Public

CMP405: TNUoS Locational Demand Signals for Storage

Workgroup 7
29 October 2026

Online Meeting via Teams

NESO
National Energy System Operator

WELCOME



NESO
National Energy System Operator

Public

Agenda

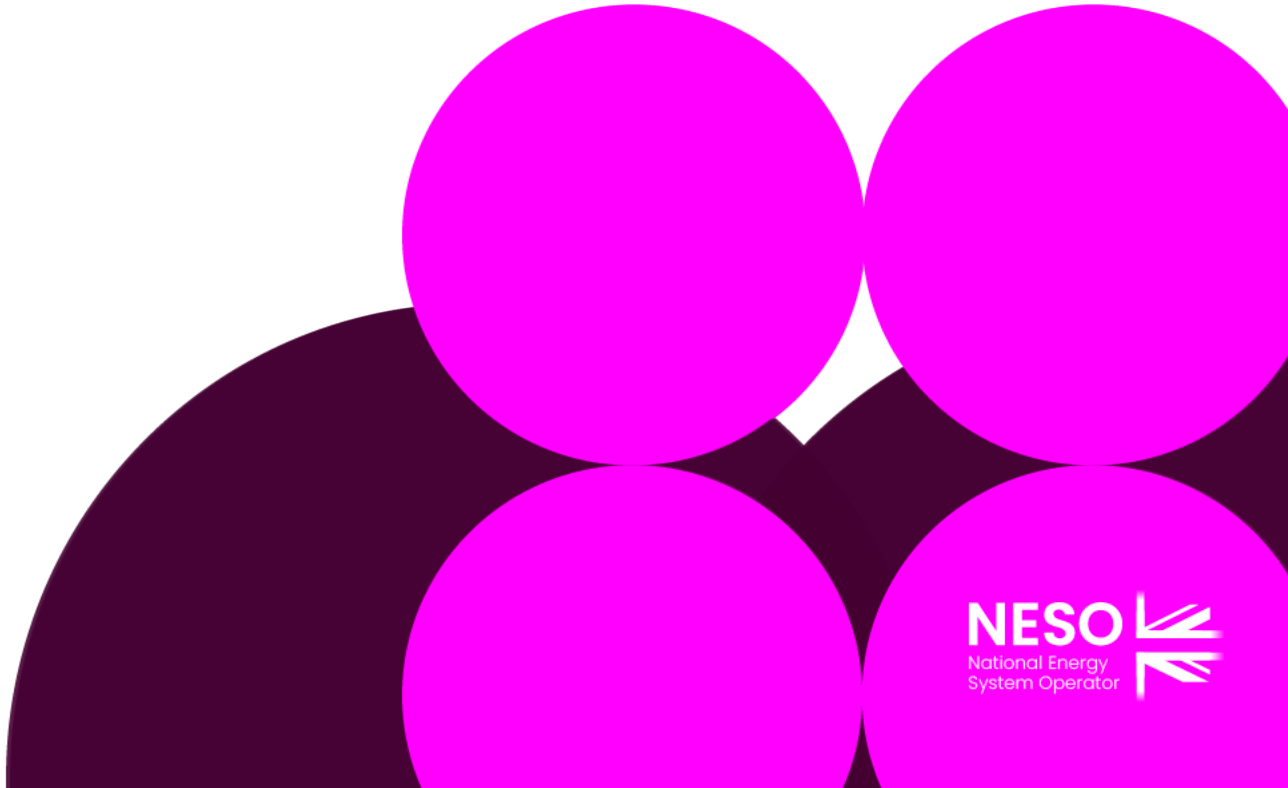
Topics to be discussed	Lead
Introductions	Chair
Code Modification Process Overview • Workgroup Responsibilities • Workgroup Alternatives and Workgroup Vote	Chair
Objectives and Timeline • Walk-through of the timeline for CMP405	Chair
Review Terms of Reference	All
Proposer presentation	Proposer
Questions from Workgroup Members	All
Agree Terms of Reference	All
Cross Code Impacts	All
Any Other Business	Chair
Next Steps	Chair

NESO
National Energy System Operator

Public

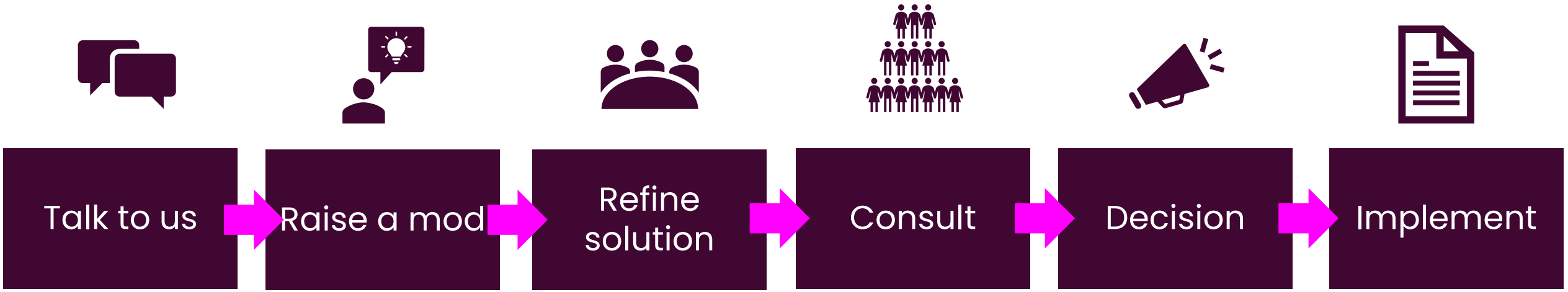
Modification Process

Ayo Bammeke – NESO Code Administrator



Public

Code Modification Process Overview



Forums	Panels	Workgroups (Workgroup Consultations)	Ofgem/Panel

Public

Refine Solution

Workgroups



- If the proposed solution requires further input from industry in order to develop the solution, a Workgroup will be set up.
- The Workgroup will:
  - further refine the solution, in their discussions and by holding a **Workgroup Consultation**
  - Consider other solutions, and may raise **Alternative Modifications** to be considered alongside the Original Modification
  - Have a **Workgroup Vote** so views of the Workgroup members can be expressed in the Workgroup Report which is presented to Panel

Public

Consult

Code Administrator Consultation

- The Code Administrator runs a consultation on the **final solution(s)**, to gather final views from industry before a decision is made on the modification.

