

Periodic Audit of the Scheduling and Dispatch Process, its Operation and Implementation

Terms of Reference

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Background

EirGrid's and SONI's Transmission System Operator licenses include obligations to plan, operate, maintain, co-ordinate and direct the flow of electricity onto and over, the transmission system in a safe, reliable, economic, efficient and coordinated manner.

Furthermore the licences make provision for an audit of the scheduling and dispatch process:

'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;

And: the Licensee shall provide, or arrange for the provision, in a timely manner of such information, reports or other assistance (whether to (the Regulatory Authorities) or to another person specified by (the Regulatory Authorities) as (the Regulatory Authorities) may request concerning the audit. The Licensee shall, where directed to do so.....implement the recommendations contained in any audit report.'

This document sets out the terms of reference for the audit of the scheduling and dispatch process and is the result of a period of engagement between the Regulatory Authorities and EirGrid and SONI.

Policy Framework

The scheduling and dispatch process operates within an obligations framework that includes European Directives and Regulations, National Legislation, Regulatory Decisions, Licences and Codes. A complete list of obligations is set out in the [Balancing Market Principles Statement](#).

Sources of specific scheduling and dispatch process obligations include, but are not limited to:

- Licence to Participate in the Transmission of Electricity granted to SONI Limited;
- Transmission System Operator Licence granted to EirGrid;
- SONI Grid Code which includes the Scheduling and Dispatch Code;
- EirGrid Grid Code which includes the Scheduling and Dispatch Code;
- The Trading and Settlement Code;
- SEM-11-062 on Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code;
- SONI Operating Security Standards;
- EirGrid Operating Security Standards;
- Implementation of EirGrid/SONI Operational Constraints Updates;
- Implementation of EirGrid/SONI Methodology for determining System Operator and Non-Marginal Flags;
- Regulation (EU) 1227 / 2011 on Wholesale Energy Market Integrity and Transparency (REMIT).

Audit Objective and Principles

The scheduling and dispatch process is a complex, dynamic and continuous process. EirGrid and SONI will apply the following principles to the audit:

- The objective of the audit is to provide an assurance opinion to market participants and Regulatory Authorities that the obligations relating to the scheduling and dispatch of generator units contained in the above documents are met;
- The intention is to undertake an audit that is of value to participants, given the constraints of what is practically feasible at a reasonable cost and without undermining the ongoing operation of the system and balancing market;
- Aspects of the scheduling and dispatch process which have the greatest impact on financial outcomes for participants and consumers will be given priority over less impactful aspects;
- The persons undertaking the audit will be fully independent and external;
- EirGrid and SONI will agree audit procedures with the Auditor;
- EirGrid and SONI will take all reasonable steps to access and furnish the information and data required for the audit;
- The audit report will be published.

Frequency and Audit Period

The first audit will take place in January 2020 and the period the first audit will review is from 1st October 2018 to 31st December 2019.

It is expected that this period will align with the period of the first audit of the Revised Market Arrangements as described in Part C of the Trading and Settlement Code¹.

Subsequent audits will then take place annually and on a calendar year basis.

For the audit of the period from 1st October 2018 to 31st December 2019, EirGrid and SONI will arrange to provide to the Regulatory Authorities a summary progress report including any issues identified by November 2019.

¹ Trading and Settlement Code, Part C states: *“Where the Cutover Time does not coincide with the start of a Year, then.....the period covered the period covered by the first audit under Part B of the Code shall be from the Cutover Time until the end of 31 December next occurring (or if that period is less than 6 months, then until the end of the following 31 December).”*

Selection, Appointment and Tenure of Auditor

EirGrid and SONI will appoint an independent, external auditor. The appointment will be for a minimum of three years. The appointment will follow a public procurement process which started in December 2018.

The Auditor will be expected to develop an audit plan and deliver to agreed milestones.

The Auditor will be responsible for developing an audit methodology. EirGrid and SONI will work with the Auditor to develop procedures for the audit. The Auditor will be responsible for producing an audit report which will be published by EirGrid and SONI.

The audit report will be a Reasonable Assurance Opinion in line with International Standard on Assurance Engagements (ISAE 3000). This will include a description of the procedures undertaken to enable market participants' understand the extent and nature of the audit undertaken.

The expectation is that appropriate International Standards on Auditing (ISA) and best practice will be adopted by the Auditor. And that the principles of integrity, professionalism, scepticism, fairness, and independence will be applied appropriately.

Defining the Scheduling and Dispatch Process

The 'scheduling and dispatch process' is the overall process resulting from the multiple inputs, processes and outputs which enable EirGrid and SONI to operate a secure system and efficient balancing market. It is a continuous process managed in a coordinated manner from the EirGrid and SONI control centres using a range of operational systems, processes and procedures.

To determine the scope of the audit of *'the scheduling and dispatch process, its operation and implementation'* it is necessary to first define the scheduling and dispatch process i.e. when / where it starts and ends.

For the purposes of the audit, EirGrid and SONI propose to define the start of the process as the point at which we receive the various and numerous inputs required for the core scheduling and dispatch activities. And that the process ends with the delivery of the outputs of those core activities. Table 1 below describes at a high level the start, middle and end of the process.

