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Code Administrator Meeting

Summary

Workgroup Meeting 1: CMP457: Revision of the Obligatory Reactive Power Service (ORPS)

Date: 21st October 2026

Contact Details

Chair: Teri Puddefoot, Terri.Puddefoot@neso.energy

Proposer: Jeremy Taylor, Jeremy.Taylor@neso.energy

Key areas of discussion

The aim of Workgroup 1 was to introduce the CMP457 modification and Workgroup process, review the proposed solution and supporting analysis, consider the Terms of Reference, and provide Workgroup Members with the opportunity to raise initial questions and challenges.

Action Log Review

Action 1 (New) Proposer/ National Energy System Operator (NESO) Representative: Review the treatment of offshore generators where the reactive power requirement is split between the generator and the Offshore Transmission Owner (OFTO), including the existing Connection and Use of System Code (CUSC) Schedule 3 arrangement under which the available payment is reduced to 20%. Consider whether applying this adjustment to the proposed technology-specific rates would remain cost reflective and how this should be addressed within the CMP457 methodology.

Action 2 (New) Proposer/NESO Representative: Review whether Consumer Prices Index (CPI) appropriately reflects changes in fuel costs within the proposed methodology and considers whether a separate index or additional element is required for the fuel-cost component.

Action 3 (New) Workgroup Member: Review the proposed 1% fuel-loss factor and provide further feedback to the Workgroup.

Action 4 (New) Proposer/NESO Representative: Share the separate Plexos modelling report with the Workgroup.

Action 5 (New) Proposer/NESO Representative: Provide worked numerical examples of the proposed formula to demonstrate how the payment calculation operates.

Action 6 (New). Proposer/NESO Representative: Confirm whether the impact of the proposed ORPS rate on stability contracts that reference the Obligatory Reactive Power Service (ORPS) rate needs to be addressed through CMP457, or whether this should be dealt with separately outside the Modification.

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Action 7 (New) Proposer/NESO Representative: Clarify the treatment of synchronous compensators and whether an additional technology category is required where they provide ORPS under the CUSC.

Action 8 (New) Proposer/NESO Representative: Discuss with Department for Energy Security and Net Zero (DESNZ) how the Levelised Cost of Electricity (LCOE) data is validated, including any available third-party validation, and provide further information to the Workgroup on the robustness of the data used within the proposed methodology.

Action 9 (New) Proposer/NESO Representative: Raise with the Settlements Team the concerns regarding the settlement of ORPS, including whether additional settlement requirements are being applied that are not reflected in the CUSC, and consider whether the settlement arrangements need to be addressed as part of CMP457.

Action 10 (New) Proposer /NESO Representative: Consider whether opportunity costs associated with providing reactive power, including where hydro units may need to reduce Megawatt (MW) output to provide the required reactive capability, should be reflected within the proposed methodology.

Action 11 (New) Proposer/NESO Representative: Provide specific references to the source data within the LCOE reports used to derive the variable O&M costs in the proposed technology payment table, to enable Workgroup Members to review and validate the assumptions.

Modification Process, Responsibilities and Timeline

The Chair briefly outlined the modification process, Workgroup responsibilities, voting requirements and agreed timeline. Members were reminded that 50% attendance is required to vote and that alternatives should be raised in sufficient time for the Workgroup to develop them, and that the next Workgroup is scheduled for 18 November.

CMP457 Background and proposed solution

The Proposer presented the background to CMP457, explaining that it followed an innovation-funded review of the existing ORPS methodology. The Proposer outlined how the current methodology operates and the drivers for change, including its age, linkage to Retail Prices Index (RPI) and power-price indices, exposure to gas-price volatility, the changing generation mix and increasing reactive power requirements. The Proposer explained that the review sought a methodology that was more closely aligned with the variable costs incurred by providers in delivering obligatory reactive power.

The Proposer then outlined the work undertaken with Det Norske Veritas (DNV), including review of the existing methodology, comparison with international approaches, engagement with service providers and assessment of potential replacement methodologies. A number of options were considered, with a fixed-tariff utilisation payment using different rates by technology identified as the preferred approach. The proposed methodology would use DESNZ LCOE data for variable Operating and Maintenance (O&M) and, where applicable, fuel costs, with different conversion factors for synchronous and non-synchronous technologies. CPI was proposed for ongoing monthly indexation. The Proposer also outlined previous industry feedback, including questions concerning power-factor requirements and the suitability of LCOE data.

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Workgroup Discussion

Workgroup Members questioned whether the proposed methodology fully reflected the costs associated with providing reactive power. Particular concerns included the distinction between synchronous and non-synchronous technologies, the exclusion of capital expenditure, the costs of maintaining reactive capability and whether regional differences should be reflected. One Workgroup Member considered that describing the methodology as cost reflective could be misleading where it only reflected a subset of costs. The NESO Representative commented that CMP457 was intended to compensate the incremental costs associated with mandatory reactive power utilisation rather than the capital cost of establishing the capability.