- After this, the modification report is voted on by Panel who also give their views on the solution.



Decision



- Dependent on the Governance Route that was decided by Panel when the modification was raised

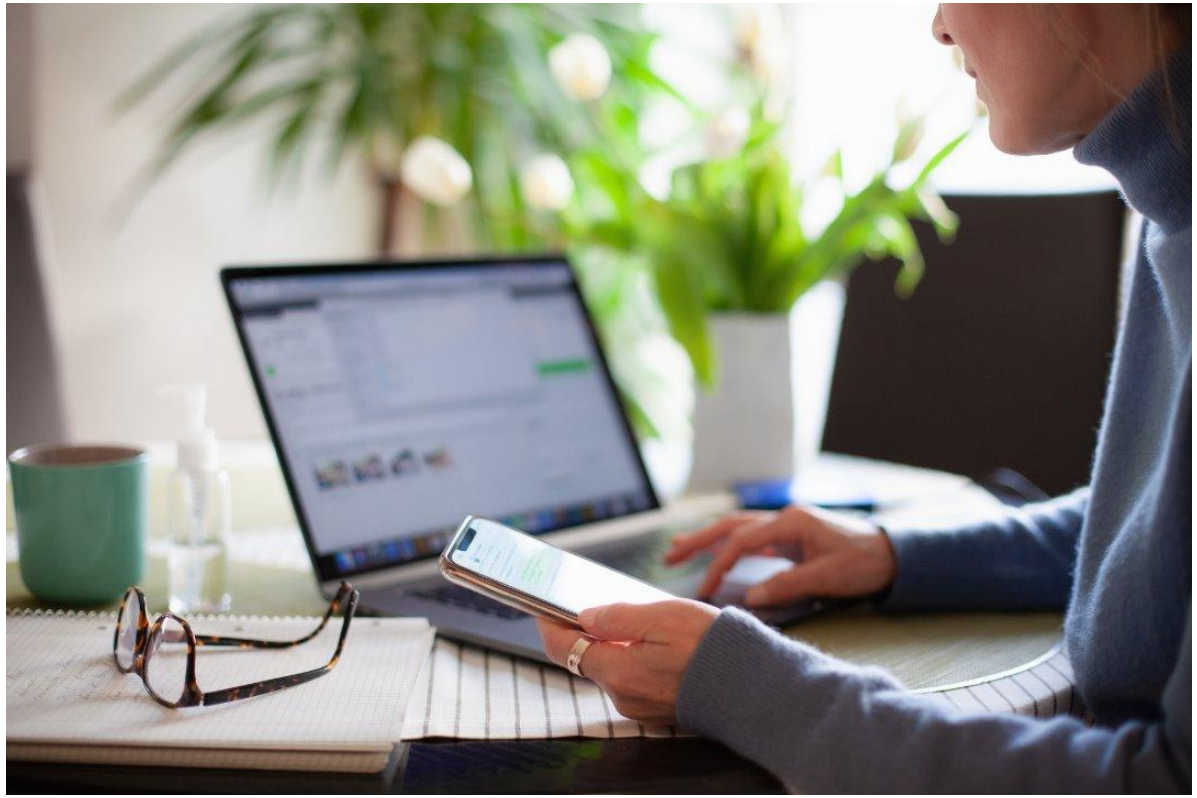
- **Standard Governance:** Ofgem makes the decision on whether or not the modification is implemented

- **Self-Governance:** Panel makes the decision on whether or not the modification is implemented
    - an appeals window is opened for 15 days following the Final Self Governance Modification Report being published

Public

Implement

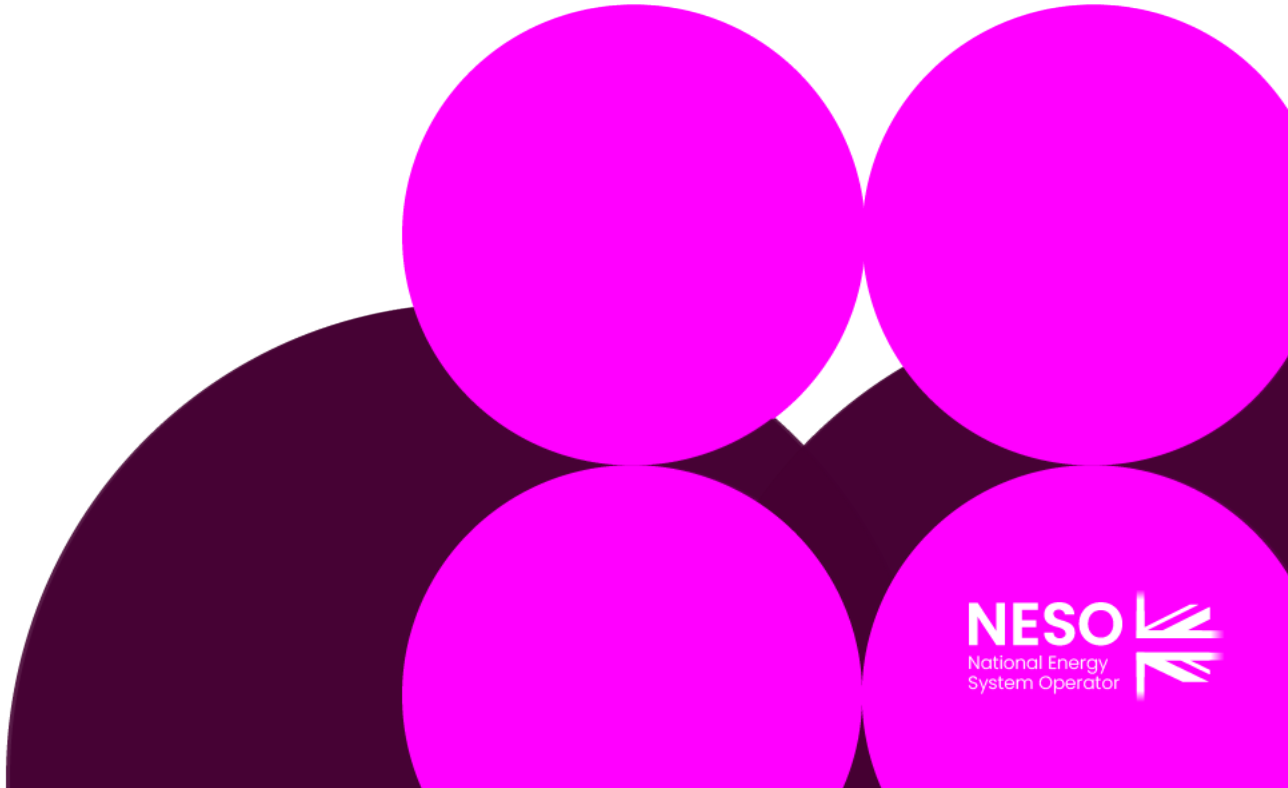
- The Code Administrator implements the final change which was decided by the Panel / Ofgem on the agreed date.



