

# Annual Audit of the Scheduling and Dispatch Process

---

2022 and 2023 Terms of Reference

---

27 Oct 2022



## Disclaimer

EirGrid as the Transmission System Operator (TSO) for Ireland, and SONI as the TSO for Northern Ireland make no warranties or representations of any kind with respect to the information contained in this document. We accept no liability for any loss or damage arising from the use of this document or any reliance on the information it contains. The use of information contained within this consultation paper for any form of decision making is done so at the user's sole risk.

## Contents

1.	Introduction .....	4
2.	Consultation Report .....	4
3.	Scope of the 2022 and 2023 Audits .....	11
4.	Reporting Requirements .....	14

## 1. Introduction

In compliance with Paragraph 9 of Condition 10A and Condition 22A of the respective Transmission System Operator Licences, EirGrid plc and SONI Limited ('the Transmission System Operators') are required to undertake a periodic audit of the operation and implementation of the scheduling and dispatch process.

The licence conditions state that -

*'The Licensee shall arrange for the carrying out of a periodic audit of the scheduling and dispatch process, its operation and implementation in accordance with directions given to it from time to time ... in respect of such matters as ... (the Commission for Regulation of Utilities and the Utility Regulator (collectively referred to as 'the Regulatory Authorities'))... considers appropriate, including.....*

*(A) the frequency, audit period, process and timetable for the audit;*

*(B) the selection, appointment and tenure of a person or firm to carry out the audit;*

*(C) the terms of reference for the audit;*

*(D) the publication of the audit report and of any other relevant materials;*

The 2022 audit period will be from 01 January 2022 to 31 December 2022 inclusive ("2022 audit"). The 2023 audit period will be from 01 January 2023 to 31 December 2023 inclusive ("2023 audit").

This document sets out the Terms of Reference (TOR) for both the 2022 and 2023 audits of the scheduling and dispatch process. Its publication follows a public consultation on the proposed scope and this document also includes the Consultation Report.

## 2. Consultation Report

The Transmission System Operators received four submissions during the consultation period which closed on 23<sup>rd</sup> September 2022. Submissions were received from Bord Gáis Energy, Mutual Energy, SSE and Wind Energy Ireland. The Transmission System Operators would like to thank these parties for their representations, all of which are

published with this document and which were forwarded to the Regulatory Authorities and the Auditor.

While the consultation sought feedback on the proposed scope for the 2022 and 2023 audit periods the Transmission System Operators received additional representations both in relation to the audit process and the scheduling and dispatch process. We have addressed all representations in the interests of providing clarity.

The following table summarises the representations received on the matter of the scope for the 2022 and 2023 audit periods.

Representations on the Scope	Transmission System Operators' Response
<p>Two representations queried whether the Terms of Reference can accurately reflect change activities such as those arising from the Scheduling and Dispatch Programme or updates that may take place in the area of interim cross-zonal arrangements for example.</p>	<p>The Scheduling and Dispatch audits are conducted under the Reasonable Assurance engagement in line with the International Standard on Assurance Engagements 3000 (Revised). Links to current versions of licences, codes, decisions and methodologies are provided for clarity in the draft Terms of Reference for consultation. For any new versions of these specific licences, codes, decisions and methodologies that are published after the date of this consultation and applicable in the audit period, the cited paragraphs will remain in scope provided that there are no material changes to the substance of the paragraph.</p> <p>In the case of material changes to the substance of the paragraphs, the scope will need consideration in line with the approved Terms of Reference (e.g. changes in activities due to the Scheduling and Dispatch Programme or updates that may take place in the area of interim cross-zonal arrangements will be taken into account, provided they are applied for the relevant audit period). The final scope of licences and codes for 2022 and 2023 Audits will be published in the respective Assurance Reports.</p>
<p>One representation queried the consequence of Cross Zonal Actions being a separate pillar from</p>	<p>The feedback regarding this point has been noted. In previous Audits, Priority Dispatch and Cross Zonal Actions were treated as one pillar, however,</p>

