Market Systems Development Plan 5

MSDP 5 2012-2014

Abstract

This document fulfils the Market System Development Plan licencing requirement placed upon both SONI and EirGrid by NIAUR and CER respectively.

Date – July 29th 2013

Document History

Version	Date	Author	Comment
0.1	December 2012	SEMO	First Draft
0.2	January 2013	SEMO	Feedback from Modifications Secretariat
0.3	January 2013	NIAUR	Inclusion of the Forward Work Programme and Systems Architecture.
0.4	March 2013	SEMO	Updated Section 1 to include reference to the MIUN Calculator. Updated Sections 2 and 3 to include detail on past and upcoming releases.
0.5	March 2013	SEMO	Updates to Appendix 2
1.0	March 2013	SEMO	Final version for Regulatory Approval
1.1	April 2013	SEMO	Feedback from the Regulatory Authorities
1.2	June 2013	SEMO	Feedback from the Regulatory Authorities
1.3	July 2013	SEMO	Feedback from the Regulatory Authorities

Distribution List

Once authorised:

Name	Organisation
NIAUR	Northern Ireland Authority for Utility Regulation
Market Participants	All participants in the SEM
TSOs	EirGrid and SONI

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Introduction

The Market Systems Development Plan (MSDP) is a licence requirement placed upon both SONI and EirGrid by NIAUR and CER respectively. This two year plan is produced and reviewed annually in accordance with Condition 16 of the SONI Licence, "Licence to act as SEM Operator" and in accordance with Condition 4 of the EirGrid Licence, "Market Operator Licence granted to EirGrid plc".

This document is the fifth Market System Development Plan (MSDP) developed by SEMO for the period from 1st October 2012 to 30th September 2014. The plan identifies the issues that SEMO face in relation to the operation, administration and development of the Single Electricity Market (SEM).

Scope of Plan

MSDP5 2012-2014 is designed to provide a view of upcoming activities in the market, in addition to the update on market changes. It provides a forward view of upcoming system requirements, as well as acknowledging future policies that will impact on the SEM. The content of the plan thus reflects this development of the SEM. The plan is accordingly structured with the following Sections:

Section 1 aimed at providing a high level overview of SEM IT systems and illustrates the range of Central Market Systems that SEMO develop, maintain and support.

Section 2 This section identifies work progressed and completed since MSDP4.

Section 3 Provides a summary of the content of the May 2013 and October 2013 releases.

Section 4 This Forward Work Programme section identifies areas of potential work and their possible impacts. The initiatives described in this section are not a definitive list but rather what is likely to be addressed based upon the future work programmes of the Regulatory Authorities and industry developments within the two year period, 2012 to 2014.

Section 5 relates specifically to IT projects under commitment or proposed. This section provides an update on the progress of the Capital Programme approved in the SEMO Price Control.

Section 1 – Overview of the SEM Systems

The purpose of this section is to provide a brief overview of the SEM Central Market Systems (CMS) so readers of this document can conceptualise the complexity and structure of the market systems. In particular, this section provides a brief description of the key functionality contained within each of the core CMS subsystems (see page 7) along with the some of the key data feeds and participant interactions with the market processes. The diagram also identifies some of the vendors that provide the various parts of the overall Central Market System solution.

Market Infrastructure (MI) system

The Market Infrastructure (MI) system is the main interface for Participants, Transmission System Operators (TSOs), Meter Data Providers (MDPs) and Interconnector Administrators (IAs). It provides communications through screens (Type 2) and through computer-to-computer interactions via Web Services (Type 3). It also provides an interface to SEMO to allow monitoring, control and operation of the SEM. The main functions of the Central Market System are as follows:

- Registration – including registration of Participants, Users, Trading Sites, Units and Meters.
- Trading – the mechanism for submitting, revising and querying Default Offers and Normal Offers.
- Event Manager – schedules programs and events, so much of the SEM operation is automated.
- Report Manager – generates reports for Participants, SEMO, TSOs and IAs.
- Market Operator Interface – the interface used by SEMO to monitor, control and run the SEM.
- Interface to Other Systems – interfaces between CMS and with some External Data Providers.

Scheduling and Pricing (MA)

The Market Application (MA) system (which includes the MSP Software) performs the following key functions:

- Calculation of Market Schedule Quantities for Ex Ante, Indicative Ex Post and Initial Ex Post Market Schedules.
- Calculation of System Marginal Prices for Ex Ante, Indicative Ex Post and Initial Ex Post Runs.
- Calculation of Dispatch Quantities (using the Instruction Profiling module) for Ex Post Runs.

MIUN Calculator (MIUN)

Following the calculation of Interconnector Unit Nominations (IUNs), the MIUN Calculator is used to provide the required data to relevant systems, notably the Market Infrastructure System (MI) and the Auction Management Platform (AMP):

- Modified Interconnector Unit Nominations (MIUNs), the energy allocations to Interconnector Units; and
- The Interconnector Dispatch Schedule (DIs), the dispatch profile for the Interconnector as a whole.