Public

Workgroup Responsibilities and Membership

Ayo Bammeke – NESO Code Administrator



Public

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

NESO
National Energy System Operator

Public

Workgroup Membership

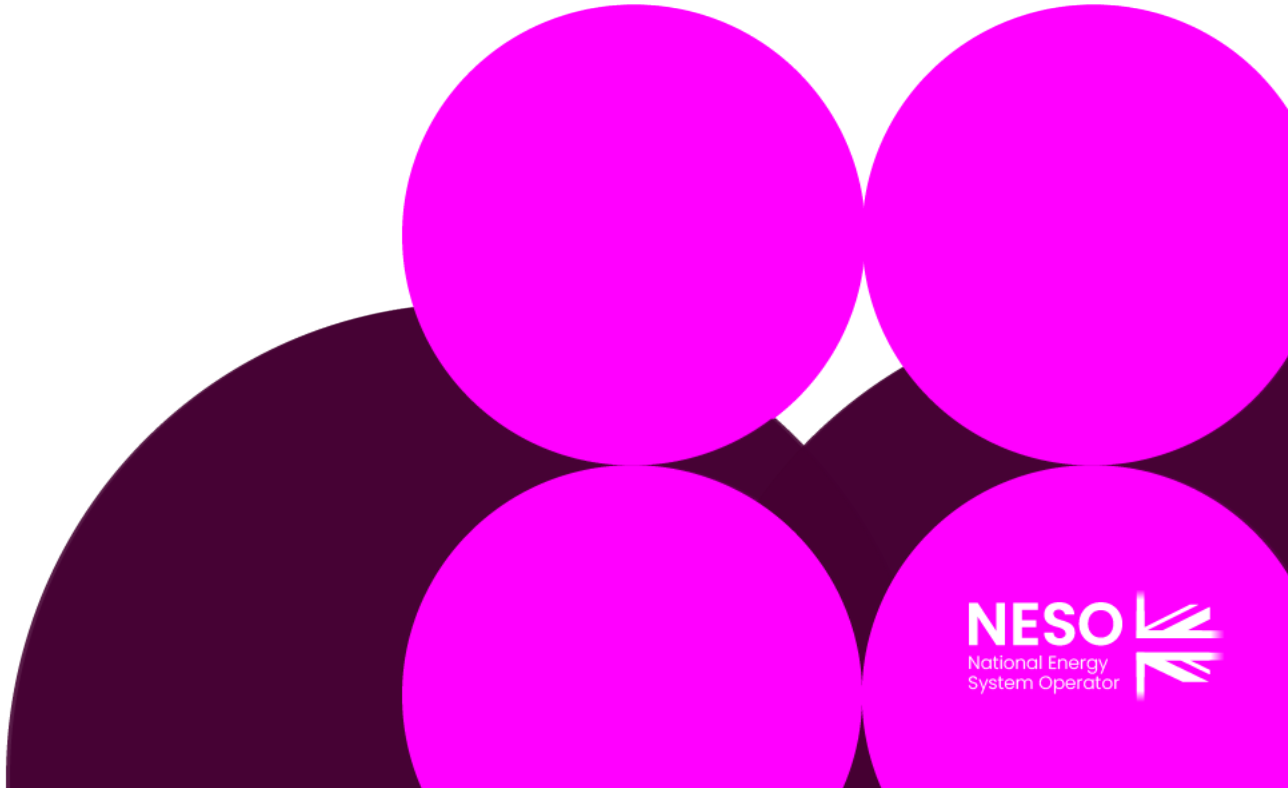
Role	Company	Name	Alternate
Proposer	SSE Generation	Damien Clough	Susan Stead /John Tindal
Workgroup Member	NGET	Benchohra Sayah	Matthew Paige Stimson
Workgroup Member	EDF	Binoy Dharsi	Simon Vicary
Workgroup Member	Field Energy	Andrew Enzor	Damian Jackman
Workgroup Member	Energy Grid Power Ltd	John Prime	Damian Bach
Workgroup Member	CUSC Panel member	Kyran Hanks	
Workgroup Member	Sembcorp	Mark Field	
Workgroup Member	Qair Renewables UK Limited	Lamin Saidy Vulart	Vivek Kodige
Workgroup Member	Drax	Paul Youngman	
Workgroup Member	Statera Energy	Phoebe Finn	Callum Chalmers
Workgroup Member	Scottish Power	Priyanka Mohapatra	Ryan Ward
Workgroup Member	Octopus Energy	Sam Whitworth	Emma Burns
Workgroup Member	First Hydro Company	Simon Lord	Andrew Rimmer
Workgroup Member	NESO	Stephen Dale	
Workgroup Member	Zenobe	Tom Palmer	
Workgroup Member	RWE	Tom Steward	Xuefei Zheng
Authority Representative	Daniel De Wijze	Ofgem	
Observer	SSE	Angeles Sandovall Romero	
Observer	Pulse Clean Energy	Hudson Farley-Moore	Oisin Donelly
Observer	Qair Renewables UK Limited	Thomas O'Neill	

NESO
National Energy System Operator

Public

Workgroup Alternatives and Workgroup Vote

Ayo Bammeke – NESO Code Administrator



What is the Alternative Request?