<p>Priority Dispatch and noted overlap between the two pillars.</p>	<p>for the purposes of the ToR for 2022 and 2023, the Regulatory Authorities requested that Cross Zonal Actions to be treated as a separate pillar.</p>
<p>One representation asks for clarity on how the excluded items from the Scheduling &amp; Dispatch audit will be subject to audit.</p>	<p>The TOR sets out that the audit is conducted by an externally appointed independent auditor under the Reasonable Assurance engagement in line with the International Standard on Assurance Engagements 3000 (Revised). Reasonable assurance will allow for an assessment by the appointed independent external auditors of the underlying risks associated with the audit engagement, performance of test procedures and gathering sufficient appropriate evidence.</p> <p>Additionally, EirGrid plc and SONI Ltd. operates a three lines of defence model, which is distinguished among three lines involved in effective risk management.</p> <ul style="list-style-type: none"> <li>• First Line of Defence, which include functions that own and manage risks</li> <li>• Second Line of Defence, which include functions that oversee risk</li> <li>• Third Line of Defence, which include functions which provide independence assurance</li> </ul> <p>Assurance activities are undertaken across the three lines of defence, specifically;</p> <ul style="list-style-type: none"> <li>• First Line of Defence: Assurance comes directly from those responsible for delivering specific objectives or processes. Assurance activities include but are not limited to development of governing controls, processes and procedures, management self-assessments and quality assurance activities</li> <li>• Second Line of Defence: Assurance comes from the oversight of management activity, separate from those responsible for delivery but not independent of the organisation's</li> </ul>

	<p>management. Assurance activities include but are not limited to development of risk and compliance management frameworks, risk-based approach compliance monitoring and risk-based approach risk monitoring</p> <ul style="list-style-type: none"> <li>• Third Line of Defence: Assurance comes from those who provide independent and objective assurance regarding the integrity and effectiveness of risk management and related controls. Assurance activities include but are not limited to risk-based approach audit engagements and observation assurance.</li> </ul> <p>Licencing obligations including, those which are achieved through the Scheduling and Dispatch processes are subject to the assurance activities including periodic risk -based monitoring, which are undertaken within EirGrid plc's and SONI Ltd.'s three lines of defence model. As such, although there are some elements considered out of scope for the Scheduling and Dispatch Audit, the three line assurance defence model is still applied.</p>
<p>One representation requested that more detail of the audit process and findings is included in the audit report.</p>	<p>The published Independent Assurance Reports on compliance with specified elements of the Scheduling and Dispatch process for the 15 month period ended 31 December 2019 and the 12 month period ended 31 December 2020 comply with paragraph 69 of ISAE 3000 setting out minimum Assurance Report requirements.</p> <p>The Approach Document which accompanies each Independent Assurance Report provides a significant amount of detail of all procedures performed in the audit engagement as well as audit matters associated with key risks which is not typical for similar audits.</p>
<p>One representation requested that the Scheduling and Dispatch software, its performance and the verification of inputs and outputs to be included in the scope of the audit.</p>	<p>The optimisation engines and associated algorithms within the Market Management System (Long Term Scheduling, Real Time Commitment and Real Time Dispatch) are proprietary, third-party systems which the Transmission System</p>

	<p>Operators cannot provide access to. The exclusion of the optimisation engines and associated algorithms has been discussed and agreed with the Regulators before the commencement of the 2018/2019 report and auditing the optimisation engines themselves was never the intention of the audit engagement.</p> <p>Insofar as they are relevant to the scope of the audit, the inputs into the scheduling and dispatch process and the outputs from the optimisation engines form part of the scope of the audit. The optimisation outputs are utilised in a significant portion of the audit procedures.</p> <p>If any changes occurred to the optimisation engines and associated algorithms within the 2022/2023 audit periods, these changes will be included in the scope of the engagement under Pillar 7, Information Technology General Controls where the external auditor will complete testing over the change management process undertaken over the optimisation engines' associated algorithms. This would consist of testing IT general controls supporting the change. It would not include the performance of any independent code review.</p>
<p>Two representations requested clarity on the scope of the scheduling and dispatch of interconnectors in the audit.</p>	<p>For the purpose of clarity, Scheduling and Dispatch scope does not include long term actions ahead of day ahead, such as capacity calculation and outage coordination, and other aspects such as compensation, loss factors and ramping. Interconnectors are also tested through other Pillars including Pillar 1 Priority Dispatch (Curtailment Events), Pillar 3 Dispatch Instructions (Interconnector Reference Programs), Pillar 5 Operational Constraints (Interconnectors included in the constraint testing) and Pillar 6 Constraint Flagging (Creation of Non-Marginal flags).</p>
<p>One representation requested that the audit includes the validation of data published in relation</p>	<p>The development of inputs such as Outage Planning and Operational Constraints is outside</p>