Table 1: Indicative Scheduling and Dispatch Process for the Audit

Start	Middle	End
Receipt of Inputs	Processing	Delivery of Outputs
Physical Notifications	LTS, RTC, RTD sequences	LTS, RTC, RTD schedules
Commercial Offer Data	Composite Cost-Curve Calc.	Dispatch Instructions
Unit Technical Data	Merit Orders	SO and Non-Marginal Flags
Unit Availability	Application of Constraints	Reports
Transmission Availability	Etc.	Etc.
Demand Data		
Policy Parameters		
Operational Constraints ²		
Ancillary Services Requirements		
Etc.		

The inputs in the process include participant data, system data and parameters to give effect to a range of policies. These inputs are processed by systems designed to give effect to all of EirGrid and SONI’s obligations. The outputs include Indicative Operations Schedules, dispatch instructions, imbalance pricing calculation factors and market reports.

Scope of the Audit

The audit of the scheduling and dispatch process is separate to the SEM market audit and the SEM capacity market audit. The obligations for those audits are set out in the Trading and Settlement Code and the Capacity Market Code. EirGrid and SONI intend that the scope of those audits remains separate to the audit of the scheduling and dispatch process.

EirGrid and SONI intend that the scope of the audit will consist of a review of the operation and implementation of the scheduling and dispatch process described above with reference to relevant methodologies, systems, processes and procedures and considering our obligations framework.

² Their definition and configuration in the scheduling and dispatch process.

Matters which will be considered within the scope of the audit include:

- Operational methodologies, systems, processes and procedures; Exceptional circumstances, where we have deviated from processes and procedures, such as those listed in Section 5 of the Balancing Market Principles Statement.
- Priority Dispatch and requirement for TSOs annual review;
- Dispatch Instructions;
- Market resolution of energy imbalances, including inputs to, and outputs from, the Real Time Dispatch (RTD) tool and the comparison to scheduling and dispatch decisions;
- Provide an insight into Real Time deviations from Physical Notifications. This should recognise that the audit is limited in respect of engineering decisions. Therefore, a random sample (approx. 10 events including a 1-4 hour period around the event as appropriate for the nature of the event) of different historical days in different times of system stress and non-stress will be examined. The deviations will be considered from a reasonableness perspective, and a description and rationale should be identified;
- The definition and configuration of Operational Constraints³ in the scheduling and dispatch process and the determination of System Operator and Non-Marginal flags;
- Cross-Zonal Actions;
- Merit Orders;
- Minimisation of the cost of diverging from participant physical notifications and the cost of non-energy actions;
- The TSOs' reporting and publication requirements.

Additional matters which will be considered outside of the scope of the audit of the scheduling and dispatch process include:

- The Imbalance Pricing process takes place after the scheduling and dispatch process has ended. Therefore Imbalance Pricing is outside of the scope.

³ The Operational Constraints are listed in the monthly EirGrid/SONI Operational Constraints Update [[May 2019 Example](#)].

- Incorrect or missing participant data can influence the outcome of the scheduling and dispatch process however EirGrid and SONI are not responsible for participant errors or omissions.
- Reviews of inputs such as renewable forecasts which are provided by third parties are outside the scope of the audit.
- Reviews of inputs such as transmission outage plans and generator outage plans and the derivation of operational constraints are outside the scope of the audit.
- While participant unit performance issues may be identified during the scheduling and dispatch process, the actions taken to resolve these issues with a Market Participant are outside of the scheduling and dispatch process.
- It is recognised that there were known system issues and defects which were not resolved in advance of go-live of the Revised Market Arrangements. Where the audit process identifies an issue caused by a known system issue or defect, such an issue should not affect the conclusions of this audit. The known system issues and defects will be acknowledged and listed in the audit report where necessary. The existence and implementation of a procedure by which new system issues are escalated to the appropriate business owner will be considered in-scope.
- It was not possible to fully test systems, processes and procedures during market trials. Therefore EirGrid and SONI propose that due consideration be given to interpret EirGrid and SONI's implementation of methodologies, systems, processes and procedures in the first six months after go-live of the Revised Market Arrangements.
- With respect to the Trading and Settlement Code, only System Operator obligations which pertain to the scheduling and dispatch process will be in-scope.

Reporting Requirements

The audit assurance report is intended to provide reasonable assurance to market participants and the Regulatory Authorities.

For the purpose of the audit assurance report, a materiality threshold will be expressed based on an appropriate percentage level of the estimated annual market value of energy traded in the All-Island Market, and it will be for parties to the process themselves to evaluate the financial impact of any errors or matters arising on their own businesses. The audit assurance report will also include a Report of Significant Issues identified during the audit which whilst not material in the context of the audit and not resulting in a qualified Audit Opinion, may have a significant impact on Parties to the Process. Both qualitative and quantitative factors will be taken into account when determining the significance of an issue and could be for reasons such as frequency of occurrence or potential financial impact.

The audit assurance report will be issued to the Regulatory Authorities two weeks before publication by EirGrid and SONI which should be no later than four months after the audited period ends.