

Public

Code Administrator Consultation Response Proforma

GC0168: Submission of Electro Magnetic Transient (EMT) Models

Industry parties are invited to respond to this consultation expressing their views and supplying the rationale for those views, particularly in respect of any specific questions detailed below.

Please send your responses to grid.code@neso.energy by **5pm** on **08 June 2026**. Please note that any responses received after the deadline or sent to a different email address may not receive due consideration.

If you have any queries on the content of this consultation, please contact grid.code@neso.energy.

Respondent details	Please enter your details	
Respondent name:	Andrew Urquhart	
Company name:	SSE Generation	
Email address:	andrew.urquhart@sse.com	
Phone number:	01738 456000	
Which best describes your organisation?	<input type="checkbox"/> Consumer body <input type="checkbox"/> Demand <input type="checkbox"/> Distribution Network Operator <input checked="" type="checkbox"/> Generator <input type="checkbox"/> Industry body <input type="checkbox"/> Interconnector	<input type="checkbox"/> Storage <input type="checkbox"/> Supplier <input type="checkbox"/> System Operator <input type="checkbox"/> Transmission Owner <input type="checkbox"/> Virtual Lead Party <input type="checkbox"/> Other

Public

I wish my response to be:

(Please mark the relevant box)	<input checked="" type="checkbox"/> Non-Confidential (<i>this <u>will be shared</u> with industry and the Panel for further consideration</i>)
	<input type="checkbox"/> Confidential (<i>this will be disclosed to the Authority in full but, unless specified, <u>will not be shared</u> with the Panel or the industry for further consideration</i>)

For reference the Applicable Grid Code Objectives are:

- i. *To permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity*
- 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);*
- 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;*
- 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*
- v. *To promote efficiency in the implementation and administration of the Grid Code arrangements*

* See Electricity System Operator Licence

Public

For reference, (for consultation question 5) the Electricity Balancing Regulation (EBR) Article 3 Objectives and regulatory aspects are:

- a) *fostering effective competition, non-discrimination and transparency in balancing markets;*
- b) *enhancing efficiency of balancing as well as efficiency of national balancing markets;*
- c) *integrating balancing markets and promoting the possibilities for exchanges of balancing services while contributing to operational security;*
- d) *contributing to the efficient long-term operation and development of the electricity transmission system and electricity sector while facilitating the efficient and consistent functioning of day-ahead, intraday and balancing markets;*
- e) *ensuring that the procurement of balancing services is fair, objective, transparent and market-based, avoids undue barriers to entry for new entrants, fosters the liquidity of balancing markets while preventing undue market distortions;*
- f) *facilitating the participation of demand response including aggregation facilities and energy storage while ensuring they compete with other balancing services at a level playing field and, where necessary, act independently when serving a single demand facility;*
- g) *facilitating the participation of renewable energy sources and supporting the achievement of any target specified in an enactment for the share of energy from renewable sources.*

What is the EBR?

The Electricity Balancing Regulation (EBR) is a European Network Code introduced by the Third Energy Package European legislation in late 2017.

The EBR regulation lays down the rules for the integration of balancing markets in Europe, with the objectives of enhancing Europe’s security of supply. The EBR aims to do this through harmonisation of electricity balancing rules and facilitating the exchange of balancing resources between European Transmission System Operators

Public

(TSOs). Article 18 of the EBR states that TSOs such as the NESO should have terms and conditions developed for balancing services, which are submitted and approved by Ofgem.

Please express your views in the right-hand side of the table below, including your rationale.

Standard Code Administrator Consultation questions		
1	Please provide your assessment for the proposed solutions against the Applicable Objectives versus the current baseline.	Mark the Objectives which you believe the proposed solutions better facilitate than the current baseline:
		Original <input checked="" type="checkbox"/> i <input type="checkbox"/> ii <input checked="" type="checkbox"/> iii <input type="checkbox"/> iv <input type="checkbox"/> v <input type="checkbox"/> None
		WAGCMI <input checked="" type="checkbox"/> i <input checked="" type="checkbox"/> ii <input checked="" type="checkbox"/> iii <input type="checkbox"/> iv <input type="checkbox"/> v <input type="checkbox"/> None
		Both options support Applicable Objectives (i) and (iii) through improved system modelling capability. However, the Original proposal risks undermining efficient system operation and competition by introducing retrospective and potentially unbounded obligations on existing generation in advance of a cost recovery mechanism being put in place. For a number of legacy assets (particularly older hydro plant), the provision of EMT models may be technically infeasible due to unavailable OEM intellectual property, lack of design data, or obsolescence of control systems. In such cases, model reconstruction would introduce significant

