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**SEM Market Audit
Independent Market Auditor's Report
for the year ended 31 December 2016**

6 April 2017



Agenda

- Introductions
- Market Audit Scope
- Market Audit Opinion
- Report of Significant Issues
- Other Matters Arising
- Follow-up on Prior Period Issues
- Agreed upon Procedures – Follow-up
- Questions

Market Audit Scope

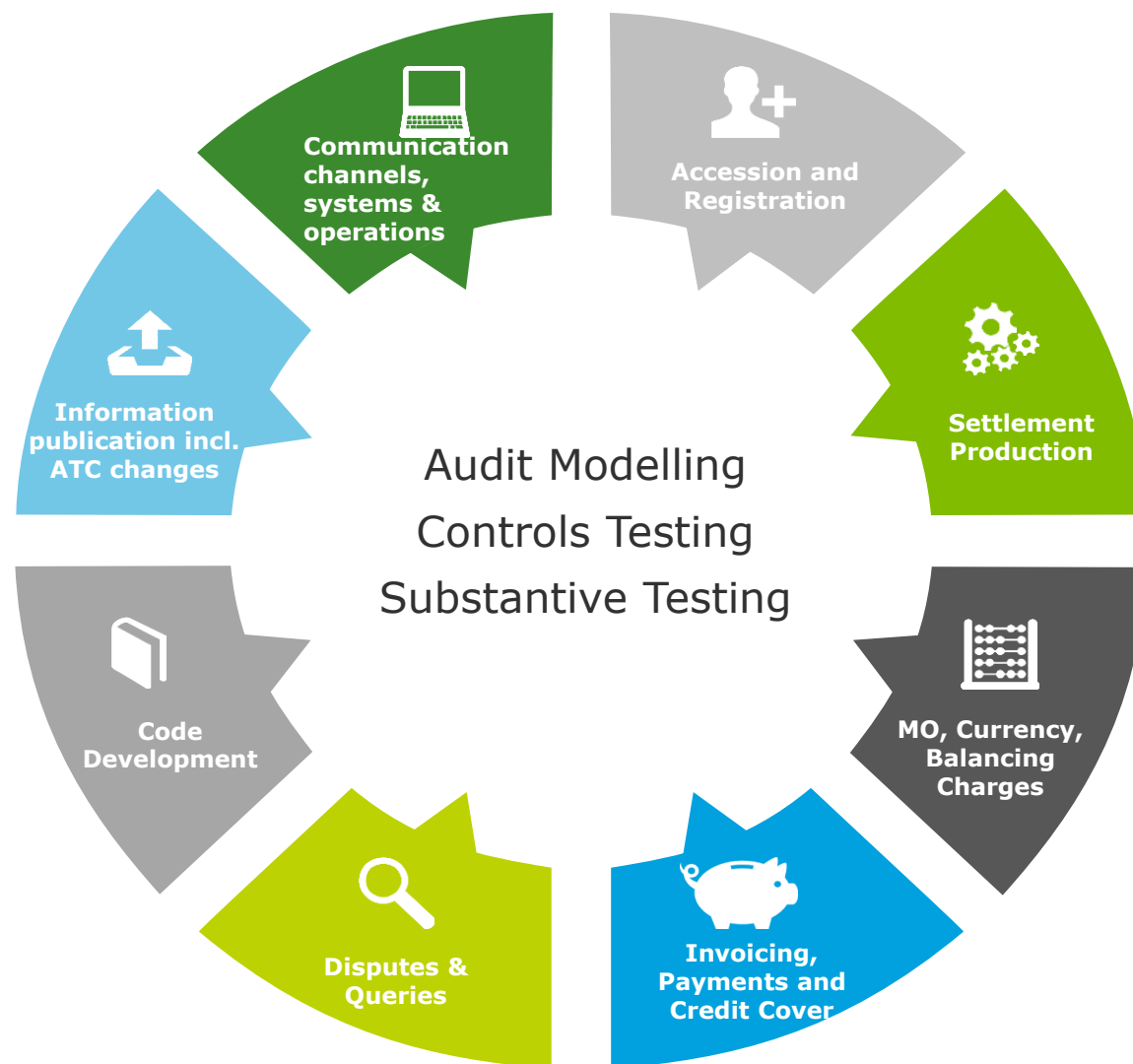


Market Audit Scope

- Requirements of the Code relating to the Market Audit are set out in the Trading & Settlement Code paragraphs 2.131 to 2.143
- Terms of reference of the Market Audit
 - Regulatory Authorities (“RAs”) undertook consultation with Parties upon completion of the 2015 Market Audit
 - Final scope of the Market Audit was set out in the RAs’ decision paper “Terms of Reference for the Market Audit SEM-16-033” published on 29 June 2016
 - Scope of Market Audit continues to focus on compliance with relevant aspects of the Code and Agreed Procedures by the Single Electricity Market Operator (“SEMO”)
 - In addition it included a follow-up of Agreed Upon Procedures (“AUPs”) findings from previous years’ audits
 - Audit period from 1 January 2016 to 31 December 2016
- Audit materiality
 - Set at 0.25% of estimated annual market value of energy traded in the Market, approximately €3.6m, used in planning audit work and in reporting to evaluate impact of issues (including quantitative and qualitative aspects)
 - Threshold for significant issues set at 10% of materiality, i.e. €0.36m

Market Audit Scope (Continued)

SEMO Activities covered by the Market Audit Scope are as follows:



Market Audit Scope and Exclusions

- The Market Audit scope has certain specific exclusions relating to MSP (Unit commitment, Economic dispatch and Calculation of shadow prices)
- Other exclusions and limitations for Market Audit Opinion relating to activities performed by RAs, Transmission System Operators (“TSOs”), Meter Data Providers (“MDPs”), for example:

**Provision of
metered generation
data by TSOs &
MDPs**

**Provision of
metered & profiled
demand data by
MDPs**

**Provision of
Dispatch
Instructions & Real
Time Availability by
TSOs**

**Determination of
Transmission Loss
Adjustment Factors
by the TSOs**

**Submission of
Technical &
Commercial Offer
Data by Generators**

Market Audit Opinion



Market Audit Opinion

- International Standard on Assurance Engagements (ISAE) 3000 – “*reasonable assurance*”
- Reliance on the report
 - Report addressed to RAs and Parties to the Code
 - Letters of Release
 - Notice re: distribution and publication
- Non-compliances reported in Market Operator Monthly Reporting not repeated unless material to audit
- Period covered – 1 January to 31 December 2016, including resettlement performed within this period
- Responsibilities of the Single Electricity Market Operator, Regulatory Authorities, Market Auditor and Parties to the Code
- Audit scope – set out in *Terms of Reference for the Market Audit SEM-16-033*
- Basis of assurance opinion
- Opinion

Market Audit Opinion (Continued)