What is an Alternative Request? The formal starting point for a Workgroup Alternative Modification to be developed which can be raised up until the Workgroup Vote.

What do I need to include in my Alternative Request form? The requirements are the same for a Modification Proposal you need to articulate in writing:
- a description (in reasonable but not excessive detail) of the issue or defect which the proposal seeks to address compared to the current proposed solution(s);
- the reasons why the you believe that the proposed alternative request would better facilitate the Applicable Objectives compared with the current proposed solution(s) together with background information;
- where possible, an indication of those parts of the Code which would need amending in order to give effect to (and/or would otherwise be affected by) the proposed alterative request and an indication of the impacts of those amendments or effects; and
- where possible, an indication of the impact of the proposed alterative request on relevant computer systems and processes.

How do Alternative Requests become formal Workgroup Alternative Modifications? The Workgroup will carry out a Vote on Alternatives Requests. If the majority of the Workgroup members or the Workgroup Chair believe the Alternative Request will better facilitate the Applicable Objectives than the current proposed Original solution, the Workgroup will develop it as a Workgroup Alternative Modification.

Who develops the legal text for Workgroup Alternative Modifications? NESO will assist Proposers and Workgroups with the production of draft legal text once a clear solution has been developed to support discussion and understanding of the Workgroup Alternative Modifications.

NESO
National Energy System Operator

Can I vote? And What is the Alternative Vote?

To participate in any votes, Workgroup members need to have attended at least 50% of meetings. The vote shall be decided by simple majority of those present at the meeting at which the vote takes place (whether in person or by teleconference)

Stage 1 – Alternative Vote

- Vote on whether Workgroup Alternative Requests should become Workgroup Alternative CUSC Modifications.

- The Alternative vote is carried out to identify the level of Workgroup support there is for any potential alternative options that have been brought forward by either any member of the Workgroup OR an Industry Participant as part of the Workgroup Consultation.

- **Should the majority of the Workgroup OR the Chair believe that the potential alternative solution may better facilitate the CUSC objectives than the Original then the potential alternative will be fully developed by the Workgroup with legal text to form a Workgroup Alternative CUSC modification (WACM)** and submitted to the Panel and Authority alongside the Original solution for the Panel Recommendation vote and the Authority decision.

NESO National Energy System Operator

Public

Can I vote? And What is the Workgroup Vote?

To participate in any votes, Workgroup members need to have attended at least 50% of meetings. The vote shall be decided by simple majority of those present at the meeting at which the vote takes place (whether in person or by teleconference)

Stage 2 – Workgroup Vote

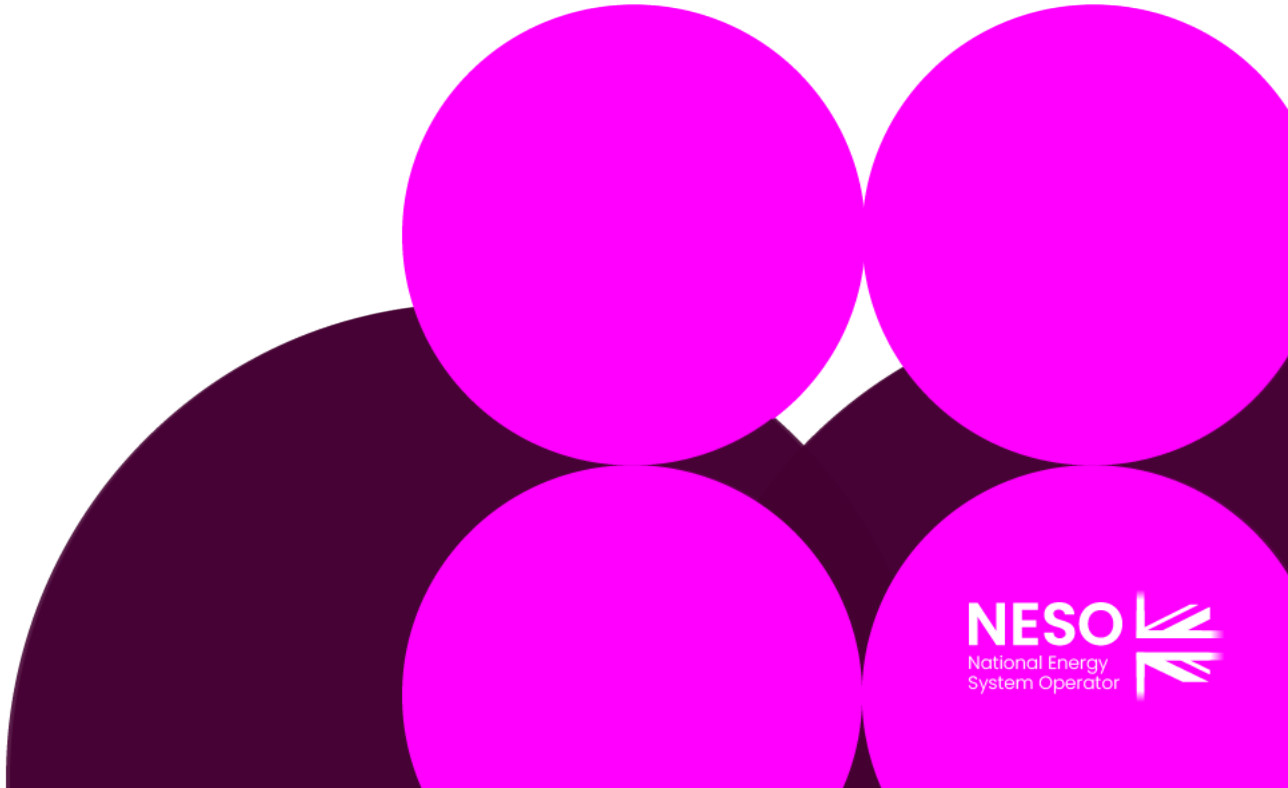
- 2a) Assess the original and Workgroup Alternative (if there are any) against the relevant Applicable Objectives compared to the baseline (the current code)
- 2b) Vote on which of the options is best.

