

Public

GC0181 – Enhance the Effectiveness of System Incidents Reporting

Workgroup Number 3 – 26 January 2026

Online Meeting via Teams

WELCOME

Agenda

Topics to be discussed	Lead
Welcome	Chair
Timeline and objectives	Chair
Actions	Chair
NESO Actions	NESO Representative
Impact assessment	Proposer
System Incidents Report	NESO Representative
AOB	Chair
Next Steps	Chair

Expectations of a Workgroup Member

Contribute to the discussion

Be respectful of each other's opinions

Language and Conduct to be consistent with the values of equality and diversity

Do not share commercially sensitive information

Be prepared – Review Papers and Reports ahead of meetings

Complete actions in a timely manner

Keep to agreed scope

Email communications to/cc'ing the .box email

Your Roles

Help refine/develop the solution(s)

Bring forward alternatives as early as possible

Vote on whether or not to proceed with requests for Alternatives

Vote on whether the solution(s) better facilitate the Code Objectives

CM0181 Objectives and Timeline

Timeline	Workgroups	Objectives
Workgroup 3	26 January 2026	Considerations and legal text
Workgroup 4	17 February 2026	Considerations and legal text
Workgroup 5	05 March 2026	Review Workgroup Consultation and legal text
Workgroup 6	17 March 2026	Finalise Workgroup Consultation
Workgroup Consultation	23 March 2026 to 15 April 2026	
Workgroup 7	28 April 2026	Review Consultation feedback and legal text
Workgroup 8	12 May 2026	Finalise Report
Workgroup 9	26 May 2026	Agree ToR met /Workgroup Vote
Workgroup Report to Panel	17 June 2026	Panel sign off ToR
Post Workgroups		
Code Administrator Consultation	29 June 2026 to 29 July 2026	
Draft Final Modification to Panel	19 August 2026	
Final Modification to Ofgem	07 September 2026	
Implementation Date	10 Business Days after Authority Decision	

GC0181 Actions

Action Number	Workgroup Raised	Owner	Action	Comments	Due by	Status
4	WG1	GW	Assess cost and workload implications for Transmission Owners (TOs) providing additional data.		WG 2	Open
7	WG1	MB	Suggest thresholds for publishing larger incidents weekly and smaller ones monthly; NESO to consider if this mitigates workload concerns.	MB provided a sketch for NESO to consider	WG 2	Open
9	WG2	MD	Provide sources or a public version of the NESO data classification guidelines.		WG 3	Propose to close
10	WG2	GW	Investigate whether TO data is published and where it can be accessed.		WG 3	Propose to close
11	WG2	AL	Prepare a short presentation on phase jumps.		WG 3	Open
12	WG2	JR/ LT	Review the GC0181 defect description to determine if phase jump data can be included.		WG 3	Open
13	WG2	JSC	Confirm the timing for when 73 PMUs (or at least 5) will be operational and consider regional coverage.		WG 3	Propose to close