The MIUN Calculator includes additional rules/constraints to those contained within the MSP Software, to ensure that the dispatch profile is feasible at all points. The additional constraints include application of the relevant Interconnector Ramp Rate, treatment of Deadbands (where such restrictions apply) and provision for instances of Interconnector trips.

Settlement System

The CMS Settlements System calculates the amounts payable by or to be paid to Participants, in accordance with the provisions of the Code. In particular, this includes:

- Calculation of all payments and charges on a weekly (Billing Period) basis for Energy Settlement or monthly (Capacity Period) basis for Capacity Settlement.
- Management and reconciliation of currency costs incurred in the SEM for all payments and charges.
- Preparation of Invoice data for use in the Invoicing System.

Invoicing System

The Invoicing System manages the production of Invoices, which provide a summary of the amounts payable by or to Participants (including correct jurisdictional treatment of VAT and currency) for the relevant Billing Period or Capacity Period.

Metering System

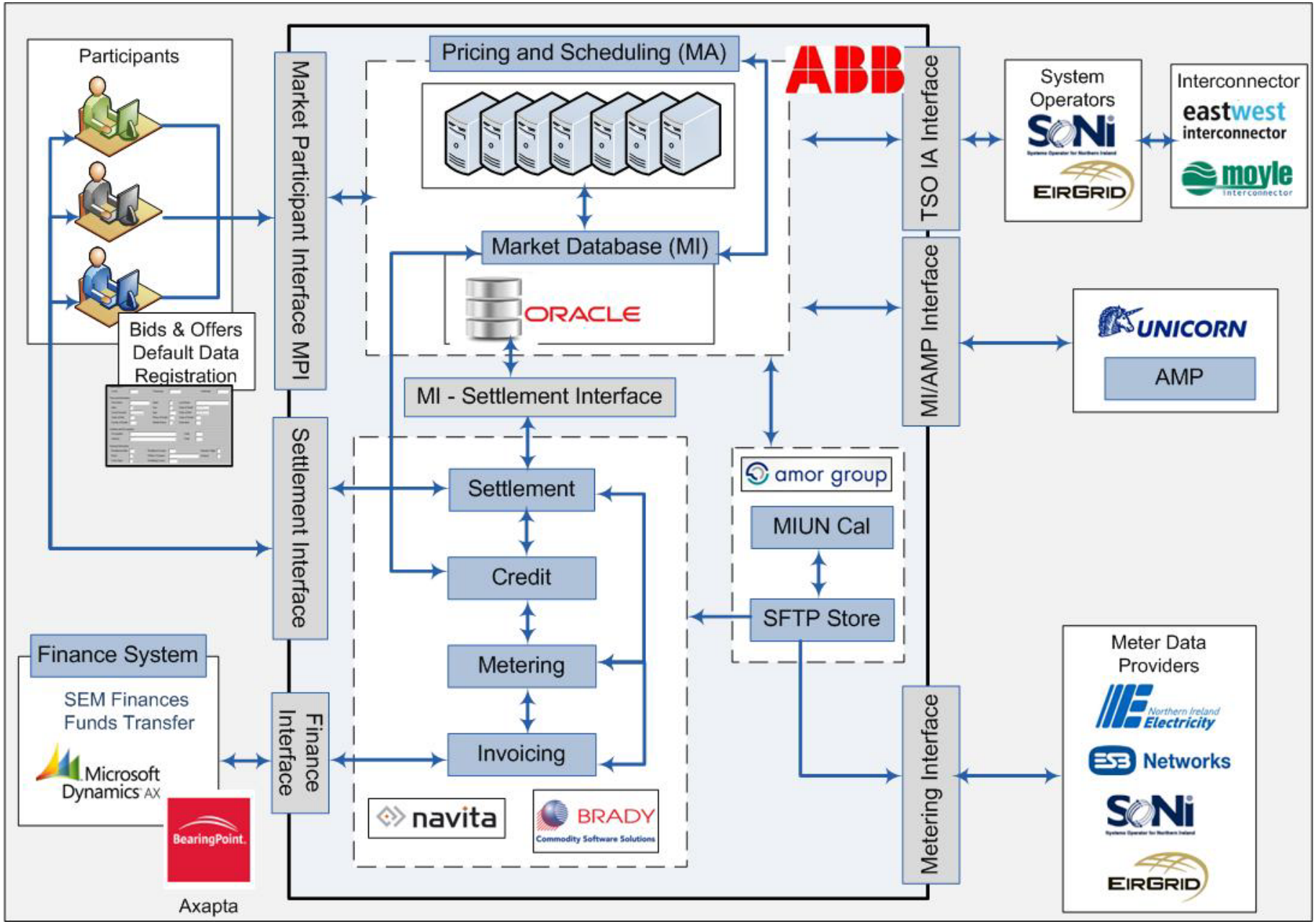
The Metering System manages the receipt of meter reading data from Meter Data Providers (MDPs); logs receipt of data; and transfers meter data to the Settlement, MI or MA systems for use in further processes.