Workgroup Members also expressed differing views on the proposed utilisation-only approach. One Member referred to the French arrangements and questioned why the hybrid capability and utilisation option had not been selected, noting that providers incur fixed costs in establishing capability irrespective of utilisation. The Proposer explained that capability-based payments had been considered but were not selected because reactive power need is locational and paying all providers for availability irrespective of utilisation was considered potentially unfair to providers and consumers. A Workgroup Member also noted that, because optional reactive power procurement is itself locational, having capability does not necessarily provide an alternative route to compensation.

A Workgroup Member challenged the presentation regarding differences in Grid Code reactive power requirements between Scotland and England and also questioned whether the technical distinction between synchronous and non-synchronous generation accurately represented how reactive power is provided. The Workgroup Member considered that the proposed approach did not sufficiently recognise the engineering requirements of different technologies. The Proposer acknowledged that any identified differences between Scotland and England were minor and agreed to review the point. The NESO Representative noted that engineering and Control Room input had formed part of the project but welcomed alternative approaches from the Workgroup.

The suitability of DESNZ LCOE data was discussed in detail. The Proposer and NESO Representative explained that it had been selected because the project required a consistent, transparent and publicly available dataset capable of covering multiple technology types. Workgroup Members did not necessarily reject the use of LCOE data but questioned whether its assumptions adequately represented the range of GB assets and requested further information on how the data had been validated, whether the assumptions were conservative for providers or consumers, and where the individual technology-specific variable O&M figures could be found.

Workgroup Members challenged the proposed use of CPI for indexation, particularly for fuel costs. Concern was raised that CPI may not adequately capture significant fuel-price volatility between updates to the LCOE data. The Proposer accepted this as a fair challenge, and the NESO

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Representative considered that a separate index or additional element for fuel costs may need to be explored. A further challenge was raised regarding the proposed 1% fuel-loss factor and the treatment of both fixed and variable losses.

The Workgroup also discussed the evidence underpinning selection of the preferred methodology. A Workgroup Member requested the detailed Plexos modelling used to support the assessment and worked numerical examples demonstrating how the proposed formula operates. The Workgroup Member also considered that the Workgroup should be able to form its own view of the options presented, including potentially different approaches, when assessing the Modification against the Applicable CUSC Objectives. The Proposer agreed that the separate Plexos report could be shared and that worked examples could be provided.

Workgroup Members considered the interaction between CMP457 and existing stability contracts that reference the ORPS rate. A Workgroup Member asked whether the implications of changing the ORPS rate should be addressed through CMP457 or left to providers and other areas of NESO to manage outside the Modification. The Proposer confirmed that this had not been explored further within the project and agreed that the question should be taken away for consideration.

The treatment of synchronous compensators was also discussed. Workgroup Members considered that a synchronous compensator ORPS rate may be required, particularly where existing stability contracts end and an asset subsequently provides reactive power under its Grid Code obligations. The NESO Representative explained that where a technology provides mandatory reactive power under the CUSC but is not included in the proposed technology table, it would need to be considered for inclusion.

ORPS settlement arrangements were also challenged. A Workgroup Member stated that additional requirements may be applied operationally when settling ORPS that are not reflected in the CUSC, highlighting technologies capable of providing reactive power at zero MW as an example. The NESO Representative considered the settlement concerns valid and indicated that they could be raised internally with the Settlements Team. This point subsequently informed a proposed addition to the Terms of Reference covering whether ORPS settlement appropriately reflects CUSC requirements.

A Workgroup Member questioned the treatment of hydro within the proposed payment table, noting that technologies shown as having zero fuel costs may nevertheless incur opportunity costs. Run-of-river hydro was highlighted as an example where MW output may need to be reduced to move towards the edge of the unit's reactive capability. The Proposer and NESO Representative accepted the point for further consideration, including as part of discussions concerning development of the rates.

The Workgroup considered the treatment of offshore generators where reactive power requirements are split between the generator and the OFTO. A Workgroup Member noted that the existing CUSC arrangements reduce the available payment to 20% in this scenario and questioned whether applying this adjustment to the proposed technology-specific rates would

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remain cost reflective. The Proposer confirmed that this issue had not been specifically considered by the project, and the NESO Representative agreed that it needed to be addressed rather than carried forward unresolved into the new rate.

Terms of Reference (ToR)

The Workgroup returned to the Terms of Reference following the main CMP457 discussion. Three changes were identified:

- consideration of whether ORPS settlement appropriately reflects CUSC requirements (new ToR);
- consideration of the basis and assumptions underpinning the proposed ORPS payment table (new ToR); and
- broadening the existing reference to long-term reactive power contracts to capture other relevant commercial contracts.

