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Code Administrator Meeting Summary

Workgroup Meeting 3: Enhance the Effectiveness of System Incidents Reporting

Date: 26 January 2026

Contact Details

Chair: Jess Rivalland, jessica.rivalland@neso.energy

Proposer: Guy Nicholson, guy.nicholson@statkraft.com

Key areas of discussion

The aim of Workgroup 3 was to review the Actions, Legal Text, Impact Assessment and Preliminary Costs Assessment.

Click [here](#) to view the slidepack for the meeting.

Actions Update

Actions 4 and 7 (remain open)

Action owners are to provide further information.

Action 9 (closed)

The NESO SME confirmed that there is no public source for their internal data guidelines, but they are available upon request and will share the presentation with the Workgroup.

A Workgroup member queried whether the NESO policies could be made available directly, rather than summaries, highlighting the risk of errors when summarising documents and having the original policy document would be helpful for accuracy.

The SME took a new action to provide the data guidelines and check if the direct policy documents can be shared with the Workgroup. **(Action 16)**

Action 10 (closed)

The NESO SME provided an update on whether Transmission Owner (TO) data can be published and where it could best be accessed. Noting practicality and constraints around sharing PMU (Phasor Measurement Unit) data more widely and in real time.

The main point of discussions on Action 10 were:

- clarification was needed on what confidentiality constraints restrict data access, noting that the term is often used vaguely. TOs should not assume generators' views and that any objections must come directly from the source;
- both TOs and generators have concerns about commercial sensitivity, particularly where data may reveal generator-specific issues. Noting that full user buy-in would be required before sharing certain data;
- suggestions of any confidentiality objections must be provided in writing by the party asserting them, rather than relying on verbal reports or assumptions;

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- the validity of confidentiality concerns, noting that PMU data at substations is consumer-funded and should not easily identify individual generators. Practical justification of how confidentiality applies and who is raising the concern was needed.

A Workgroup member queried a point on the TO Engagement slide as to why TOs would incur any costs, since PMUs are already installed and data is already shared with NESO, suggesting TOs may not need to do anything beyond current practices. They also stated that the rollout and sharing of data should be managed by NESO, as the data is already available in-house. Any solution or costing should be NESO's responsibility rather than the TOs'.

The NESO Rep advised they would seek clarification from the STC Panel regarding specific points about confidentiality, costs, and data sharing with the TOs (**Action 17**).

Action 11 (remains open)

A presentation from the Action owner is still needed before closing this action.

Action 12 (remains open)

Further Workgroup discussion is needed before closing this action.

Action 13 (closed)

The NESO SME advised the Workgroup that NGET are considering timelines for the full PMU rollout, noting that Scotland's rollout is complete, and other regions are expected to follow, with significant progress anticipated by March 2026 and completion targeted by the end of 2027.

They also mentioned that the same timeline applies to frequency, inertia and system resolution data and by December 2027, there should be sufficient rollout to access the necessary data.

The main Workgroup discussion points were:

- a map showing current and planned PMU installations, including their locations, numbers, zones and types would be useful to provide clarity on current and future PMUs; and
- whether a single PMU can serve multiple functions or if different specifications are being installed.

The NESO SME agreed to gather information on PMUs being installed that are of the same technology or specification and to clarify their technical capabilities (**Action 18**).

Action 14 (closed)

The NESO SME provided legal text and the Workgroup considered those later in the Workgroup.

Action 15 (closed)

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GB alignment with European Standard slide

The NESO SME explained:

- GB currently aligns with European requirements for frequency data resolution, which is set at one second for frequency quality analysis, referencing Article 131.1A;
- the one-second resolution is used for frequency quality checks and event analysis, while frequency control in Europe uses lower resolutions (one minute and fifteen minutes);
- there is no ROCOF (rate of change of frequency) reporting requirement in the referenced European standards.

A Workgroup member queried whether network operators in Europe might be operating at higher standards than the legislative minimum, suggesting the need to check with actual operators for current practices and direction of travel.

The NESO SME acknowledged that only the legislation was checked and not actual operator practices. It was also clarified that the one millihertz requirement in Article 130 relates to measurement accuracy, not time resolution.

The Workgroup discussed that GB could potentially achieve better than one-second resolution if tools allow, which would exceed current European requirements.

Impact Assessment

The Proposer presented an Impact Assessment comparing the cost of a major blackout in Spain (Iberian blackout) to potential costs in GB, estimating a GB blackout could cost around £13 billion, with the benefit of improved reporting (moving from monthly to weekly) far outweighing the operational cost.

The analysis showed that if enhanced reporting prevented even one blackout every 260,000 years, it would be cost-effective.