Credit Risk Management System

The Credit Risk Management (CRM) system manages Participant credit risk by evaluating their outstanding liability and a forecast of expected liability in the near future (this data is transferred from the Settlement System or Finance System). The calculated liability is matched with the total collateral posted by the Participant.

Finance System

The Finance System manages and monitors payments of Invoices and debtor information with respect to Participant liabilities within the SEM.


Participants
Bids & Offers
Default Data
Registration
Market Participant Interface MPI
Pricing and Scheduling (MA)
Market Database (MI)
ORACLE
MI - Settlement Interface
Settlement Interface
Settlement
Credit
Metering
Invoicing
navita
BRADY
Commodity Software Solutions
Finance System
SEM Finances
Funds Transfer
Microsoft Dynamics AX
BearingPoint.
Axapta
Finance Interface
ABB
TSO IA Interface
MI/AMP Interface
Metering Interface
System Operators
SONI
EIRGRID
Interconnector
eastwest interconnector
moyle Interconnector
UNICORN
AMP
amor group
MIUN Cal
SFTP Store
Meter Data Providers
Northern Ireland Electricity
ESB Networks
SONI
EIRGRID

Section 2 - Progress since MSDP4

The MSDP 4 (2011-2013) described the work plan for SEMO in terms of its market development (along with associated systems development) activities. In particular, the MSDP 4 covered the very substantial Intraday Trading release.

Intraday Trading

SEM R2.0.0 was deployed successfully on July 20th, 2012. This was a significant release impacting all stakeholder s resulting in the successful implementation of Intra-Day Trading arrangements in the SEM. As well as implementing a complete technical refresh of CMS infrastructure, in excess of 36,000 hours of functional vendor effort were consumed to deliver the required changes.

Several workstreams were established to ensure the new IDT capability was as per requirements and was successfully embedded across the industry. A comprehensive communications framework was defined and established to ensure programme delivery was aligned across the industry thereby ensuring a successful and timely implementation.

The scope of the SEM R2.0.0 release was as follows:

CR or MOD ID	Change Request/Modification Description
Mod_18_10	Intra-Day Trading
Mod_43_10	Variable Price Taker Generator Units and Firm Access
SEM_PC_CR244	SO Security (Option 1)
SEM_PC_CR284	Data to be Utilised when MSP Software Run Cancellation Occurs
SEM_PC_CR287	Breach Amount in Credit Risk Report
SEM_PC_CR296	Insert HLQ Point

Table 1 Release SEM R2.0.0 scope

The IDT Project delivered successfully its aims and objectives by:

- Implementing the agreed project scope in full and to quality;
- Enabling smooth transition to the new market arrangements;
- Meeting the target implementation timescale of 20th of July 2012;
- Delivering under budget; and
- Decommissioning successfully the project on completion.

November 2012 Release

The SEM R2.1.0 release to the CMS was successfully deployed on November 16th, 2012. This release delivered seven approved Modification Proposals and six approved SEM Design Service (SDS) sourced Change Requests to the SEM. The approved scope for this release was as follows:

CR or MOD ID	Change Request/Modification Description
Mod_42_10	Single Ramp Rate
Mod_01_11	Changes to UNIMP for over generation
Mod_06_11	SRA Cancellation through the MPI
Mod_10_11	Interconnector Under Test – Core Settlement Requirements only
Mod_12_11	Interconnector Losses
Mod_40_10	*Dwell Times While Ramping*
Mod_21_11	UI Payments for ELUs Constrained On
SEM_PC_CR267	Wind and Load Forecast Data
SEM_PC_CR266	Change of Effective Date in the MPI
SEM_PC_CR207	Automation of FMOC Calculation
SEM_PC_CR286	Publication of Zero IUNs when no PQ Pairs available
SEM_PC_CR261	Removal of Orphan Trading Site Settlement Points
SEM_PC_CR260	Additional MI-AMP Feed

Table 2 Release SEM R2.1.0 scope

May 2013 Release

The SEM R2.2.0 release is on target for deployment on Friday May 10th, 2013. This release will deliver three approved Modification Proposals and four approved SEM Design Service (SDS) sourced Change Requests to the SEM. The approved scope for this release is as follows:

CR or MOD ID	Change Request/Modification Description
Mod_17_11	Addition of a D+3 DI report
Mod_03_12	Alignment of TSC with revised VAT arrangements
Mod_17_12	Interconnector Offered Capacity Publication
SEM_PC_CR193	TLAF Publishing in the MPI
SEM_PC_CR262	Unit Under Test Submission screen
SEM_PC_CR289	Internal Submission Gates
SEM_PC_CR295	MA System Summary Interconnector Flow

Table 4 Release SEM R2.2.0 scope

Modifications Summary

The table below gives a breakdown of modifications that SEMO have worked on since MSDP4; 1st October 2011 to 30th September 2012. Appendix 1 lists all of these modifications along with a high level description of each Modification.