Public

		<p>uncertainty and may not deliver models of sufficient fidelity to support system studies.</p> <p>This creates a risk that the proposal imposes material cost and delivery burden without commensurate system benefit and may ultimately distort competition by disproportionately impacting older assets relative to more recent developments.</p> <p>WAGCMI better balances these considerations by facilitating improved system modelling while maintaining proportionality and regulatory certainty for pre-September 2022 investments, which were not made on the basis of EMT model provision requirements.</p>
2	Do you have a preferred proposed solution?	<p><input type="checkbox"/>Original</p> <p><input checked="" type="checkbox"/>WAGCMI</p> <p><input type="checkbox"/>Baseline</p> <p><input type="checkbox"/>No preference</p> <p>SSE Generation supports WAGCMI.</p> <p>WAGCMI enables the underlying objective of improved EMT system modelling to be delivered, while avoiding market distortions between different ages of plant. Should the cost recovery through CMP456 be delayed or rejected by the Authority, then older generation assets will be at a competitive disadvantage to newer assets. This could have material commercial impacts on that legacy fleet at a time when additional renewable generation is needed rather than losing existing.</p> <p>WAGCMI also preserves appropriate incentives to provide EMT models, whilst recognising that for</p>

Public

		<p>some existing plant, delivery may be disproportionately complex, technically constrained, or not feasible.</p> <p>This approach ensures that progress towards enhanced system modelling does not come at the expense of efficient market participation or market distortions.</p>
3	Do you support the proposed implementation approach?	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p>SSE supports the principle behind the mod and the implementation approach that allows NESO to request EMT models where there is a clear and demonstrable system need, but considers that this must be accompanied by:</p> <ul style="list-style-type: none"> • Recognition that delivery for legacy assets may be conditional on technical feasibility; • Appropriate consideration of delivery timescales, particularly where significant engineering reconstruction is required; • Clarity on the trigger for model requests, to ensure requests are targeted, proportionate, and linked to demonstrable system requirements. • Recognition that where generic EMT models are used, validation at FON may be challenging. A pre-agreed set of validation

Public

		<p>tests would enable pre-testing of unit response and more efficient compliance.</p> <ul style="list-style-type: none"> • Due consideration should be given to developing generic models on a performance basis rather than a component-specific basis, allowing a more pragmatic balance between effort and outputs. Established standard models for synchronous machines provide a suitable starting point. <p>Without these safeguards, there remains a risk that implementation could create uncertain and open-ended obligations for existing generators, in turn causing market distortions.</p>
4	Do you have any other comments?	<p>From the consultation it can be seen that the legal text and general approach have been tested to ensure that the appropriate parties associated LEEMPS are engaged. What is not clear is how those installations will be able to recover their costs for compliance. Clarity is needed on this to ensure that no market distortions are created by this mod.</p> <p>From the NESO document <i>Guidance Notes for EMT Models (September 2025)</i>, SSE seeks clarification on two specific requirements:</p> <ul style="list-style-type: none"> • The requirement for model maintenance and support frameworks with vendors/suppliers may present challenges for legacy assets due to limited OEM support and data availability. While the guidance allows for discussion of alternatives in

Public

		<p>such cases, it is not clear what these alternatives may be. SSE therefore seeks further clarification.</p> <ul style="list-style-type: none"> • The requirement for unit testing where data is unavailable could cause damage. For example, saturation or magnetisation curves may necessitate operation above rated voltage (e.g. 120%) to characterise. This introduces a potential risk of stress or damage to generator components, particularly for older assets. SSE therefore requests clarification on how such risks would be managed, including arrangements in the event of equipment damage arising from testing.
5	Do you agree with the Workgroup's assessment that the modification does not impact the Electricity Balancing Regulation (EBR) Article 18 terms and conditions held within the Code?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		<p>Click or tap here to enter text.</p>