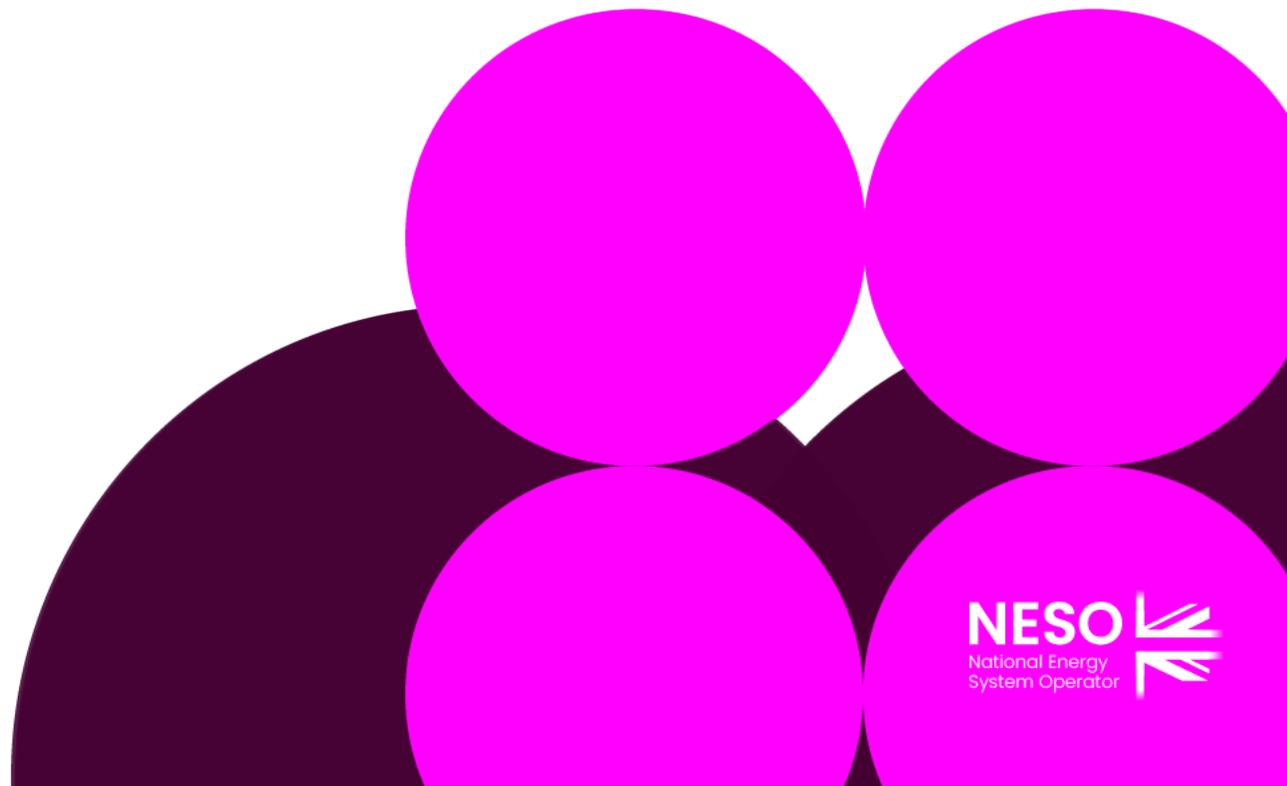
GC0181 Actions

Action Number	Workgroup Raised	Owner	Action	Comments	Due by	Status
14	WG2	FK	Propose amended draft Legal text for the solution.		WG3	Propose to close
15	WG2	FK/ JSC	Confirm GB alignment with the European standard of 0.5 seconds for frequency recording.		WG3	Propose to close

NESO Actions

Frank Kasibante, Jeno Abraham-Kodmon,
Matthew Dixon

NESO



Data Classification Guidelines

Action 09

Data Classification Guidelines

Action 09: Provide sources or a public version of the NESO classification guidelines.

Unfortunately, public versions of NESOs data classification and sharing guidelines are not available. However, these sources are available upon request. Extra information (compared to last WG) has been obtained and will be circulated afterwards; all information contained within has come from NESO internal sources.

TO Engagement

Action 10

TO Engagement

To what extent can all TOs share 'real time' PMU data with Industry?

1. All PMUs, all data, to all Users?

- All TOs suggested that at this stage it would not be possible to share real-time PMU data with anyone who wants it
- There are confidentiality considerations for Users as well as TOs
- Providing all data via PMUs is reliant on the roll out programme successfully completing. Implementing the technology to support increased reporting to a wider audience than NESO is likely to be expensive and require significant resource (TOs don't have any formal estimate of these costs)

2. Some PMUs, some data, restricted to specific licenced Users with permissions?

- This would be possible, but again the data architecture would need to be considered. This would not currently be readily available

Anticipated PMU Rollout

Action 13

Anticipated PMU Rollout

1. Scottish have delivered their PMUs ie North and South Scotland for the entire area)
2. NGET has currently plan on delivering (hopefully by end of March 2026) 24 for England & Wales, for FATE-R for 2PMUs per DNO zone (ie 12 DNO zones). 11 have been delivered so far.
3. There are other PMUs being considered for Inertia and restoration (48 in total) i.e, 2 PMUs per restoration zone.
4. For normal Freq measurements (end of March 2026), Restoration (anticipated to be complete by end of 2027)
5. I.E – Anticipated complete roll out of all units for Freq, Inertia & System restoration complete by December 2027.