Modification Status	Number
Implemented	40
Approved not Implemented	10
In Progress	10
Rejected	4
Total	64

Table 3 Modification progress since MSDP3

Section 3 - Forthcoming Market Releases

For each of the planned releases to date, SEMO has communicated with the industry regarding the scope and likely impact. This has included providing detailed information on each release to allow Market Participants to design, plan and implement any changes necessary to their systems. The following two sections provide a brief overview of the May 2013 and October 2013 system releases.

October 2013 Release

The release cut-off date for the October 2013 release to the Central Market Systems was Friday February 22nd, 2013. At the cut-off date, there were no approved Modification Proposals requiring changes to the Central Market Systems.

Eight new Change Requests were received for consideration at the Change Control Forum (CCF). SEMO assessed the system impacts of these Change Requests and held a CCF meeting for industry stakeholders (March 21st) for the discussion and prioritisation of Change Requests for inclusion in the SEM R2.3.0 release. Subsequent to this CCF meeting a release proposal document will be issued to the Regulatory Authorities seeking final approval for the proposed release scope. On receipt of Regulatory approval, SEMO will publish the approved release scope to the industry.

Section 4 - Forward Work Programme

Introduction

Changes to electricity market provisions in the SEM will emerge in response to legislative requirements and policy considerations. Currently there are a number of such initiatives that potentially represent changes to the current market arrangements. Whilst these are often longer-term initiatives, where policy or legislation dictates change to the SEM market and its supporting systems, early engagement and interaction is vital. This will ensure that SEMO meets its obligations to comply with all relevant statutory requirements and remains responsive to the current and future needs of the electricity market across the island of Ireland and with neighbouring markets to which we are interconnected.

This Forward Work Programme section identifies a number of initiatives that are not fully established and it is appropriate to highlight these areas of potential work and their potential impacts. The initiatives described in this section are not a definitive list but rather our belief in what is likely to be addressed based upon the future work programmes of the Regulatory Authorities and industry developments within the three year period, 2013 to 2016.

Key to the understanding of this programme is the influence of European legislation through the CACM Guidelines and the subsequent demands for Market Integration for Ireland in 2016. This subject is currently under consideration by the respective Departments of Northern Ireland and Ireland and the Regulatory Authorities However the effect of the Market Integration Project has to be taken into account in relation to the current market arrangements and the future operational life and need to keep a fully functional market up to 2016 and or beyond if required.

Policy and Development Initiatives

The Forward Work Programme included within this Price Control Submission outlines a number of forthcoming policy and development initiatives which have the potential affect SEMO. While these projects may be further along the horizon than can be adequately detailed herein, it is important that the longer term direction of the Market be included when considering SEMO's undertakings. There is likely to be significant impact on the Market Rules and/or the Central Market Systems as a result of any such changes/ developments. Key European and Regulatory initiatives are included within this section as they influence /affect the current and future market arrangements.

In the next number of years, a number of significant market changes will be developed and implemented in the SEM. Many of these changes are policy-led and are detailed in the respective forward work programmes of the government departments and Regulatory Authorities. These activities relate to some of the most complex and multi-faceted aspects of SEM, supported by highly detailed rules and complex systems. SEMO will need to undertake significant analysis to determine the most suitable and cost effective way of supporting development in these areas.

In addition to changes resulting from broad policy direction SEMO continues to be involved in many issues and proposed changes raised through the Modifications Committee. Indeed, SEMO is also continually working to identify ways in which the Central Market Systems (CMS) could be developed in future to deliver more efficient, transparent, accurate and timely services to the SEM as a whole. As such SEMO will ensure that the current market arrangements continue to function efficiently up to the implementation of Market Integration changes in 2016 and beyond if required to do so.

With this set of circumstances it is recognised that changes will still need to be addressed within the expected lifetime of the SEM. Changes that are currently under consideration include:

- Changes that may be necessitated by the final decision on Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code (SEM-11-062);
- Changes due to REMIT legislation;
- A potential change to VAT treatment for Suppliers in the SEM and
- Changes to DSU operation in the SEM;
- New rules to accommodate new unit types, for example Compressed Air Energy Storage
- Wind Curtailment and tie break scenarios

In addition, as had been the case during the last five years of operation of the SEM other changes may be proposed to increase the efficiency of the SEM.

Market Integration

European electricity market integration represents the next major development of the trading arrangements on the island of Ireland. Since 2007, the SEM has provided a stable and transparent platform for the wholesale trade of electricity in Ireland and Northern Ireland. Beyond 2014 (2016 for the SEM), EU member states have agreed to implement the 'target model' of day ahead price coupling and continuous intraday trading. This will also include provisions for forward trading and balancing. Implementing the target model will contribute to enhanced cross-border trade and competition on the island of Ireland and will introduce a greater level of flexibility to the trading arrangements to compliment increasing amounts of variable renewable generation.