Alternate Requests cannot be raised after the Stage 2 – Workgroup Vote

Public

Objectives and Timeline

Ayo Bammeke – NESO Code Administrator



Public

Previous CMP405 Objectives and Timeline

Date	Event	Significance
10 November 2022	CMP405 submitted by SSE Generation Ltd	Formal proposal raised
25 November 2022	Proposal considered by CUSC Panel	Workgroup route established
28 November to 19 December 2022	Initial Workgroup nominations	Membership sought
13 January 2023	Workgroup 1	Initial development
16 February 2023	Workgroup 2	Early analytical discussion
10 August 2023	Workgroup 3	Workgroup resumed after a gap
9 November 2023	Workgroup 4	LCP Delta and Frontier Economics analysis considered; design-option discussion
11 December 2023	Workgroup 5	Further development and evidence questions
7 February 2024	Workgroup 6	Import ALF and Constrained ALF discussed; consumer-benefit evidence challenged
17 December 2024	Proposer requested urgency	Attempt to accelerate the modification
10 January 2025	Special CUSC Panel considered urgency	Panel supported urgency by majority
20 January 2025	Ofgem urgency decision	Urgency rejected; standard governance retained
August 2026	Panel prioritisation review	CMP405 considered for renewed progression
28 August 2026	Latest internal prioritisation file updated	Restart activity reflected
8 September 2026	Internal chair tracker updated	High priority; timeline to September Panel
9 September 2026	NESO webpage updated	Status confirmed as current Workgroup
September 2026	Revised timeline at CUSC Panel	Next key process milestone; exact date and subsequent dates remain unconfirmed

National Energy System Operator

18

Future CMP405 Objectives and Timeline

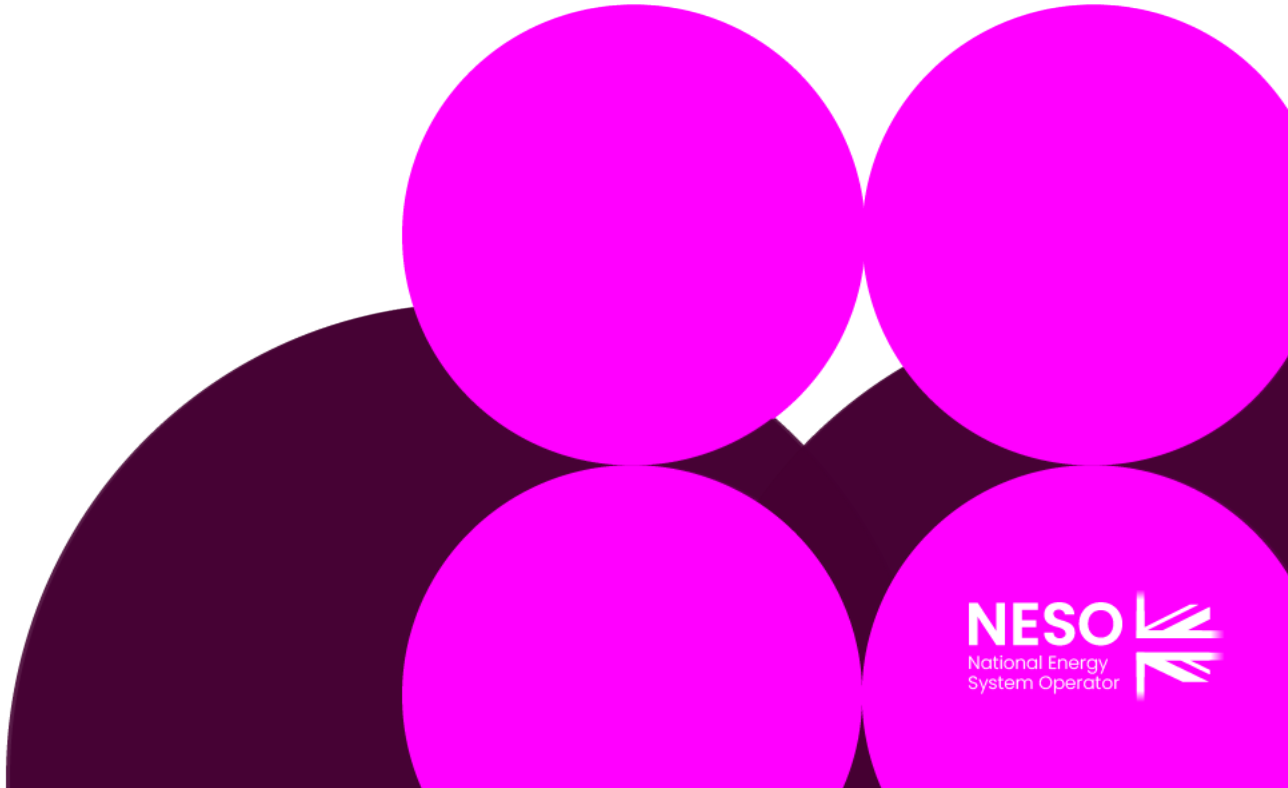
Timeline	Date	Objective
Pre-Workgroup	23 September 2026	Timeline submitted to CUSC Panel
Pre-Workgroup	Closes 30 September	Workgroup nominations
WG7	29 October 2026	Restart modification; review defect, updated solution, Terms of Reference and workplan
WG8	19 November 2026	Review updated proposal, solution design and evidence requirements
WG9	10 December 2026	Review charging analysis, impacts, implementation considerations and legal-text approach
WG10	14 January 2027	Review updated modelling and stakeholder feedback; refine solution
WG11	4 February 2027	Review legal text, impacts, alternatives and consultation questions
WG12	25 February 2027	Approve Workgroup Consultation and draft legal text
Workgroup Consultation	4 to 25 March 2027	Three-week Workgroup Consultation
WG13	15 April 2027	Review Workgroup Consultation responses and agree required changes
WG14	6 May 2027	Review and finalise the Workgroup Report, solution and legal text
WG15	27 May 2027	Agree Terms of Reference met and undertake Workgroup vote
Workgroup Report to Panel	17 June 2027	Report issued on the Thursday before the CUSC Panel
CUSC Panel	25 June 2027	Panel sign-off that the Workgroup has met its Terms of Reference
Code Administrator Consultation	1 to 21 July 2027	15-working-day Code Administrator Consultation
CAC analysis / DFMR drafting	22 July to 12 August 2027	Analyse responses and prepare the Draft Final Modification Report
DFMR issued to Panel	19 August 2027	DFMR issued on the Thursday before the CUSC Panel
CUSC Panel	27 August 2027	Panel recommendation vote
FMR vote check	30 August to 3 September 2027	Final Modification Report issued to Panel to check recorded votes
Final Modification Report to Ofgem	6 September 2027	Submit Final Modification Report to the Authority
Ofgem decision / implementation	TBC	Decision and implementation dates to be confirmed