Amended draft legal text

Action 14

NESO Proposal alignment – Action 14

Modification Proposal

NESO Opinion

NESO Alternative

Reduce the reporting time from the current three months to one week.

If required, can be met by increasing staff (1 FTE) but may not be worth it – NESO to present the cost of this.

Action to present the benefit of modification improvement

Reduce the reporting time from the current three months to one month.

Increase the sampling rate from the existing 1 second to 100 milliseconds.

Can be met once PMU data available

Increase the sampling rate from the existing 1 second to 100 milliseconds.

Gather frequency measurements from at least five different regions across Great Britain

Could be met but would cost extra resource. Workgroup need to convince Ofgem of what value this would provide.

Provide a representative figure of GB system frequency.

Action to present the benefit of modification improvement

GB alignment with European Standard

Action 15

GB alignment with European Standard

The time delay stated in WG1 was not in relation to frequency incident reporting, rather, in relation to active power frequency response of HVDC.

Parameters	Time
Maximum admissible initial delay t_1	0,5 seconds
Maximum admissible time for full activation t_2 , unless longer activation times are specified by the relevant TSO	30 seconds

Table 3: Parameters for full activation of active power frequency response resulting from frequency step change.

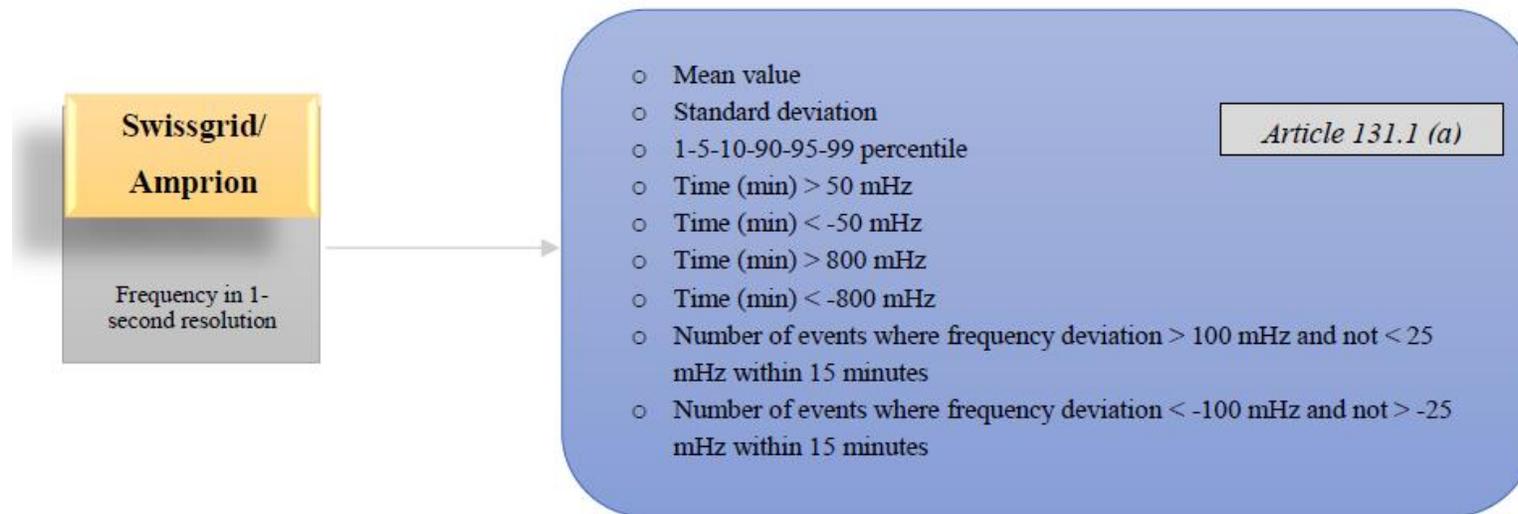
European Commission Regulations, 2016/1447, Annex II, Table 3