EU Market Integration and SEM Market Integration Project

The Association for the Cooperation of Energy Regulators (ACER), published the Framework Guidelines on Capacity Allocation and Congestion Management (FG CACM). This is a significant milestone in the development of the Internal Energy Market (IEM). It will require SEM to harmonise its arrangements for allocation of cross border capacity with all other EU regional markets. The ultimate aim of this process is market coupling and the establishment, where there is no congestion, of a single wholesale price for electricity at the day ahead stage.

Following consultation on the implementation of the European Target Model in the Single Electricity Market which took place from November to December 2012, the SEM Committee have requested the SEM RAs to initiate a project to deliver on the obligations posed by the European Target Model for Cross Border Trading by 2016.

Future SEM Developments

Modifications Developments

In the midst of all this change, we would like to emphasise our continuing focus and commitment to the on-going stable and transparent operation of the SEM. This is important to attract continued investment which will be needed to help manage and ensure security of supply and meet our renewables targets. Whilst the SEM will need to undergo significant change as part of Market Integration, this will be unlikely to take place before 2016 which means that the current market arrangements will continue for the next four years. To put this in context, the SEM has been in existence since 2007 to 2012 marks an approximate half way point between 2007 and 2016. While we would not expect the same amount of change between 2013 and 2016 and recognising that any major changes will probably need to be considered as part of Market Integration, it is reasonable to expect that aspects of the SEM can and will be improved upon over this period.

Figure 1 shows how the SEM has matured in recent years with the number of Trading and Settlement Code changes decreasing each year. The initial phase has been characterised by a lot of minor changes. This is due to the discovery of inconsistencies between the Market and the SEM. While there are generally fewer modifications in recent times, the changes now being proposed are more complex and require fare more analysis and participant engagement.

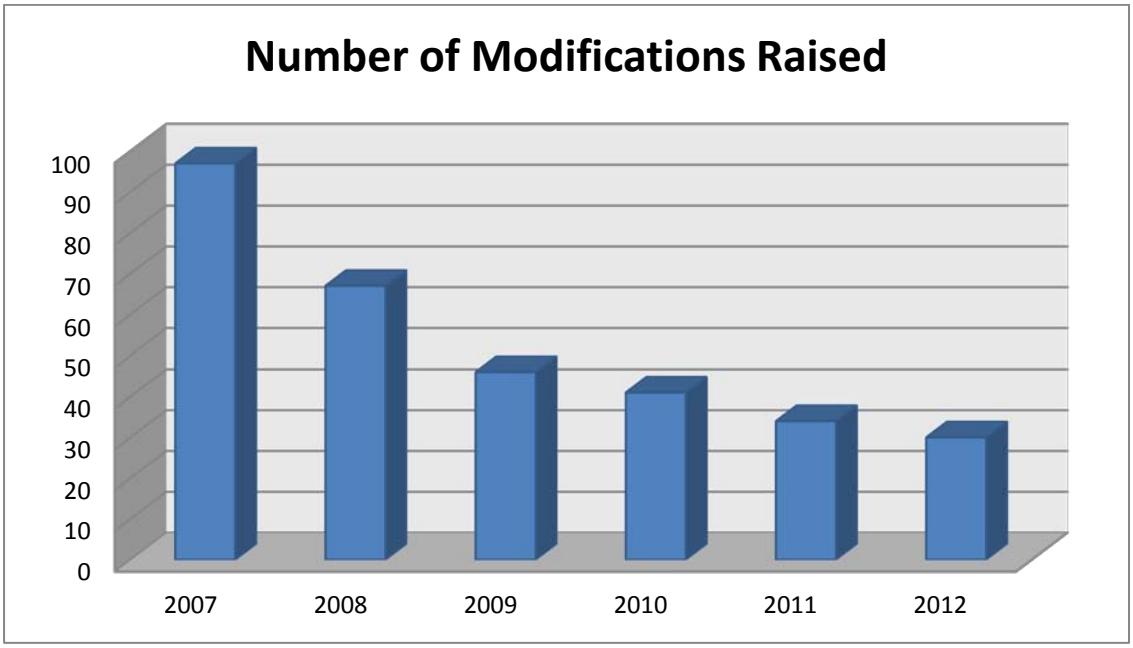


Figure 1 - Total number of Modification Proposals per year

UK Electricity Market Reform

Electricity Market Reform (EMR) measures in the UK have significant impacts for the SEM over the next three years. Out of the four main strands, Carbon Price Floor (CPF), Feed in Tariffs (FIT) plus Contracts for Difference (CFD), Capacity Mechanism and an Emissions Performance Standard, the CPF and the FIT pose the greatest impacts to the SEM due to these measures being implemented across the UK, including NI.

To date analysis by SEMO on the CPF indicated that generators in the SEM in Northern Ireland would be considerably disadvantaged over generators in Ireland. At time of writing NI has been granted a derogation from the CPF subject to agreement on state aid rules from the European Commission (EC). Notwithstanding this derogation, it is important the impacts of CPF on imports and exports to and from the SEM are understood as we continue to analyse the price differentials between the two markets as a result of CPF in GB.

