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STC Modification Proposal Form		
<h1>CM0105: Standardisation of Power Flow Metering Polarity</h1> <p>Overview: This modification aims to provide a unified standard for Power Flow Metering Polarity when data is sent to NESO. The standards should be presented in a format that includes both a diagram and a detailed explanatory description. This is a subsequent modification to GC0182.</p>		<h2>Modification process & timetable</h2> <ol style="list-style-type: none"> Proposal Form 14 October 2025 Workgroup Consultation 02 February 2026 – 23 February 2026 Workgroup Report 21 April 2026 Code Administrator Consultation 06 May 2026 – 27 May 2026 Draft Final Modification Report 16 June 2026 Final Modification Report 07 July 2026 Implementation 10 business days after Authority decision
<p>Status summary: The Proposer has raised a modification and is seeking a decision from the Panel on the governance route to be taken.</p>		
<p>This modification is expected to have a: High impact on Transmission System Owners, Interconnectors, Network Operators. Low impact on Generators, Transmission Owners and Aggregators</p>		
<p>Proposer's recommendation of governance route</p>	<p>Standard Governance modification with assessment by a Workgroup</p>	
<p>Who can I talk to about the change?</p>	<p>Proposer: Thomas Goss thomas.goss2@neso.energy 07942 602 438</p>	<p>Code Administrator Contact: STCTeam@neso.energy</p>

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What is the issue?

NESO must operate the GB electricity network securely and safely in real-time using the Supervisory Control and Data Acquisition (SCADA) tool. The NESO SCADA system constantly receives power flow metering data from external parties including Generators, Transmission Owners (TOs), Offshore Transmission Owners (OFTOs) and Distribution Network Operators (DNOs) to show NESO Control Room engineers the most up-to-date network status and assist them to take operational actions if necessary. However, there are occasions where power flow metering data with inconsistent polarity against the NESO convention are fed into the NESO SCADA system, for example negative instead of positive flow. Over 800 metering points have been identified as having incorrect polarity. The NESO SCADA system feeds data to multiple downstream systems used internally to operate the system. Therefore, errors in operational metering systems mean that the operation of the transmission system becomes suboptimal, which will push up operating costs and hence the costs to the end consumer.

Why change?

For NESO, receiving power flow metering data with inconsistent polarity compared to the NESO convention can impact situational awareness for the NESO Control Room engineers, reduce optimal performance and reduce system security, leading to potential SQSS breaches, as well as additional balancing costs. For other industry stakeholders, there can be delays in setting up operational metering for new connections and increased workload, due to the need to update and correct the polarity. In addition, NESO might need to spend more time making decisions on the outage and commissioning plan, as the power flow data could be misleading. Furthermore, inconsistent polarity may introduce billing errors for settlements between NESO and energy providers. NESO has been liaising with the corresponding parties and trying to follow the guidance and policy in industry codes to correct the inconsistent polarity of the received power flow meter data. However, there are a number of issues, including:

- No clear and unified power flow polarity standard for the power flow data sent to NESO;
- No clause in industry codes or licence obligations requesting parties to follow a power flow polarity standard. Therefore, certain parties may

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choose their own convention which is inconsistent with other parts of the network; and

- No clause in industry codes requiring parties sending power flow metering with inconsistent polarity to fix the issue.

What is the Proposer's solution?

We propose to introduce and publish a diagram indicating the standard of Power Flow Metering Polarity when sending data to NESO in an System Operator – Transmission Operator Code Procedure (STCP), which will be referred to in the System Operator –Transmission Operator (STC). Explanatory notes to assist industry stakeholders understand the proposed standard will also be introduced. This will only focus on new connections and new or replacement metering points at existing substations at this stage. The potential for a Metering Polarity Modification was discussed at the STC Panel in September 2024 to introduce the change. Subject Matter Experts (SMEs) within NESO have engaged with stakeholders, including Generators, all three onshore TOs and Elexon after the STC Panel meeting, to further develop the proposed Power Flow Metering Polarity standard diagram and ensure the standard is consistent with the polarity conventions of all three onshore TOs and Elexon.

The GC0182: Standardisation of Power Flow Metering Polarity Modification to introduce the Power Flow Metering Polarity has already commenced. This has included the TO/OFTO Stakeholders as well as Generators, and a template technical diagram and legal text have been proposed. This STC proposal is to run concurrently with GC0182 to ensure that the onshore TOs and the OFTOs are included in the overall change and that the equivalent changes are made to the STC/STCP documentation.

What is in and out of scope?

At this current stage, the standard is only applicable to new connections and new or replacement metering points at existing substations and it will not be applied retrospectively.

Draft legal text

Draft legal text for this change is being completed under GC0182. Once a draft has been completed, it will be shared with the Workgroups on this Modification to

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ensure that appropriate legal wording for the STC is confirmed. Once agreed it will be added as an Annex.

What is the impact of this change?