The Chair confirmed that the amended Terms of Reference would be circulated to the Workgroup for review before being returned to Panel for consideration.

Cross-Code Impacts

The Chair confirmed that no cross-code impacts had been identified within the original Proposal and asked whether this remained the position. The NESO Representative considered CMP457 to be discrete, as the Modification seeks to amend the ORPS formula within the CUSC and does not currently propose amendments to other parts of the CUSC or Grid Code. The Chair noted that cross-code impacts would be reconsidered if any were identified as the Modification progressed.

Next Steps

A number of matters were taken away for further consideration, as captured in the actions. The Terms of Reference will be updated and shared with the Workgroup before being returned to Panel.

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Actions

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

Action Number	Workgroup Raised	Owner	Action	Due by	Status
1	WG1	JT/SD	Proposer/NESO Representative: Review the treatment of offshore generators where the reactive power requirement is split between the generator and the OFTO, including the existing CUSC Schedule 3 arrangement under which the available payment is reduced to 20%. Consider whether applying this adjustment to the proposed technology-specific rates would remain cost reflective and how this should be addressed within the CMP457 methodology.	WG2	Open
2	WG1	JT/SD	Proposer/NESO Representative: Review whether CPI appropriately reflects changes in fuel costs within the proposed methodology and considers whether a separate index or additional element is required for the fuel-cost component.	WG2	Open
3	WG1	CS	Workgroup Member: Review the proposed 1% fuel-loss factor and provide further feedback to the Workgroup.	WG2	Open
4	WG1	JT/SD	Proposer/NESO Representative: Share the separate Plexos modelling report with the Workgroup.	WG2	Open
5	WG1	JT/SD	Proposer/NESO Representative: Provide worked numerical	WG2	Open

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			examples of the proposed formula to demonstrate how the payment calculation operates.		
6	WG1	JT/SD	Proposer/NESO Representative: Confirm whether the impact of the proposed ORPS rate on stability contracts that reference the ORPS rate needs to be addressed through CMP457, or whether this should be dealt with separately outside the Modification.	WG2	Open
7	WG1	JT/SD	Action 7 (New) Proposer/NESO Representative: Clarify the treatment of synchronous compensators and whether an additional technology category is required where they provide ORPS under the CUSC.	WG2	Open
8	WG1	JT/SD	Proposer/NESO Representative: Discuss with Department for Energy Security and Net Zero (DESNZ) how the Levelised Cost of Electricity (LCOE) data is validated, including any available third-party validation, and provide further information to the Workgroup on the robustness of the data used within the proposed methodology.	WG2	Open
9	WG1	JT/SD	Proposer/NESO Representative: Raise with the Settlements Team the concerns regarding the settlement of ORPS, including whether additional settlement requirements are being applied that are not reflected in the CUSC, and consider whether the	WG2	Open

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settlement arrangements need to be addressed as part of CMP457.

10	WG1	JT/SD	Proposer /NESO Representative: Consider whether opportunity costs associated with providing reactive power, including where hydro units may need to reduce Megawatt (MW) output to provide the required reactive capability, should be reflected within the proposed methodology.	WG2	Open
11	WG1	JT/SD	Proposer/NESO Representative: Provide specific references to the source data within the LCOE reports used to derive the variable O&M costs in the proposed technology payment table, to enable Workgroup Members to review and validate the assumptions.	WG2	Open

Attendees

Name	Initial	Company	Role
Teri Puddefoot	TP	NESO	Chair
Emma Sims	ES	NESO	Technical Secretary
Jeremy Taylor	JT	NESO	Proposer
Jing Bai	JB	Conrad Energy	Workgroup Alternate
Jo Bushnell	JB	Zenobe Energy Limited	Workgroup Alternate
Andrew Colley	AC	SSE Generation	Workgroup Alternate

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Stephen Dale	SD	NESO	NESO Representative
Kaleb Davis	KD	Highview Power	Observer
Tim Ellingham	TE	RWE	Workgroup Member
Belinda Gonzales Parrado	BGP	ScottishPower Renewables	Workgroup Alternate
Eleanor Horn	EH	EDF	Workgroup Member
Agustin Mengoni	AM	Eleclink Ltd	Workgroup Member
Guillermo Antonio Rios Pavia	GARP	Conrad Energy	Workgroup Member
Hannah Rochford	HR	Zenobe Energy Limited	Workgroup Member
Cem Suleyman	CS	Statkraft UK	Workgroup Member
Lamin Saidy Vulart	LSV	Qair Renewables UK Limited	Workgroup Member
Zong Yan	ZY	Ofgem	Authority Representative