The main Workgroup discussions from the presentation were:

- whether the information required by OC 3.4 (related to GC105) could prevent a blackout, noting the benefit depends on whether the reporting can truly stop such events. The Proposer clarified that the goal is not to guarantee blackout prevention, but to reduce the probability by increasing transparency, analysis, and pre-emptive action. Past improvements in protection settings (like ROCOF and vector shift relays) are examples of how better information has helped avoid system issues;
- that reporting alone cannot stop a blackout, but it does provide valuable transparency and system visibility, which can help identify risks earlier;
- suggestions of reframing the cost-benefit analysis to compare the expected probability of a blackout (based on security standards) to the calculated benefit, to better contextualise the value of improved reporting. The Proposer agreed to review and improve the framing of the cost-benefit analysis for blackout prevention, specifically by comparing the

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expected probability of a blackout event to the calculated benefit of enhanced reporting **(Action 19)**;

- clarification was needed on how producing a weekly report, as opposed to a monthly report, would make a difference in preventing a blackout, expressing uncertainty about the practical impact of increased reporting frequency on blackout prevention. The Proposer responded that they were happy to have conversations on this.

System Incident Report

Methodology

The NESO SME outlined:

- the frequency incident reporting process, estimating FTE days for monthly and weekly reports under normal and stormy conditions;
- event investigation volume drives workload, weekly reports may require similar effort as monthly ones;
- monthly reports (stormy) take 13.3 FTE days, weekly reports 11.5 FTE days and extra FTEs help but don't halve the time due to process bottlenecks;
- PMU data use reduces reporting time and weekly reports could be 8 FTE days, or 3.6 with an extra FTE;
- reporting depends on IT systems, holidays, control room support and region count. More regions mean more time;
- some event data is already published externally. The benefit of more frequent reporting for blackout prevention is questioned. Bi-weekly reporting is suggested as a practical compromise.

Workgroup members strongly agreed with the Proposer on the importance of timely incident reporting for pre-empting blackouts and identifying system trends.

The Workgroup discussed that the current three-month reporting lag and unhelpful data formatting make it difficult for his team to analyse incidents and update their own reports promptly. Suggestions of more frequent (bi-weekly) reports would provide a clearer, up-to-date picture of system events, enabling earlier trend identification and better industry preparedness

A Workgroup member asked whether NESO could use licence condition D2 to require TOs to provide information within set timelines, suggesting this could be formalised in the STC to streamline data provision for incident reporting. The NESO SME responded that while PMU rollout will eventually provide live data, current processes still rely on manual requests. The need for a code modification or further discussion may diminish as PMU coverage improves.

One Workgroup member suggested having thresholds for publishing larger incidents and smaller incidents monthly. The NESO SME responded that NESO reviewed the idea of publishing larger incidents more frequently and smaller ones monthly, but noted that defining thresholds for

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"larger" and "smaller" incidents needs official clarification, especially as the 250MW threshold is under review due to system dynamics.

A Workgroup member explained that when using the system incident report spreadsheet, their team converts data to absolute figures and finds some columns irrelevant for their analysis, though they may be useful to others. They requested that the generation source be added to the spreadsheet, as this is currently a manual process for their team. They took an action to note down and share specific feedback on the spreadsheet format changes that would help his team, e.g. adding the generation source and clarifying which columns are relevant (**Action 20**).

The Workgroup discussed automating the reporting process could be improved by using rate of change of frequency (RoCoF) thresholds instead of just MW loss, which might make it easier to automate incident detection and reporting. Noting that that the current 250MW threshold is intended to capture the required events and switching to a RoCoF-based threshold could complicate things and would need further thought. It was emphasised that, despite the potential for PMU data to reduce reporting time, many events near the lower MW threshold still require manual investigation. This is due to false positives and the difficulty of automating the identification of all relevant incidents.

The Workgroup agreed to continue considering whether changes to the code could support greater automation, with the Proposer encouraging the NESO SME to explore options that would maintain data quality while making the process more efficient.

Legal Text

The NESO Rep took the Workgroup through the legal text shown in track changes.

The main points of discussions arising from that:

PMU Multiple Regions

- queries as to why wording in clause OC3.4.1(b) had been struck out. Multiple regional measurements are required to ensure a representative spread across the country, noting that system conditions in the south east of England differ from those in north Scotland. The requirement should reference regions clearly, such as Scotland, England, and Wales, to guarantee coverage and avoid all measurements coming from a single area. The Proposer responded that they would investigate wording but would ideally like to improve on more regions providing data, ideally investigate a definition that exist in the Grid Code to incorporate.
- The Workgroup discussed the need for frequency data from single, specific PMUs at discrete points in each region, not averaged data, to accurately reflect local grid conditions and enable point-based analysis. It was noted that averaging across a region could mask important differences, as frequency can vary significantly within large regions. It doesn't matter if the specific PMU changes per event, as long as the data is complete for that event. The Proposer supported this point of discussion.