Proposer's assessment against STC Objectives	
Relevant Objective	Identified impact
(i) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;	Positive Improved situational awareness, system security, better forecast and reduced balancing cost. Reduce and/or mitigate iterations and delay for setting up new connections and approval for outage and commissioning. Improved coordination, efficiency and transparency between NESO and other parties following unified polarity standard and standardised process.
(ii) Facilitating effective competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);	Neutral
(iii) Subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole;	Positive Improved situational awareness, system security, better forecast and reduced balancing cost Reduce and/or

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	mitigate iterations and delay for setting up new connections and approval for outage and commissioning Improved coordination, efficiency and transparency between NESO and other parties following unified polarity standard and standardised process.
(iv) To efficiently discharge the obligations imposed upon the licensee by this license* and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency; and	Positive Improved situational awareness, system security, better forecast and reduced balancing cost Reduce and/or mitigate iterations and delay for setting up new connections and approval for outage and commissioning Improved coordination, efficiency and transparency between NESO and other parties following unified polarity standard and standardised process.
(v) To promote efficiency in the implementation and administration of the Grid Code arrangements	Neutral
* See Electricity System Operator Licence	

Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories

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Stakeholder / consumer benefit categories	Identified impact
Improved safety and reliability of the system	Positive Improved situational awareness, system security, better forecast and reduced balancing cost. Reduce and/or mitigate iterations and delay for setting up new connections and approval for outage and commissioning. Improved coordination, efficiency and transparency between NESO and other parties following unified polarity standard and standardised process.
Lower bills than would otherwise be the case	Positive NESO do not need to over-procure reserve to maintain system security when accurate metering data is provided.
Benefits for society as a whole	Neutral
Reduced environmental damage	Neutral
Improved quality of service	Positive Improved situational awareness, system security, better forecast and reduced balancing cost Reduce and/or mitigate iterations and delay for setting up new connections and approval for outage and commissioning. Improved coordination, efficiency and transparency between NESO and other parties following unified polarity standard and standardised process.

When will this change take place?

Implementation date:

10 business days after an Authority Decision. To align with the GC0182 decision. This is to ensure the new Meter Polarity standards are implemented consistently across all relevant stakeholders.

Proposer's justification of Implementation date:

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Implementation date as soon as possible after Ofgem decision.

Date decision required by

Requested by 01 September 2026, or as soon as possible, in concurrence with GC0182.

Implementation approach

During the planning and design stage of new connections or replacement of existing metering points, a specific team within NESO will be the contact point and they will inform the third party of the polarity standard. Prior to issue of Operation Notifications by NESO (i.e. EON, ION, LON), the metering points will be checked by NESO SCADA, Operational Metering and Compliance and agreed with the third party. During ongoing operation, the third party will need to provide evidence to the NESO Compliance team that the standard is being followed if the third party decides to make changes to their existing metering points.

Proposer's justification for governance route

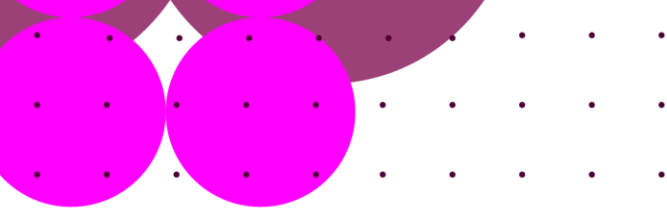
Governance route: Standard Governance modification with assessment by a Workgroup. Due to the potential impact on relevant parties, the Workgroup will provide further refinement for the draft meter polarity standard. Because of the materiality, we propose that the Authority make the decision on the proposed change.

Interactions

<input checked="" type="checkbox"/> Grid Code	<input type="checkbox"/> BSC	<input type="checkbox"/> CUSC	<input type="checkbox"/> SQSS
<input type="checkbox"/> European Network Codes	<input type="checkbox"/> Other modifications	<input type="checkbox"/> Other	

This Modification will interact with GC0182, when the Metering Polarity Standard will be incorporated into the Grid Code as an Electrical Standard, which is only applicable to Generators. The Metering Polarity Standard should also be applicable to all other industry stakeholders that send data to NESO. Therefore, the STC needs to be updated to reference this Metering Polarity Standard, to ensure that onshore TOs and OFTOs also follow the same Standard.

For most transmission connected Generators, the metering will be sent to NESO through onshore TOs' assets and referring the Standard in STC can make onshore TOs aware and follow the standard in such circumstances.



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Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CC	Connection Conditions
CUSC	Connection and Use of System Code
DNO	Distribution Network Owner
EBR	Electricity Balancing Regulation
ECC	European Connection Conditions
EON	Energisation Operational Notification
GC	Grid Code
GCDF	Grid Code Development Forum
ION	Interim Operational Notification
LON	Limited Operational Notification
NESO	National Energy System Operator
OFGEM	Office of Gas and Electricity Markets
OFTO	Offshore Transmission Owner
SCADA	Supervisory Control and Data Acquisition
SME	Subject Matter Expert
SQSS	Security and Quality of Supply Standards
STC	System Operator Transmission Owner Code
STCP	SO-TO Code Procedure
T&Cs	Terms and Conditions
TO	Transmission Owner

Annexes

Annex	Information
Annex 01	CM0105 Metering Polarity Electrical Standard