National Energy System Operator

Public

Review Terms of Reference

Ayo Bammeke – NESO Code Administrator



Public

Terms of Reference

Workgroup Term of Reference	
a)	Consider EBR implications
b)	Consider the analysis was undertaken as part of CMP393
c)	Consider the principles of wider TNUoS methodology, and the interaction between the cost of constraints and cost of transmission
d)	Consider the analysis done in the TNUoS Storage Subgroup
e)	Consider the Authority Decision for CMP393 and the impacts on CMP405
f)	Consider whether storage connected at Distribution should receive this benefit
g)	Consider crossovers with LDES Cap and Floor programme, in particular work on the licence condition around operating as LDES
h)	Consider ongoing NESO work on storage behind constraints and Ofgem work on repetitive retrading
i)	Consider interactions with ongoing Ofgem policy work on RNP

Public

Proposer's Solution: Background; Proposed Solution; Scope; and Assessment vs Terms of Reference

Damian Clough – SSE

CMP405

History of the Mod

29/10/26



TNUoS Charges

- TNUoS Demand Charges have two sets of charges based on whether the User is HH (non Domestic) or NHH.
  - For HH the charge is based on how much demand is taken over the Triad Periods
  - For NHH its over the periods 4 to 7pm 365.
- The DCLF Model produces a number of different locational signals which are then turned into tariffs. For Demand these signals are a Year Round and a Peak Signal.
  - To turn into a Demand tariff these signals are added together (YR and Peak) to make one locational element
- Prior to work on the Residuals a Demand Residual was added to the Locational Signals above to make. Locational Signals in the North and Scotland were negative but due to the size of the Demand Residual the Final Demand tariffs ended up being positive.
- When the Residual was moved to a separate charge this exposed the Negative Locational Signals

TNUoS Charges& Mod

- The Negative tariff was deemed a perverse signal and was therefore capped at 0. I.e. we shouldn't be encouraging people to take more demand over the Triad Periods
- When capping at 0, Ofgem noted that they expected Industry to readdress this at a later point.
- CMP405 was raised by SSE: **Overview:** Currently Locational Demand signals are floored at £0/KWh to avoid a perverse operational incentive to increase import over periods with tight system margin at Peak demand. However, the DCLF Model shows that, in areas dominated by intermittent generation, there are significant benefits from importing during periods of peak wind generation as illustrated by the Year Round Tariffs. This modification seeks to separate out the demand Year Round locational signals from Peak Security locational Signals and charge (reward) Storage which imports during times other than Triads, i.e. When Wind Generation is fully operating
- CMP440 was raised by RWE seeking to address the issue for Final Demand (currently sits with Ofgem for decision)

Analysis

- SSE instructed a consultant to undertake analysis. They concluded that Storage did provide a benefit to the System when located behind a constraint
- The Storage subgroup commissioned some independent analysis. They concluded a similar point, but the benefit increased in relation to the duration of the storage

CMP405 Solution

- The Initial Solution for CMP405, proposed mirroring the treatment of Storage in Generation Year Round Shared manner but for Imports.
- For Year Round Shared, Generation is charged the following, Locational Generation Signal x TEC X Annual Load Factor
- Therefore, for Demand it would essentially be the inverse of the Locational Generation Signal.
- Initial Workgroup/Ofgem Concerns (at the time) of the mod/solution
  - Storage was better placed located in the South
  - Double counting of benefit. Storage was already receiving a locational signal to connect there through the BM as these signals resulted in significant revenues. Receiving another benefit through TNUoS would be paid for by other Users.
  - Using ALF was over-rewarding as not linked to when the System was at stress

CMP405 Amended Solution

- To address the over reward element, i.e. importing at times when System not at stress (ALF), a constrained ALF was looked at;
- Only count imports towards the ALF when the System was Constrained
- Perfect example of sounds good in principle but came across the following problems
  - What determines a Constraint. When the SO takes actions?
    - Storage could import thus preventing a constraint but get no reward
  - Is it an Operational Signal?
  - The Charging team getting the information to actually charge
  - Doesn’t relieve Double Counting