“On the basis set out above and subject to the exclusions noted in the Responsibilities of the Market Auditor section above, in our opinion, during the period from 1 January 2016 to 31 December 2016 the Single Electricity Market Operator (“SEMO”) has, in all material respects, complied with the Code and relevant Agreed Procedures as set out in the “Terms of Reference for the 2016 Market Audit” published by the Regulatory Authorities on 29 June 2016”

Report of Significant Issues



Report of Significant Issues

No significant issues identified.

Other Matters Arising



Other Matters Arising

1. Netting Generator Unit Registration

- Each trading site requires Netting Generator Unit (NGU) registered by SEMO as per paragraph 2.62
- NGU for one Trading Site incorrect de-registered when one of two generator units de-registered
- Causes over-settlement to affected participant under certain circumstances
- Estimated impact less than €1,000, affecting less than 100 trading periods
- SEMO processes updated to avoid error in future, no intention to resettle given value

2. Treatment of Dispatch Instructions with same Instruction Time and Type

- Appendix O contains rules for treatment of dispatch instructions (DI) with same instruction time
- Rules do not cater for simultaneous wind instructions
- Exception noted where this lead to unit incorrectly treated as constrained, causing over-settlement of less than €4,000
- To be corrected in resettlement following receipt of appropriate query

Other Matters Arising (Continued)

3. Calculation of Ex-Post Capacity Weighting Factor

- Difference noted in ex-post capacity weighting for September 2015 M+13
- Investigation confirmed that step to update denominator of calculation not run following change of availability profile data
- Small error across all units, with largest differences under €20 / 0.01%
- SEMO processes updated to avoid error in future, no intention to resettle given value

4. Erroneous Supply Unit Deregistration

- Identified meter data for one unit not included in initial settlement for October 2016
- Further investigation confirmed due to supplier unit being incorrectly de-registered from the market due to system defect
- Unit not charged for relevant settlement following date issue occurred, resettlement after this date for earlier periods also affected
- Individual unit registration details in process of being updated to cause correction via resettlement
- Defect to be resolved via system fix

Other Matters Arising (Continued)

5. Organising Unit Registration Meeting

- Unit registration meeting must be organised within one day of completion of review and validation process
- Unable to confirm this had occurred for sample of registrations selected

6. Initial Credit Cover Requirement (ICCR)

- ICCR not issued within the two working day deadline for five applicants in our sample
- Delay of 21 days in one case, other four applicants had a one day delay
- Unit did not become active until after ICCR issued

7. Accession Deed to be sent by registered post

- For one of our sample, a participant based in Germany, Accession Deed not sent by registered post as per requirement in AP 1.

