more and are more susceptible to falling over.

3.1.4. Ofgem noted that some companies have a 'risk-based' approach to tree cutting.

Action: UKPN to present on the 'risk-based' approach to tree cutting

3.2. DW noted that the review of DNOs performance in relation to flooding is based on costs, but the number of sites protected may well have been greater than originally planned. Ofgem agreed that volumes are a useful aspect to review in this space.

3.3. Black Start costs are mainly made up of batteries, chargers, and battery savers. Current discussions are considerably focused around how telemetry would be operated without the grid. Typically, Black Start activities involve a very high volume of sites. There are other conversations about what this may need to look like in the future.

3.4. Ofgem acknowledged that this is a changing space, and there needs to be better understanding of how all elements of resilience will change with various factors, including climate change, Net Zero etc.

3.4.1. DW asked what Ofgem's current view is on how this is reported and whether it is a case of evolution or revolution. Ofgem consider tree cutting and flooding in particular as areas that require a detailed understanding, especially about the outcomes that are being delivered for the money that is being spent. Although, ultimately, this is a space where Ofgem is looking to evolve the current approach.

4. Measures for ED2 (ENWL presentation)

4.1. The following key points were noted.

4.2. Resilience tends to be used as a collective term for a handful of specific programmes (flooding etc.), but it is a fundamental part of networks. In the past, the term reliability has been used to describe day to day management of networks, and resilience to refer to the planning for larger/more impactful events. These programmes have different drivers/vectors, and are challenging to put an output around as DNOs

are trying to prevent an event from happening; there is no applicable measurement where they have been successful.

4.3. An extract from National Security Risk Assessment was looked at. A fundamental metric is whether electricity is available or not. There are 12 vectors that can be measured/assessed, and there are things that can be put in place to mitigate them. Each of these vectors has a lead government agency associated with them.

4.3.1. There are a range of committees/groups in place to manage and plan about resilience on these metrics.

4.4. Using a tiered model is a useful way of considering resilience. The bottom tier(s) show the purpose the networks are there to serve; above these are the things that allow the networks to function. Only when all the layers are working well does a network avoid the event (i.e. a network is resilient). The topmost layers are more about indirect costs where the companies are preparing themselves to respond if an event gets through the other layers (which are more about direct costs).

4.4.1. DW agreed with the importance of redundancy and planning standards, which bring it back to the overarching objectives of maintaining safe, reliable networks. It was highlighted that cutting back on any of these areas starts to undermine some of the layers of this overall approach.

4.5. Over time, the industry has become more aware of the consequence element of risk. Workforce renewal statistics (i.e. loss of trained staff) may impact on the ability of DNOs to provide resilience overall. In setting the environment for ED2, consideration should be given to trends / factors that will impact on the ability of companies to provide expected levels of resilience.

4.6. Many of the resilience areas are enduring risks that will reappear in ED2. Black start might be an area that needs to be returned to again specifically at some point; the indicative costing may need to be revisited. In the BEIS consultation on Black Start, when DNOs priced options, there was a strong element of indirect costs indicating that resilience has a wider scope than avoidance scenarios only.

4.7. ETR138: 1) only looks at major substations, so other assets aren't covered; 2) is quite deterministic (one type of substation is protected to one level, and another is

protected to another level); and 3) the National Flood Resilience Review (NFRR) meant some DNOs had lots of substations to protect in ED1, others considered this was an ED2 issue.

4.7.1. Both the ETR 138 specifications and NFRR are very deterministic; as a result, looking at the lowest £/customer does not always win in the cost assessment modelling. This will come into the cost assessment approach for flooding.

4.7.2. A typical solution in DPCR4/5 was about hardening the substation itself (membranes, bigger walls, raising equipment); now it is more about allowing the substation to flood but not impacting customers (i.e. greater interconnection). It means there is protection against risks other than just flooding. Again it brings in the consequence element of risk.

4.7.3. The challenge with pooling efforts/resources into providing wider flood protection (i.e. protecting a town/houses as well as the substation) is that: a) the protection level is much lower (i.e. 1 in 75 year event protection, whereas the lowest level of protection for DNO sites is to a 1 in 100 year event); and b) the costs are much much higher. There is a national grid interface at some sites and there is a sharing mechanism in place for costs there.

4.8. Critical National Infrastructure (CNI) may be a bit of a roll forward given this is likely to be a bit of a live issue.

4.9. ETR 132 is a very small proportion of overall tree cutting costs. Does it need reviewing? DNOs will be reporting under the wider DEFRA climate change adaptation reporting for the first time soon.

4.10. Climate change adaptation reporting fits in fairly well with the ED2 timescales. Adaptation reports focus primarily on the risks that DNOs see.

4.10.1. Interestingly, wildfire hadn't been on anyone's register of risks, until they became a real threat in 2018.

4.11. What are the known risks for 2020/21 onwards? Previous areas (flooding, black start etc.) were based on the known risks at that time.

- 4.12. Black start is something that will need to be focused on, with a wider view including telecoms resilience. Wider review of all forms of tree cutting may need a separate discussion within this working group.
- 4.13. A review will be needed on whether the risk-sharing mechanism of exceptional events is appropriate, and whether or not it is disincentivising companies from investing to reduce the impact of the event itself.
- 4.14. JW pointed to future resilience being considerably driven by people rather than hard infrastructure and a need for these increasing indirect costs.
- 4.15. Ofgem asked whether there are any other things we need to think about in terms of interactions/interlinkages with other areas? One option suggested was to look at an evolving a risk matrix. We should be able to relate each risk to an impact on companies (i.e. what have they done in response to those risks?).
- 4.15.1. CF asked whether there are other resilience measures that have not been covered, and how it is ensured that those who are unable to respond/afford to develop their own resilience, are not left behind. JB agreed, noting that the social impacts of recovery from extreme events is something that has come up in the past.
- 4.15.2. There is a link between network resilience and telecoms resilience (i.e. the telecoms that the DNOs need also needs to be resilient to allow network resilience).

5. AOB

5.1. Actions:

- 5.1.1. UKPN agreed to present on a risk based approach to tree cutting and will provide any materials to Ofgem in advance of the meeting to consolidate/circulate.
- 5.1.2. Ofgem agreed to liaise internally to see what has been developed on Black Start comms and what can be brought to a future meeting.

- 5.1.3. It was agreed that all stakeholders will provide views on any new/significant safety requirement that is not catered for under ED1 arrangements being rolled forward. Any materials will be provided to Ofgem in advance of the meeting to consolidate/ circulate.
- 5.1.4. It was agreed that Ofgem will liaise with HSE on tree cutting.
- 5.1.5. Ofgem agreed to contact the ENA regarding the 24th February meeting on climate change adaptation and provide feedback on progress there at the next resilience meeting.
- 5.2. Safety will need to be discussed in a future working group. Ofgem's initial view is that the HSE will be responsible for compliance in this space and expects companies to be setting out how they will maintain/demonstrate HSE compliance.
- 5.3. On future topic areas the following was noted: cyber resilience will need a specific session with planning and thought (Ofgem will lead this in the first place); black start and telecoms (WPD will take the lead on this); tree cutting (UKPN will take the lead on this); flood risk.
- 5.4. Regarding risk measures, (linking back to the Terms of Reference), Ofgem asked stakeholders to consider how some form of measure/score for this area might be developed and to feed those into Ofgem.
- 5.5. The 'Living without electricity' report referred to in the slides can be found here:
<https://www.raeng.org.uk/publications/reports/living-without-electricity>