Demand Side Participation

The SEM has always had an objective to facilitate Demand Side Participation; however, until 2012 there had been limited activity in this area. Following the decision on Demand Side Vision for 2020 by the SEM Committee in May 2011, a number of actions were set out which have led to changes to the current arrangements in the SEM and the associated systems. These actions include:

- The SEM Committee will ensure that consideration is given in any modification to the Trading and Settlement Code to introduce firm day ahead pricing in the SEM allowing the support of demand side participation. Demand side participation in the market will be integrated as a key driver into the market.

(This consideration is also relevant to aligning SEM with the Target Model for day ahead price coupling. Changes to deliver a day ahead price may be captured as part of this work on Market Integration).

- The SEM Committee will write to the T&SC Modifications Committee and Grid Code Committee Chairs asking them to consider any barriers facing distributed generators and/or other measures to facilitate participation from distributed generation. The T&SC Modifications Committee and Grid Code Committee will be required to report back to the SEM Committee.

Throughout 2012 SEMO engaged with prospective Demand Side Units and Aggregated Generator Units with a view to facilitating their entrance into the SEM. Two new Demand Side Units registered in SEM in 2012 as a result of Modifications to the Trading and Settlement Code rules governing Demand Side Units which facilitated their entry into the SEM. Working with the TSO, SEMO has provided and will continue to provide the necessary market expertise to support any appropriate changes to SEM that remove barriers to entry and greater participation of Demand Side and Aggregated Generation in the SEM. During 2013 it is likely that other aspects of the rules governing DSUs in the SEM will be examined, specifically around the area of placing DSUs under test. With the phasing out of non-market demand side schemes such as the Winter Peak Demand Reduction Scheme (WPDRS), the participation of DSUs in the SEM will become increasingly important. The development of a method of monitoring the performance of DSUs within the SEM similar to that used in Demand Side Management schemes that are being phased out will also be an area of focus.

Energy Storage

SEMO is engaged with current and potential future Market Participants regarding enhancements to current rules for Pumped Storage and possible additional rules for other types of storage e.g. Compressed Air Energy Storage (CAES). When the SEM was designed the Market Rules were based on the existing storage facility at Turlough Hill. However there are now other potential storage developments under consideration. A Modification (Mod_11_12) has been raised to the Trading and Settlement Code to modify the existing rules to provide for Compressed Air Energy Storage plant. Options for this are currently being assessed. SEMO will continue to work with the relevant organisations to ensure that SEM facilitates additional proposed storage options.

Regulation on Energy Market Integrity and Transparency (REMIT)

SEMO is currently considering in consultation with the Regulatory Authorities the implications of REMIT and how it may impact on the operation of the SEM. Much of the information required to meet the REMIT obligations is already published by SEMO and SEMO could build on the existing levels of transparency in the SEM in an effort to assist the market in meeting its obligations. The implementation of a reporting system could require systems changes, be they in the Central Market Systems or associated coporate systems (e.g. SEMO website).

REMIT details

Regulation 1227/2011 came into effect on 28th December 2011. This regulation for the wholesale energy markets prohibits insider trading and requires publication of additional information. The regulation prohibits market manipulation, requires detailed reporting of energy transactions and the registration of energy market participants. ACER has monitoring and coordination roles but the National Regulatory Authorities won't have investigative or enforcement powers until mid-2013. The REMIT scope for Wholesale Energy products is as follows:

- Contracts (including intra-group) for supply of electricity/natural gas for delivery in EU
- Derivatives relating to electricity/natural gas traded or delivered in EU
- Contracts relating to the transportation of electricity/natural gas in the EU
- May also apply to capacity mechanisms
- Derivatives relating to the transportation of electricity/natural gas in the EU
- Prohibitions do not apply to derivatives traded on exchanges (remain covered by MAD); disclosure requirements do apply
- Does not apply to emission trading – in future will fall within MAR

Section 5 - SEMO Capital Program Update

The section provides an update of the seventeen business cases which address the likes of IT infrastructure requirements, the need for additional operational support systems, reporting requirements, data storage, system monitoring tools etc. The progress of each business case can be viewed in table below. Detail as to the progress of each capital project is provided in the Appendix 2.