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- Relying on a single PMU per region is problematic due to potential data quality issues and confidentiality concerns. Averaging multiple PMUs within a region is necessary to ensure reliability and representativeness, as a single PMU may not always provide accurate or available data. It was highlighted that the region is best described by the collective data from all PMUs within it, not just one. An investigation with TOs is needed as to whether the data could be shared. The request for information would be tied with Action 17.
- Suggestion to go back through historic data to assess whether averaging PMU data across a region hides significant deviations. Analysing historical data by comparing aggregated regional averages to individual PMU records, especially during major frequency events could determine if important differences are being masked.

The Proposer concluded that individual PMU data should be published rather than averaged data. If data quality is a concern, NESO should publish multiple PMU records per region so users can choose reliable ones for analysis, as averaging can obscure important details.

The NESO SME required clarification as there are two separate issues: one is sharing PMU data close to an incident as part of system incident reporting, and the other is the broader provision of real-time PMU data across the country to all users, which involves different tools and considerations.

The Proposer responded the focus should be on system incident reporting for events defined in the grid code, and that broader data availability is a separate question to be considered for future modifications.

A Workgroup member stressed that TO data is consumer-funded and should be made available as per license requirements. They did not support averaging PMU data over multiple units, as it loses the intended detail. Suggestions of not naming individual PMUs were made and instead using representative PMUs for defined areas, allowing NESO and TOs flexibility as long as the data accurately represents the region.

Working Days

The Workgroup discussed concerns of defining working days as this could lead to shifting deadlines due to holidays, making management difficult and potentially causing delays in report delivery. Concerns were also expressed about overlapping report deadlines during resource-constrained periods and stressed the need to account for these scenarios when defining reporting requirements. A suggestion to specifying the number of working days after a given week, regardless of how many working days are in that week could address this.

The Chair requested that once the legal text is circulated with the updated wording the Workgroup should review and make further comments (**Action 21**).

Next Steps

- Action owners to provide information in time for Workgroup 4.
- Chair to circulate updated slidepack.
- NESO SME to circulate legal text when wording has been updated.

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Actions

For the full action log, click [here](#).

Action Number	Workgroup Raised	Owner	Action	Status	Date due by
04	WG1	GW	Assess cost and workload implications for Transmission Owners (TOs) providing additional data.	Open	Ongoing
07	WG1	MB	Suggest thresholds for publishing larger incidents weekly and smaller ones monthly; NESO to consider if this mitigates workload concerns.	Open	WG3
09	WG2	MD	Provide sources or a public version of the NESO data classification guidelines.	Closed	WG3
10	WG2	GW	Investigate whether TO data is published and where it can be accessed.	Closed	WG3
11	WG2	AL	Prepare a short presentation on phase jumps.	Open	WG3
12	WG2	All	Review the GC0181 defect description to determine if phase jump data can be included.	Open	WG3
13	WG2	JSC	Confirm the timing for when 73 PMUs (or at least 5) will be operational and consider regional coverage.	Closed	WG3
14	WG2	FK	Propose amended draft Legal text for the solution.	Closed	WG3

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15	WG2	FK & JSC	Confirm GB alignment with the European standard of 0.5 seconds for frequency recording.	Closed	WG3
16	WG3	MD	Provide the data guidelines and check if the direct policy documents can be shared with the Workgroup.	Open	WG4
17	WG3	FK	Provide more information regarding confidentiality, costs, and data sharing with the TOs.	Open	WG4
18	WG3	JAK	Provide information on PMUs being installed are of the same technology or specification and to clarify their technical capabilities.	Open	WG4
19	WG3	GN	Review and improve the framing of the cost-benefit analysis for blackout prevention, specifically by comparing the expected probability of a blackout event to the calculated benefit of enhanced reporting.	Open	WG4
20	WG3	MC	Provide specific information on the system incident report spreadsheet such as format changes.	Open	WG4
21	WG3	All	Review legal text when circulated with updated wording.	Open	WG4

Attendees

Name	Initial	Company	Role
Jess Rivalland	JR	Code Administrator	Chair
Tammy Meek	TM	Code Administrator	Technical Secretary
Guy Nicholson	GN	Statkraft	Proposer

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Ahmed Koriem	AK	NESO	Observer
Andrew Allan	AA	RWE	Alternate
Andrew Urquhart	AU	SSE	Workgroup Member
Alice Siri	AS	Ofgem	Authority Representative
Frank Kasibante	FK	NESO	NESO SME
Gareth Williams	GW	On behalf of STC Panel	Workgroup Member
Jeno Abraham- Kodmon	JAK	NESO	NESO SME
Mathew Chandy	MC	EDF Energy	Workgroup Member
Matthew Dixon	MD	NESO	Alternate
Shahzad Haider	SH	NESO	Observer