CMP405 Further Amended Solution

- Imports towards ALF only count if there is a PN. I.e Storage was intending to import without waiting for a BM action
  - This avoids double counting of revenue as BM actions won't contribute to ALF

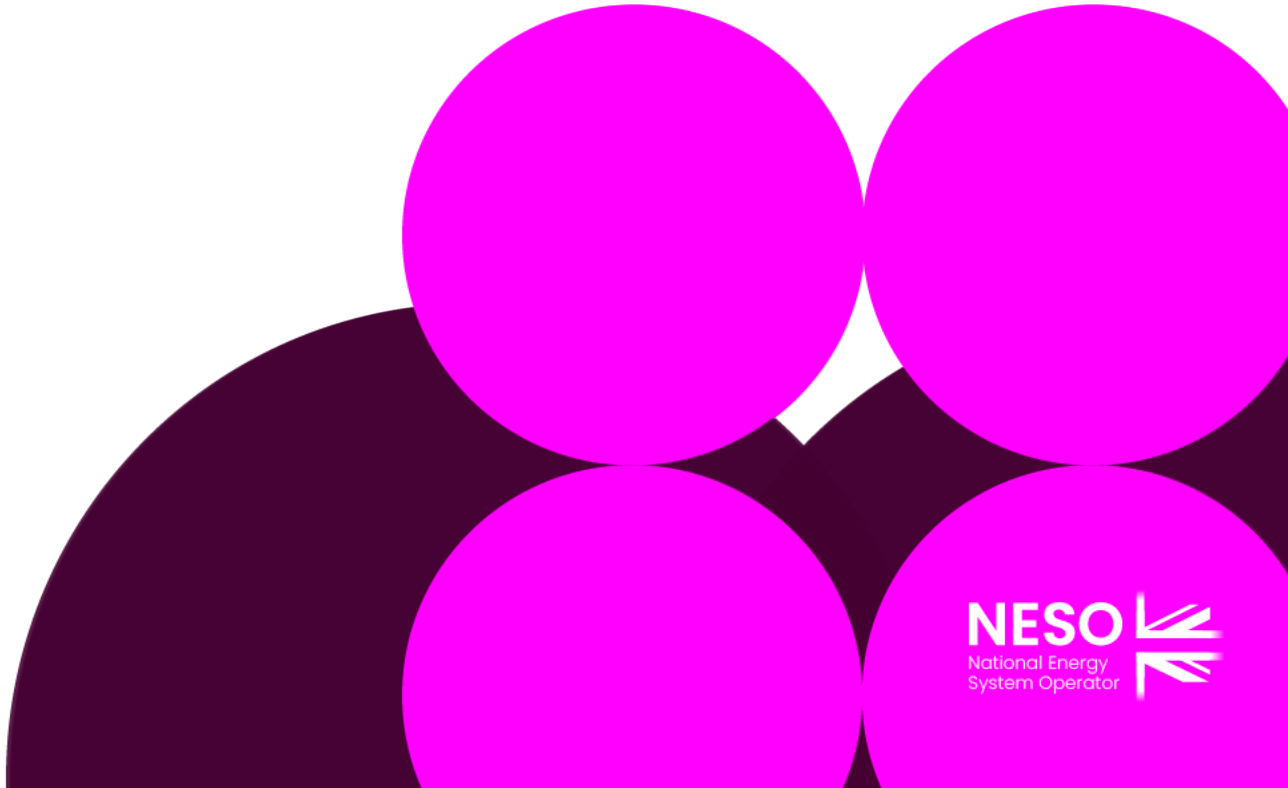
CMP405 Further Questions/Points

- Is BM reform easing worries over double counting/over reward,
  - Removal of subsidies from Bid Prices
  - Potential stopping of cycling within a constraint
- Minded to allow exposure to TNUoS in Cap and Floor discussions so as to give a locational signal