No	Predictable Capex Item	Note/Benefit	Delivery Date
1	Hardware Upgrade	Three year Delivery timeline.	**Completed**
2	System Monitoring Reporting	This proactive system will help significantly reduce the time it takes to find and clear system faults.	**Design Phase** - December 2011. **DELIVERED** **Implementation** - In Progress. **Go live date** Quarter 2 2013.
3	Systems Management	This system will help facilitate Patch Management, Code Releases, centralised software server updates and will help the more efficient utilisation of IT infrastructure resources.	**Design** – In Progress **Implementation** – Quarter 2 2013 **Go live date** - Quarter 2 2013
4	Virtualisation	This project virtualises all of the SEMO non production environments. Phase 2 will deliver the virtualisation of SEMO's Corporate systems but excluding the Central Market Systems.	**Phase 1 Virtualisation of non production environments DELIVERED** **Phase 2 Virtualisation of Corporate systems** is due Quarter 2 2013
5	Oracle Logging	Auditor recommendation for security logging.	**Design Phase** - Quarter 1 2012 **DELIVERED** **Delivery date** - July 2012. **DELIVERED**
6	SharePoint and Document Management	Facilitates the storage, organisation and sharing of documents within SEMO	**Phase 1** - Storage of Processes, Work Procedures and Checklist templates, Compliance Register – **DELIVERED** **Phase 2** – Migration of SEMO users from file stores to SharePoint – Q3 2013
7	Data Storage	Relieves data storage problems and reduces costs.	**Phase 1** – Settlements Database partitioning - November 2011 – **DELIVERED** **Phase 2** - Settlements Database Archiving – February 2012 - **DELIVERED** **Phase 3** – Consolidation and policy refresh of backup procedures - Q2 2013 **Phase 4** - Data De-Duplication – Q2 2013 **Phase 5** – MI Database partitioning and archiving – Q3 2013
8	Data Warehouse	This will provide SEMO with enhanced capacity for carrying out detailed market analysis.	**Phase 1** - Infrastructure implementation – **DELIVERED** **Phase 2** - Requirements & Design for BI tools - In progress **Phase 3** – Implementation – Q3 2013

9	Reporting Database Upgrade	This is now a business critical system which requires additional system support.	**Delivery date** - July 2012 - **DELIVERED**
10	Oracle Database Server Version 2	The database is struggling to maintain acceptable performance and requires significant maintenance.	**Phase 1** - New File system, change of OS & upgrade to 11G - July 2012 - **DELIVERED** **Phase 2** - Upgrading to new high performance hardware - July 2012 – **DELIVERED**
11	New Communications Links	Key infrastructure components providing fully redundant, consistently available high performance links	**Delayed until further notice due to insufficient need at this moment (March 2013)**
12	CMS Pre Production Environment (IPT)	Environments for investigating, testing and diagnosing issues in a timely and efficient manner.	Implementation of CMS Pre Production Environments - January 2012 – **DELIVERED**
13	Axapta Upgrade	This system is used for reconciling bank accounts, processing cash receipts, maintaining market ledgers, managing collateral and bad debt and managing market currency exposure.	**DELIVERED** May 2011.
14	On-Line Help System	This system will allow external stakeholders to submit and track any new or existing queries directly through a SEMO portal.	**Requirements** - December 2011 - **DELIVERED** **Design** - May 2012 – **DELIVERED** **Implementation** - December 2012 - **DELIVERED**
15	Electronic FAX Solution	Audit recommendation. The current manual processes for fax communications has the potential for error or omission, may not be timely enough, is difficult to co-ordinate across dual site operations, is open to security breaches, and does not provide auditable permanent records of incoming or outgoing communications.	**DELIVERED** - July 2012.
16	On-Line Registration System	The online registration system should decrease the workload for new participants entering the SEM and make the registration process less daunting and more transparent.	**Requirements** – Q4 2012 – **DELIVERED** **Design** – Currently out to tender – Q2 2013 **Implementation** – Q3 2013
17	Training Environment (Internal)	It is essential that additional Market Application environments are made available to allow SEMO to optimally train staff and thus reduce the potential of operational issues in the live systems.	**DELIVERED** - July 2012

Table 5 – High level summary of the 17 Capital Projects

Appendix 2 provides greater detail about the capital projects and their associated delivery dates.

Appendix 1 Modifications

Modification proposal status from 01 October 2011 to 30 September 2012.