GB alignment with European Requirement

Synchronous area: Continental Europe

According to Article 118 of SO GL, the Continental Europe synchronous area and associated monitors are:

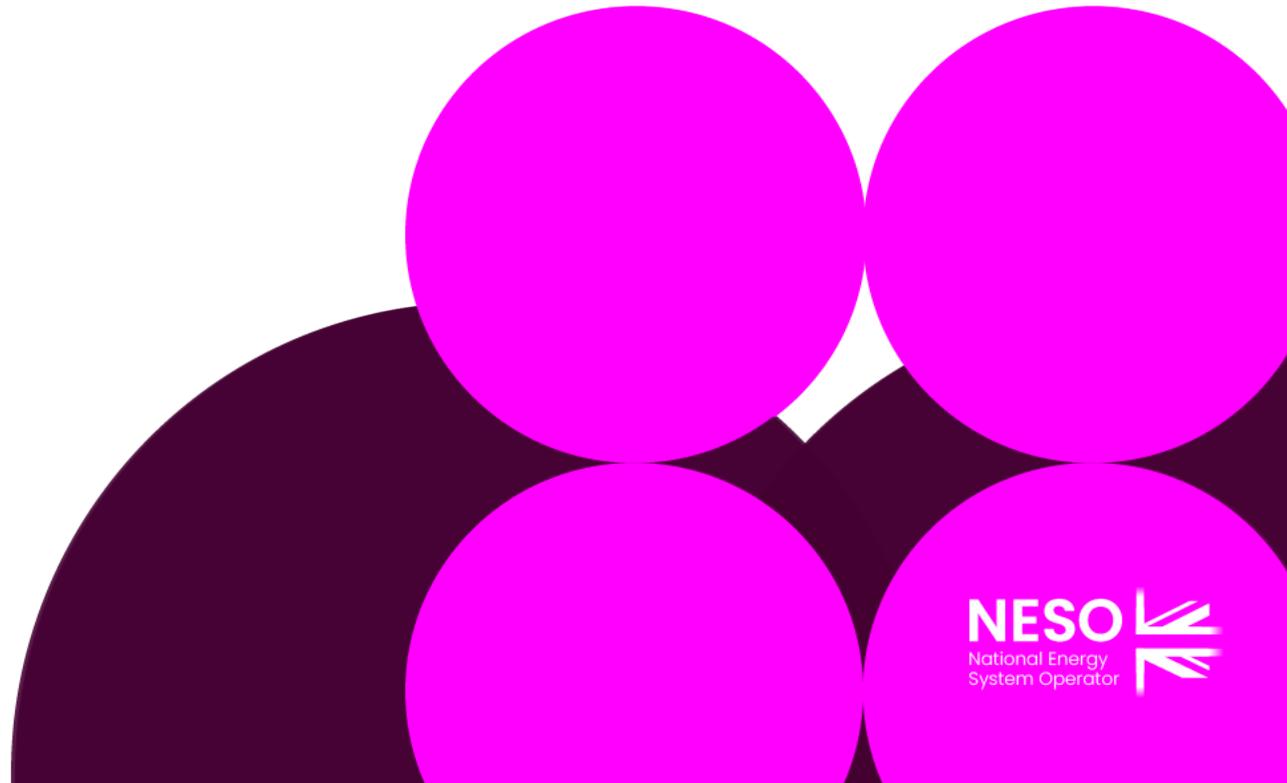
- **Swissgrid** (south CE), **Amprion** (north CE),



Load-Frequency Control (LFC) Annual Report – ENTSO-E

Impact assessment

Guy Nicholson – Statkraft



Public

The Iberian blackout cost has been estimated at around €1bn, but there is a considerable range of estimates. E.g.

- [Experts warn of €1 billion economic impact after Iberian Peninsula blackout | Caliber.Az](#)
- [Spain could suffer over €4 billion in losses from historic blackout - Olive Press News Spain](#)
- [The economic impact of the blackout in detail](#)

Spanish GDP in 2024 was 1.72TrillionUSD up 3% in 2025 to 1.77TrillionUSD which is 1.52Trillion EUR which is €4.16 Bn per day.