<p>to specific input elements of the Scheduling and Dispatch Process such as Operational Constraints. Another representation requested to review the process to optimise and reduce the period of network outages on the transmission system.</p>	<p>the scope of the scheduling and dispatch audit. Moreover, the validation of data published is outside of the scope of the audit. However, to ensure the completeness and accuracy of testing procedures in relation to specified elements, Operational Constraint Updates are specifically included and referenced in procedures, e.g. 32-35 of the published Independent Assurance Report on compliance with specified elements of the Scheduling and Dispatch process for the 12 month period ended 31 December 2020.</p>
<p>One representation queried the exclusion of “Actions taken with market participants by the TSOs to resolve performance issues during the scheduling and dispatch process” from audit scope.</p>	<p>Performance issues referenced are unit issues such as not responding to set points or other Grid Code requirements Actions taken with market participants is outside the scope of the audit.</p>

The following table summarises the representations received on other matters for the 2022 and 2023 audit periods.

<b>Representations on the Auditor, Audit Procedures and Clarifications</b>	<b>Transmission System Operators’ Response</b>
<p>One representation included commentary on the requirements of the Auditor</p>	<p>The Auditor was appointed following an OJEU public procurement process which sought the services of a suitable, independent, organisation to undertake an audit to specific, appropriate international standards.</p> <p>The Transmission System Operators are satisfied that the provider has the necessary capability and skills to perform this work under the International Standard on Assurance Engagements 3000 (Revised), ‘Assurance engagements other than audits or reviews of historical financial information’ issued by the International Auditing and Assurance Standards Board (hereinafter referred to as ISAE 3000).</p>

	<p>The chosen PwC team includes both auditors and subject matter experts with appropriate energy utility experience.</p>
<p>One representation recommended testing whether actions to minimise curtailment and constraint events were taken before dispatching down priority dispatch, such as minimising conventional generation output and interconnector trading.</p>	<p>These tests are included in the audit procedures, as per the Independent Assurance Reports for 2018/19 and for 2020 respectively. Please refer to test procedure 18 Curtailment Events and 19 Constraint Events (Pillar 1: Priority Dispatch and Cross Zonal Actions) of these published Independent Assurance Reports on compliance with specified elements of the Scheduling and Dispatch process for the 15 month period ended 31 December 2019, and for the 12 month period ended 31 December 2020 respectively.</p>
<p>Two representations requested the opportunity to propose specific periods for inclusion in the audit process.</p>	<p>The auditor selects days/periods of interest independently. The auditor will select a sample of Settlement Days for testing. The days reviewed will be based on the Auditor's assessment of risk. It will represent a mixture of "normal" days and other days where they identify unusual factors (e.g. outages, System Alerts, generator trips, weekends, high wind days or days around a specific system / market event) which, in their view, represent a risk as to compliance with internal operating procedures.</p> <p>The Transmission System Operators sought feedback on specific periods identified by participants as being of interest for the 2021 audit period and passed on all representations for the Auditor's consideration for the 2021 audit. The TSOs will seek input again for 2022 and 2023 audits through a survey prior to the start of each audit.</p>
<p>One representation discussed the wind dispatch methodology including the appropriateness of the distribution and application of dispatch volumes.</p>	<p>It is not the purpose of an audit to develop methodologies such as those which seek to implement policy decisions and Regulations but to test against methodologies which are in place.</p>

One representation requested a change to the scheduling and dispatch process, proposing an 'actions for energy first' principle.	Changes to the scheduling and dispatch process are outside the scope of the audit.
----------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------

### 3. Scope of the 2022 and 2023 Audits

The audit of the scheduling and dispatch process is separate to the SEM Trading & Settlement Code Market Audit and the SEM Capacity Market Code Market Audit. The obligations for those audits are set out in the Trading and Settlement Code and the Capacity Market Code. The Transmission System Operators intend that the scope of those audits remains separate to the audit of the scheduling and dispatch process.