Other Matters Arising (Continued)

8. System and Application Access Control

- Items identified where systems and applications access controls not in line with good practice:
 - Privileged access not updated following change in user role
 - Review of user activity reports
 - Management review of server room access logs
- Findings represent deviations from requirements of AP5
- Updates to SEMO processes to be made to address specific points raised

9. Variable Market Operator Charge (VMOC)

- VMOC charged on basis of settlement net demand (SND) over billing period (paragraph 6.151)
- No charge should be applied if total SND for period is negative, however this rule is not applied by the settlement system
- Participants which are net exporters in a billing period therefore receive a payment, estimated total payments made in 2016 of €45-50k
- No change to settlement systems proposed given cost of change for remaining lifetime of SEM

Follow up on Prior Period Issues



Follow up on Prior Period Issues

Prior Period Issue	2016 Classification	2015 Classification
1. Error in calculation of Billing Period currency cost	Closed	Other
2. Approach to Testing of Market System Changes	Closed	Other
3. Calculation of Dispatch Quantity for Variable Price Taker Units	Closed	Other
4. Calculation of Dispatch Quantity with missing loading / de-loading rates	Closed	Other
5. Data Publication Discrepancy	Closed	Other
6. Failure Of A Meter Data Provider Type 3 Channel	Closed	Other
7. Registered Bank Charge	Closed	Other

Follow-up of Agreed upon Procedures Exceptions



Follow-up of Prior Year Agreed Upon Procedures Exceptions

Scope and Approach

- The 2010, 2011, 2013 and 2015 Market Audits included agreed upon procedures over certain activities of MDPs and TSOs in relation to generation, interval and non-interval metering, and dispatch instructions.
- Exceptions previously reported (against the AUP) were followed-up through interviews with relevant staff from each TSO/MDP with walkthrough of any new processes/controls. Detailed testing was not performed.

Summary of Findings

In general participants had taken action directly or as a result of wider system and process changes in respect of the original exception identified. However we would highlight the following items:

- **2010 & 2011 / 5 Meter reading data is complete:**
The approach and formality of QA around meter read exception management processes varies between participants.
- **2010 / 6 Metering data provided to SEMO is accurate:**
In response to issues raised regarding the use of tolerance limits all three participants had established new procedures, however for one entity these were informal in nature.
- **2010 / 10 Queries are resolved in a timely manner:**
Whilst the volume of queries remains low one entity has no process to log, track and monitor settlement queries.
- **2010 / 12 Dispatch instructions provided to SEMO are complete and accurate, including taking into account real-time events:**
One participant does not have a formal process for periodic QA of decisions made.

Follow-up of Prior Year Agreed Upon Procedures Exceptions (Continued)

Summary of Findings (Continued)

- **2011 / 1 New connections and disconnections are processed accurately and timely:**
At one entity whilst meter tests are now managed via work orders there is no monitoring of outstanding work orders to ensure timely completion.
- **2011 / 6 Metering data is accurate:**
Whilst one MDP now applies validation to data provided by the TSO no change has been made by the other MDP and reliance is placed on TSO validation.
- **2011 / 8 Meter reading data is transferred completely and accurately between SO and MDP (where appropriate):**
No action has been taken to discuss / compare specific validation rules applied between the different participants.
- **2011 / 9 Aggregation of metering data prior to submission to SEMO is complete and accurate:**
At one MDP whilst daily control reports are used our walkthrough identified several dates in the month examined (May 2016) where these had not been retained.
- **2011 / 11 Exception Handling:**
The extent of trend analysis varies across entities and where performed is often informal in nature.
- **2013 / 10 Aggregation of EACs/EUFs and AUFs and breaking down into interval values:**
The large usage factor threshold for one MDP is significantly higher than used by the other MDP and is significantly above threshold for interval metering.
- **2015 / 3 RCUC Constraint Rules:**
Differences were noted in respect of two RCUC rules when compared to the published rules although explanations were available in both cases.

Questions?





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