- <https://www.bbvaresearch.com/en/publicaciones/spain-economic-outlook-december-2025/>
- <https://tradingeconomics.com/spain/gdp>

The blackout lasted typically for 10 hours so the impact on GDP was $(1/10 * 2.4 / 4.16) = 57\%$ of GDP. .

Spain benefited from AC restoration from France as well as black start by power stations, which helped speed the restoration.

A GB blackout could be expected to last longer, as GB does not have any Alternate Current (AC) restoration options – let's assume an average of 3 days.

UK GDP in 2024 was 2.78 Trillion GDP in 2024

- <https://www.statista.com/statistics/281744/gdp-of-the-united-kingdom/>

Northern Ireland GDP was 2.3% of UK in 2023

- <https://www.ons.gov.uk/economy/grossdomesticproduct>

A loss of 57% of GB GDP for 3 days would cost $2.8 / 365 * 3 * .57 = £13bn$

Assume that NESO have one person dedicated to producing current OC3.4 for 1 week per month with an assumed total employee cost of £200k/annum, then the cost of this OC3.4 reporting is currently £50k/annum. Assume that making the report weekly takes twice as long, then the cost increase is £50k/annum.

Therefore, if this work were carried out for $(13,000,000,000 / 50,000) = 260,000$ years it would cost the same as a blackout.

If this work avoids a blackout every 260,000 years, the cost would equal the benefit.

System Incidents Report

Frank Kasibante and Jeno Abraham-Kodmon

NESO

System Incidents Report (OC3.4)

Reporting frequency
and Resource review

Methodology

On Monday 19th January 2026, NESO colleagues held an internal full-day workshop to detail the time and resources required to currently produce System Incidents Report as described in Grid Code OC3.4, including each task completed in producing the report, the time taken to complete each of these and any considerations for the GC0181 workgroup.

NESO also explored different options and improvements to accelerate the reporting process including:

- Reporting frequency (weekly, bi-weekly, monthly)
- Hiring an extra FTE (Full Time Employee)
- The effect of complex system conditions (i.e.: storms, widespread system disturbances)
- Availability and Accessibility of PMU data

Results

Once all the tasks had been identified with an appropriate time taken, the following results were calculated:

Reporting frequency	Current and possible scenarios	Total Time [h]
Monthly	Current method	98.5 (13.3 working days)
Weekly	Current method	85.0 (11.5 working days)
	Current method with 1 extra FTE	73.0 (9.9 working days)
	Current method with Normal Conditions	68.0 (9.2 working days)
	Current method with 1 extra FTE + Normal Conditions	64.5 (8.7 working days)
	PMU	59.0 (8 working days)
	PMU + 1 extra FTE	43.0 (5.8 working days)
	PMU + Normal Conditions	30.5 (4.1 working days)
	PMU + 1 extra FTE + Normal Conditions	27.0 (3.6 working days)

Considerations (1/2)

As well as producing these time frames, NESO discussed considerations worth raising with the workgroup:

- **Availability:** IT systems, holiday periods, supporting Control Room during significant events, etc...
- **Workload:** Other works outside of this incident reporting to contend with
- **Complexity:** Many timings based upon assumed number and complexity of incidents, but these vary across the year.
- **Data Availability:** Achieving timings with PMU data availability require more clarification that is currently unavailable as PMU's IT systems are still work in progress.
- **Data Historian Replacement Project:** New product may speed up certain processes and replace certain tasks but currently unknown.
- **5 data regions:** Producing results for 5 different geographic regions will increase every reporting time frame by at least 8 hours (approx. 1 working day).

Considerations (2/2)

Margin shortage notifications are catered by using CMN (Capacity Margin Notice) and EMN (Electricity Margin Notice). These notifications (BMRS System Warnings) are published on the ELEXON website for everyone. These can help to notify everyone about possible energy shortage that could lead to total or partial shutdown of the national electricity transmission system (NETS).

What would Users do differently if the OC3.4 reporting time is reduced from 1 month to a bi-weekly report and how this can help in avoiding total or partial shutdown of the national electricity transmission system (NETS)?