The Transmission System Operators intend that the scope of the scheduling and dispatch process audit will consist of an assessment in respect of our compliance with regulatory requirements (collectively called 'The Requirements') as they relate to specified elements of the scheduling and dispatch process for the periods 01 January 2022 to 31 December 2022 and 01 January 2023 to 31 December 2023.

It is the responsibility of the Auditor, to assess on a sample basis, the compliance of the Transmission System Operators with The Requirements in respect of the specified elements of the scheduling and dispatch process as noted below.

#### **Matters which will be considered within the scope of the Assurance Report**

The Requirements outlined below as they relate to specified elements of the scheduling and dispatch process are proposed for inclusion within scope for the 2022 Audit and subsequent 2023 Audit.

#	In Scope Items	Criteria EirGrid <sup>1</sup>	Criteria SONI <sup>1</sup>
1	Priority Dispatch	<b>EirGrid Transmission System Operator Licence</b> (" <a href="#">EirGrid TSO</a> ")	<b>SONI Transmission System Operator Licence</b> (" <a href="#">SONI TSO Licence</a> ")

<sup>1</sup> Links to current versions of licences and codes provided for clarity. If any new versions to these specific licences and codes are published after the date of this consultation, the cited paragraphs in each of the licences and codes will remain in scope provided that there are no material changes to the substance of the paragraph. In the case of material changes to the substance of the paragraphs, the scope will need to be reconsidered by the TSO. The final scope of licences and codes for 2022 and 2023 Audits will be published in the respective Assurance Reports.

		<p><b>Licence</b>") Condition 10A – Para. 4(a)/(b) &amp; 5(f), (i) <b>Other requirements:</b> <a href="#">SEM-11-062</a> Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code SEM Committee Decision Paper</p>	<p>Condition 22A – Para. 4(a)/(b) &amp; 5(f), (i) Condition 9A <b>Other requirements:</b> <a href="#">SEM-11-062</a> Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code SEM Committee Decision Paper</p>
2	Cross Zonal Actions	<p><b>Interim Cross-zonal arrangements:</b>  <a href="#">Article</a>: 3: 15 &amp; 16; 4: 24 and 5: 26 &amp; 27.</p>	<p><b>Interim Cross-zonal arrangements.</b>  <a href="#">Article</a>: 3: 15 &amp; 16; 4: 24 and 5: 26 &amp; 27.</p>
3	Dispatch Instructions	<p><b>EirGrid TSO Licence</b> Condition 10A – Para. 2, 4 and 5  <b>Other requirements:</b>  For 2022 Audit Period: <a href="#">SEM-21-88 Trading and Settlement Code Scheduling &amp; Dispatch Parameters 2022 Decision Paper</a>  2023 Scheduling and Dispatch Parameters consultation has not yet taken place.  <a href="#">EirGrid Grid Code</a> CC. 8.2.1</p>	<p><b>SONI TSO Licence</b> Condition 22A – Para. 2, 4 and 5  <b>Other requirements:</b>  For 2022 Audit Period: <a href="#">SEM-21-88 Trading and Settlement Code Scheduling &amp; Dispatch Parameters 2022 Decision Paper</a>  2023 Scheduling and Dispatch Parameters consultation has not yet taken place.  <a href="#">SONI Grid Code</a> CC 5.3.1</p>
4	Merit Orders	<p><b>EirGrid TSO Licence</b> Condition 10A – Para. 3  <b>Other requirements:</b>  EirGrid Grid Code SDC 1.4.7.3 / SDC1.4.7.4 and SDC2.4.2.14</p>	<p><b>SONI TSO Licence</b> Condition 22A – Para. 3  <b>Other requirements:</b>  SONI Grid Code SDC 1.4.8.3 / SDC1.4.8.4 and SDC2.4.2.14</p>
5	Operational Constraints	<p><b>EirGrid TSO Licence</b> Condition 10A – Para. 4(a)(b) &amp; 5(d)</p>	<p><b>SONI TSO Licence</b> Condition 22A – Para. 4(a)(b) &amp; 5(d)</p>
6	Constraint Flagging	<p><b><a href="#">Trading and Settlement Code – Part B</a></b> Flagging of Accepted Bids and Offers E.3.3.1  Trading and Settlement Code Part B Appendices, APPENDIX N: Flagging and Tagging, System Operator and Non-Marginal Flagging Paragraph 1-5  <a href="#">Methodology reference</a>: Methodology for determining system operator and non-marginal flags.</p>	<p><b><a href="#">Trading and Settlement Code – Part B</a></b> Flagging of Accepted Bids and Offers E.3.3.1  Trading and Settlement Code Part B Appendices, APPENDIX N: Flagging and Tagging, System Operator and Non-Marginal Flagging Paragraph 1-5  <a href="#">Methodology reference</a>: Methodology for determining system operator and non-marginal flags.</p>

