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Workgroup Consultation Response Proforma

CM097: Electromagnetic Transient (EMT) and Root Mean Square (RMS) Model Submission for Transmission Owners (TOs)

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 stcteam@nationalenergyso.com by **5pm on 22 April 2025**. 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 stcteam@nationalenergyso.com

Respondent details	Please enter your details	
Respondent name:	Graeme Vincent	
Company name:	SP Energy Networks	
Email address:	graeme.vincent@spenergynetworks.co.uk	
Phone number:	Click or tap here to enter text.	
Which best describes your organisation?	<input type="checkbox"/> Consumer body <input type="checkbox"/> Demand <input checked="" type="checkbox"/> Distribution Network Operator <input 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 checked="" type="checkbox"/> Transmission Owner <input type="checkbox"/> Virtual Lead Party <input type="checkbox"/> Other

I wish my response to be:

(Please mark the relevant box)

☒ **Non-Confidential** (*this will be shared with industry and the Panel for further consideration*)

☐ **Confidential** (*this will be disclosed to the Authority in full but, unless specified, will not be shared with the Workgroup, Panel or the industry for further consideration*)

For reference the Applicable STC Objectives are:

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- a) *efficient discharge of the obligations imposed upon Transmission Licensees by Transmission Licences and the Electricity Act 1989;*
- b) *efficient discharge of the obligations imposed upon the licensee by the Electricity System Operator licence, the Energy Act 2023 and Electricity Act 1989;*
- c) *development, maintenance, and operation of an efficient, economical, and coordinated system of electricity transmission;*
- d) *facilitating effective competition in the generation and supply of electricity, and (so far as consistent therewith) facilitating such competition in the distribution of electricity;*
- e) *protection of the security and quality of supply and safe operation of the National Electricity Transmission System insofar as it relates to interactions between Transmission Licensees and the licensee*;*
- f) *promotion of good industry practice and efficiency in the implementation and administration of the arrangements described in the STC;*
- g) *facilitation of access to the National Electricity Transmission System for generation not yet connected to the National Electricity Transmission System or Distribution System; and*
- h) *compliance with the Electricity Regulation and any Relevant Legally Binding Decisions of the European Commission and/or the Agency.*

* See Electricity System Operator Licence

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

Standard Workgroup Consultation questions		
1	Do you believe that the Original Proposal better facilitate the Applicable Objectives versus the baseline?	<p>Mark the Objectives which you believe each solution better facilitates:</p> <p>Original <input type="checkbox"/>A <input type="checkbox"/>B <input checked="" type="checkbox"/>C <input type="checkbox"/>D <input checked="" type="checkbox"/>E <input type="checkbox"/>F <input type="checkbox"/>G <input type="checkbox"/>H</p> <p>Click or tap here to enter text.</p>
2	Do you support the proposed implementation approach?	<p><input checked="" type="checkbox"/> Yes, but see comments below.</p> <p><input type="checkbox"/> No</p> <p>Whilst supportive of the requirement and observing that this modification results in a relatively simple change to the STC itself, we note that the actual detailed requirements are likely to be included within a separate STCP (<i>proposed STCP 12-2</i>) which is not subject to this consultation and therefore little additional detail on the requirements is presented which makes a full assessment of the implementation approach for the overall package of measures associated with this modification more difficult.</p>

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		We would also recognise the significant additional costs and timescales associated with obtaining EMT models for existing plant where these currently do not exist and believe these factors need to be considered within the overall context of the STC modification and consequential STCP modification. We are therefore supportive of a cost recovery mechanism to ensure that TOs legitimate additional costs are recoverable.
3	Do you have any other comments?	Click or tap here to enter text.
4	Do you wish to raise a Workgroup Consultation Alternative request for the Workgroup to consider?	<input type="checkbox"/> Yes (the request form can be found in the Workgroup Consultation Section) <input checked="" type="checkbox"/> No Click or tap here to enter text.
5	Does the draft legal text satisfy the intent of the modification?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Yes, the legal text changes proposed to the STC does satisfy the intent, however, the

Specific Workgroup Consultation questions

6	Please could you share your rationale for a cost-recovery mechanism to be put in place supported by evidence, where available. If no cost-recovery mechanism were available, what do you believe the implications would be?	<p>Note that for all new plant, SPEN already requires the delivery of RMS and EMT models as part of the specification. However, the costs associated with obtaining EMT models for existing plant are very high. Based on work that is ongoing, the total cost to SPEN is estimated to be in the order of £500k, not including the engineering time to test such models before submitting them to NESO. For TOs with a higher number of FACTS devices and other active plant, this cost will be substantially higher.</p> <p>The absence of a cost recovery mechanism would, as a minimum, slow down the process of acquiring validated EMT models for GB plant.</p>
7	As part of the consequential modification for GC0168, it is proposed to prepare an Electrical Standard	Although PSCAD is the industry standard for EMT simulations, it is reliant on proprietary software interfaces and has had problems due to incompatibility between versions. Binding the industry to a single vendor and simulation platform may not be in the interests of NESO, TOs or GB consumers. SPEN

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	<p>detailing how an EMT model would be submitted in PSCAD Version 5. Do you believe with appropriate signposting to the Grid Code from the STC, this would be an appropriate and cost effective method of providing this guidance to transmission licences. If you do not believe this to be the case, what alternative would you suggest and add the rational for your view.</p>	<p>favours an approach based on open standards and interoperability between simulation platforms, but that still respects the intellectual property contained in plant models. Such standards exist, e.g. <u>Functional Mock-up Interface (fmi)</u>, and the approach developed by the IEEE and Cigre (Cigre Technical Brochure 958, “Guidelines for use of real-code in EMT models for HVDC, FACTs and inverter based generators in power systems analysis”, February 2025). Further, it is important to ensure that EMT models remain suitable for use in simulations for the lifetime of the assets that they represent, without the need for significant intervention due to e.g. simulation platform changes</p>
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