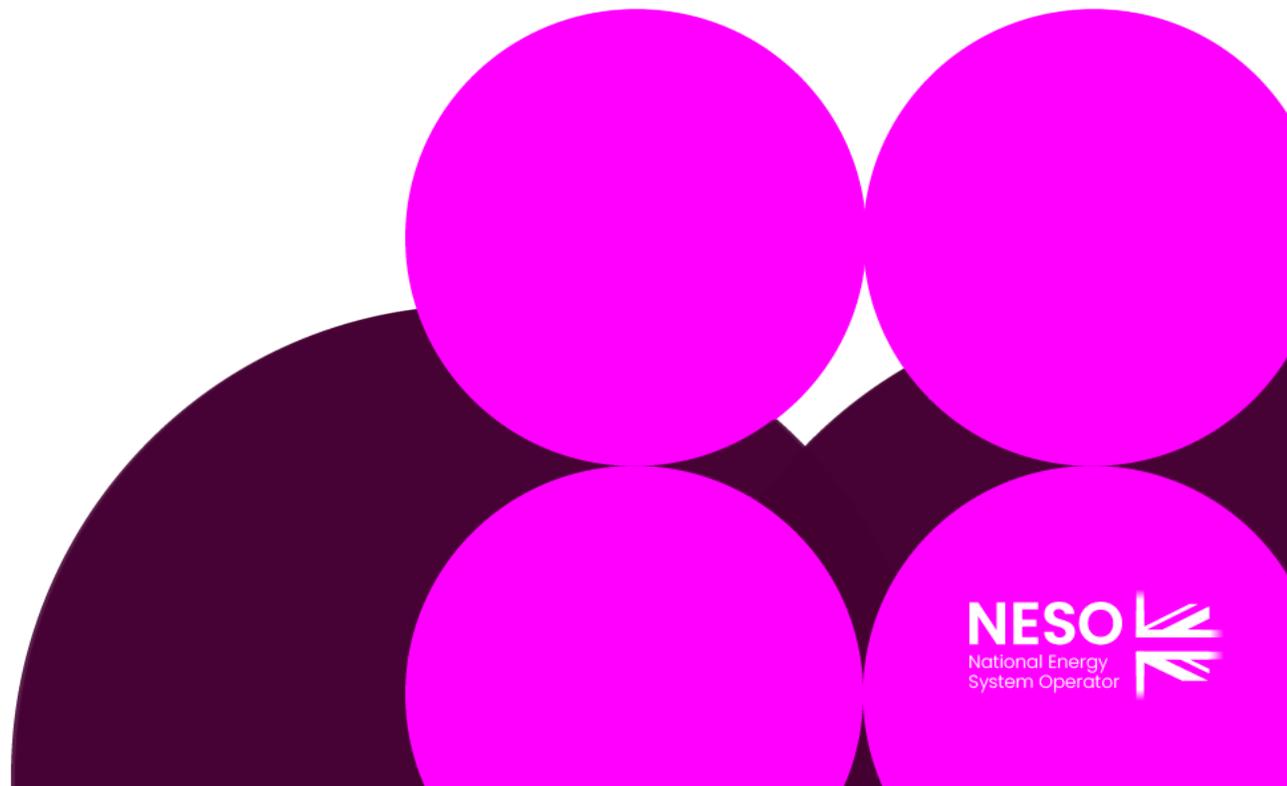
Can a detailed answer be provided?

Conclusions

- Producing reports weekly is going to be almost impossible to produce consistently for every week, even with PMU data accessibility and an extra FTE.
- Wider coverage of the PMU data availability will have the highest impact on reducing incident reporting timings.
- Hiring an extra FTE will not significantly reduce the timescale.
- Producing data for 5 regions will add at least 8 hours (approx. 1 working day) onto the reporting time.
- Bi-weekly reporting is possible for most of the year excluding Bank Holidays and complex system conditions weeks once Wider coverage of the PMU data is available and accessible to NESO.

Any Other Business

Jess Rivalland – NESO Code Administrator



Next Steps

Jess Rivalland - NESO Code Administrator