7	IT General Controls required to support the areas noted in items 1-6 above	While not specifically discussed in the regulations, the TSO's maintenance of IT General Controls over key systems supporting items 1-6 above is key to the overall testing approach.
---	----------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

The following is specifically excluded from the Assurance Engagements:

- The algorithms associated with the optimisation engines, which produce the Long-Term Scheduling (“LTS”), Real Time Commitment (“RTC”) and Real-Time Dispatch (“RTD”) schedules, used in the scheduling and dispatch process;
- The Imbalance Pricing process which takes place after the scheduling and dispatch process has ended;
- Validation of data submitted to the Transmission System Operators by participants;
- Inputs such as forecasts which are provided by third parties;
- Inputs such as transmission and generator outage plans;
- The derivation of operational constraints;
- Actions taken with market participants by the Transmission System Operators to resolve performance issues during the scheduling and dispatch process;
- Resolution and validation of known system issues and defects which were not resolved in advance of the start of the 2022 Audit and 2023 Audit period respectively;
- An assessment of the compliance of the Transmission System Operators in relation to any regulations other than those specifically referenced in the table above;
- Any regulations which are cross referenced within the regulations listed as the criteria but not specifically identified as criteria themselves, other than those specifically referenced in the table above;
- Validation that data published in relation to the specified elements of the scheduling and dispatch process on the EirGrid ([www.eirgridgroup.com](http://www.eirgridgroup.com)), SONI ([www.soni.ltd.uk](http://www.soni.ltd.uk)), and SEMO ([www.sem-o.com](http://www.sem-o.com)) websites is complete and

accurate unless specifically included in testing procedures, for example, Operational Constraint Updates;

- An assessment of the compliance of the company in relation to the Regulation on Wholesale Energy Markets Integrity and Transparency (REMIT); pending the implementation of a full solution, at which time it will be considered for inclusion.
- An assessment of the engineering decisions that The Transmission System Operators make when actioning internal operating procedures relevant to the specified elements of the scheduling and dispatch process; and
- Validation that system security has been maintained at all times.
- Any actions associated with Interim Cross Zonal TSO Arrangements for GB-ISEM go-live that are not System Operator actions or are long term System Operator actions that take place ahead of Scheduling and Dispatch.

## 4. Reporting Requirements

The outcome of the 2022 audit and the 2023 audit, which will be undertaken by an independent external Auditor, will be an Assurance Report for each audit period which includes an opinion over the Transmission System Operators' compliance with specific regulatory requirements as they relate to specified elements of the scheduling and dispatch process for the audit periods.

The engagement will be a Reasonable Assurance engagement in line with the International Standard on Assurance Engagements 3000 (Revised), - 'Assurance engagements other than audits or reviews of historical financial information' issued by the International Auditing and Assurance Standards Board.

The Assurance Report will consist of an Opinion which refers to an Approach Document which may include detailed information on the terms of the engagement, the applicable criteria that were used, findings identified in relation to particular aspects of the engagement, details of qualifications identified, details of the experience of the practitioner and the individuals involved in the engagement, disclosure of materiality levels, and any recommendations of note.

The Auditor, in undertaking their assessment, will assess the risk of a material non-compliance in relation to The Requirements which are within the scope of the Assurance Report. In areas where they identify specific risks, or where weaknesses are identified in the operation of specific internal controls, further substantive tests of detail of the relevant underlying data will be executed. The Auditor will present this assessment of applicable risks and responses in the 2022 Audit and 2023 Audit Assurance Reports. The intention is that the audit Assurance Report and Approach document will be issued to the Regulatory Authorities within six months of the end of each audit period. However, the lead time will be dependent on the extent and publication date of the scope. The Auditors reports will subsequently be published by the Transmission System Operators.

Working arrangements currently in place are subject to ongoing review. Transmission System Operators will inform the Regulatory Authorities in a timely manner should a resultant delay be expected.