Public

Agree Terms of Reference

All



Public

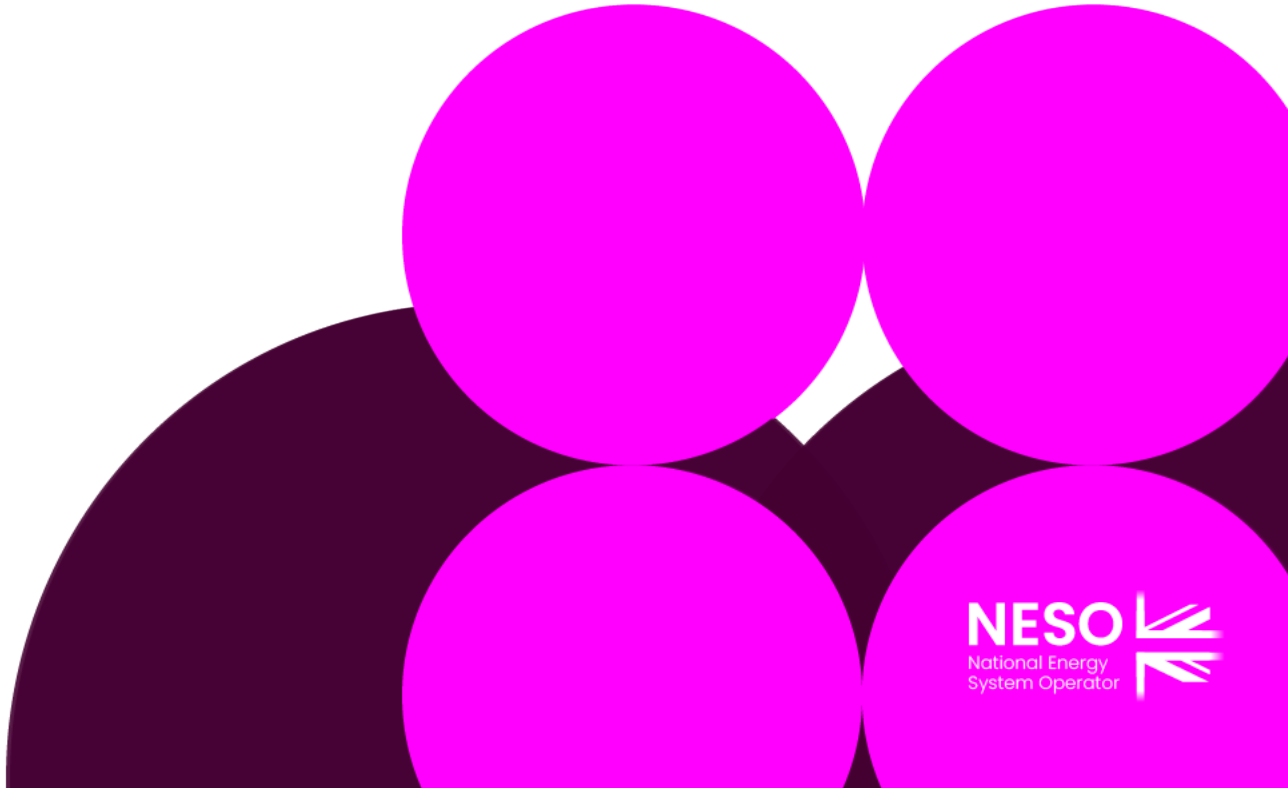
Agree Terms of Reference

Workgroup Term of Reference		Current View
a)	Consider EBR implications	
b)	Consider the analysis was undertaken as part of CMP393	
c)	Consider the principles of wider TNUoS methodology, and the interaction between the cost of constraints and cost of transmission	
d)	Consider the analysis done in the TNUoS Storage Subgroup	
e)	Consider the Authority Decision for CMP393 and the impacts on CMP405	
f)	Consider whether storage connected at Distribution should receive this benefit	
g)	Consider crossovers with LDES Cap and Floor programme, in particular work on the licence condition around operating as LDES	
h)	Consider ongoing NESO work on storage behind constraints and Ofgem work on repetitive retrading	
i)	Consider interactions with ongoing Ofgem policy work on RNP	

Public

Cross Code Impacts

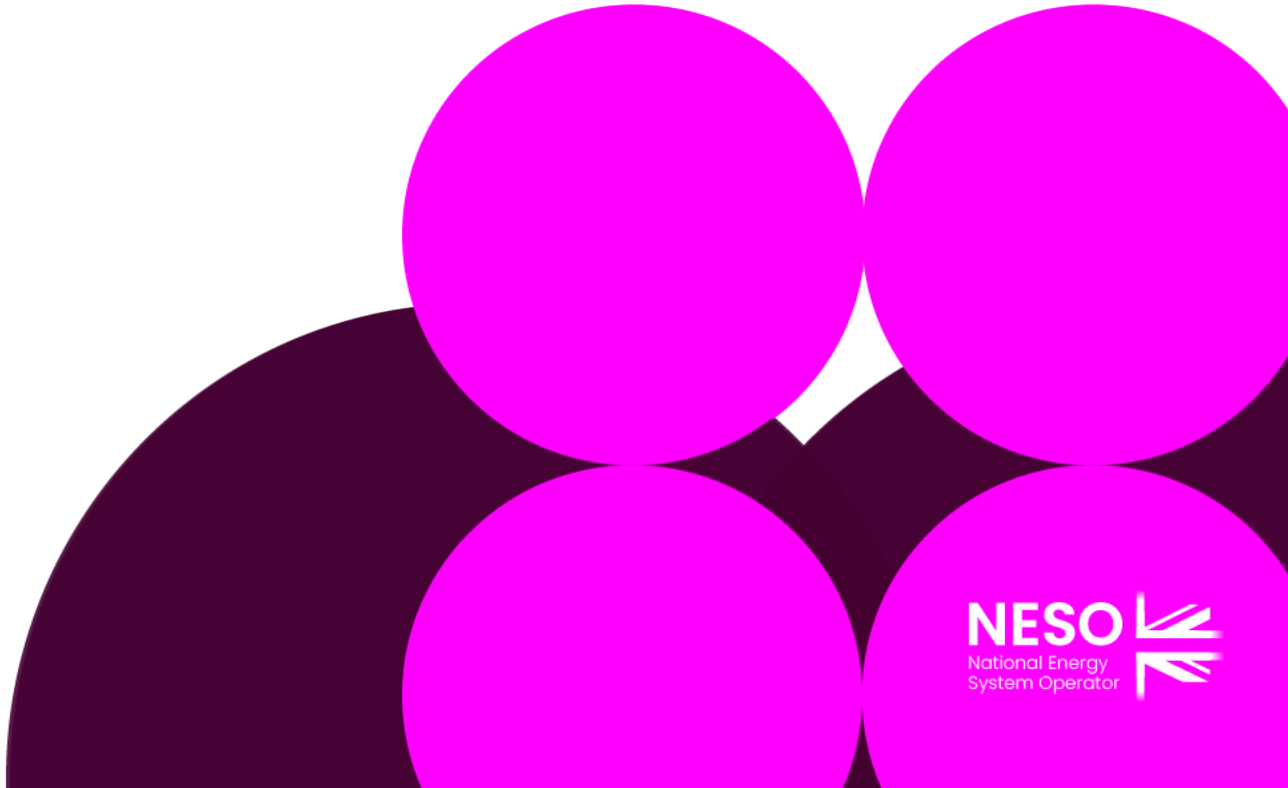
Ayo Bammeke – NESO Code Administrator



Public

Any Other Business + Next Steps

Ayo Bammeke – NESO Code Administrator



Public

Next Steps

- Capture actions and outputs from WG7
- Confirm the Workgroup's position on the Terms of Reference
- Progress any evidence or analysis identified during today's discussion
- Continue development and assessment of the proposed solution
- Address actions ahead of Workgroup 8
- Workgroup 8 – 19 November 2026