1. Implemented
2. Approved and not Implemented
3. In Progress
4. Rejected

Implemented Modifications

Mod ID	Modification Title	Description
MOD_18_12	Constraint Payments Calculation for Interconnector Residual Capacity Units	The proposal, raised by the TSO proposes a change to the IRCU calculation to align the application of CLAF with the changes approved in Mod_12_11 *Interconnector Unit Loss Adjustment When Exporting*. It also simplifies the SO Trade Calculation algorithm.
MOD_14_12	Reference to MO Status for VTOD	The proposal seeks to ensure that all steps which must take place in order for a submitted Validation Data Set to be approved in the SEM systems are documented in the Trading and Settlement Code, and the responsibilities of the relevant parties outlined.
MOD_13_12	Housekeeping 5	The Modification Proposal corrects minor drafting, formatting and typographical errors of various sections of the T&SC and APs.
MOD_09_12	Treatment of Settlement Reruns of EP1 following MSP Failure	As part of the preparations for Intraday Trading, a review of Administered Settlement highlighted the need for a Code modification to clarify the requirements for Settlement Reruns after an Administered Settlement event. The proposal seeks to update section 6.255 to clearly state that Settlement Reruns are only required for MSP Failures for EP2.
MOD_08_12	Calculation of Modified Interconnector Unit Nominations (MIUNs) for SEM Intra-Day Trading	The proposal arose following the implementation of the Intraday Trading Modification; it clarifies that the MIUNs as calculated following the relevant MSP Software Run will be fixed in subsequent MIUN calculations where possible. It also corrects the explanation of when Interconnector Units are considered to be ramping up or down. (This is currently incorrect in its description of the existing process.). The proposal introduces Original MIUNs and Original IUNs as defined terms in Agreed Procedure 2, Appendix 2. These terms will enable fixing and make clear which version of the IUNs/MIUNs are used as inputs to the relevant MIUN Calculator run.
MOD_07_12	Testing Charge Calculation for the Interconnector Error Unit when Under Test	The proposal allows for a testing tariff to apply to any Interconnector Error Unit when Under Test for both importing and exporting. It also facilitates the decision to allow the classification of the Interconnector Error Unit as Under Test, as approved under Mod 10_11 *Interconnector Under Test*. The application of the Testing Tariff to the absolute value of the metered generation for the Interconnector Error Unit when Under Test is being progressed as part of the implementation of Mod 10_11 and the modification clarifies the application of the Testing Tariff in the T&SC.
MOD_05_12	Cross Border Settlement Reallocation Calculations	The proposal, raised by the MO provides clarification of what is currently in practice in relation to the appropriate exchange rates applied to cross border settlement reallocations as part of Settlement calculations and Credit Risk Cover calculations
MOD_04_12	Corporate Website Publication Times for Capacity Settlement Data	The proposal applies the same timelines to Data Publication relating to Capacity Settlement as those applied to Energy Settlement Data Publication.
MOD_02_12	Amendment of Credit Cover requirements	Flexibility for Market Participants is introduced with this Modification Proposal as it satisfies Participants credit cover obligations and takes account of the tighter access to such products in today's banking market.
MOD_01_12	Representation of Demand Side Units on the Modification Committee	The proposal was raised by Activation Energy in order to introduce one seat for DSUs on the Modifications Committee.
MOD_02_11	DLAF application for Supplier Units	The System Operators raised a number of issues (with the Regulatory Authorities and SEMO) in the past in respect of the

		provisions of the Code (including clause 4.40) in relation to the current application of Distribution Loss Adjustment Factors (DLAFs). As a result, the System Operators raised an Urgent Modification (43_08) which came into effect on 1st November 2008. As a result of this modification, wording was mistakenly removed from clause 4.40 although the affected parties continued to apply the required DLAF correctly. Therefore the change reinserts 'or Supplier Unit' into this clause.
MOD_03_11	Housekeeping 3	The Modification sets out various corrections to numbering and formatting of various sections of the T&SC.
MOD_04_11	Removal of requirement that a demand site in a DSU shall not have an MEC	Removal of this unnecessary restriction facilitates the participation of sites with MEC < 10MW as Demand Side Units. This will make the load reduction capacity and excess generation capacity of such large energy users available to System Operator. Sites with MEC <10MW typically have embedded CHP generation where the ratio between the site heat load and site electrical load is such that it is economical to export electricity. These are demand sites where demand can become negative in periods of large site heat requirements. Participation of these sites as part of an aggregated DSU, as opposed to an AGU is more practical as it facilitates netting generator output against site demand and also results in declaration of available reduction capacity as opposed to total generation capacity.
MOD_05_11	Extension to Role of the Modifications Committee via Working Groups	Three years of operational experience of the SEM Modifications process and specifically the operation of the process with the Intra-Day Modification Proposal, strongly indicates the need for an improved market change process. Some issues of significance to the SEM come from external sources (for example the Regional Market Initiative from Europe) or the ongoing evolution of the industry (such as Demand Side), which often stretch the boundaries currently mapped out for the Modification Committee. Issues that may eventually result in rules changes may initially start off as sketchy concepts with an individual or within an organisation. Such concepts would benefit from joint industry consideration to prove, improve or disprove prior to formalising market rules.
MOD_09_11	Drafting Errors in relation to the Generator Units shutting down	In the Trading Period prior to a Generator shutting down, the rules were initially set out so that it cannot be scheduled a level of Output greater than half the Single Ramp Down Rate. This is similar to the limit that a unit cannot come on to more than its Block Load plus half the Single Ramp Down Rate. This allows a unit to be off for Trading Period and back on in the next, taking half the off Trading Period to shutdown and the other half to start up. However, if a Generator Unit's Block Load plus half its Single Ramp Up Rate is less than its Min Stable Generation then an infeasibility would arise as the unit would be required to stay below its Min Stable Generation. Therefore, the max of the Min Stable Generation and half the Single Ramp Down Rate is used to avoid this as is set out in N.17.2 (f).
MOD_10_11	Interconnector Under Test	Testing Tariffs should apply to an Interconnector while undergoing testing for Commissioning, Grid Code Compliance or otherwise. It is recommended that the Interconnector Error Unit, which is registered to the Interconnector Administrator, as procured by the Interconnector Owner, is liable for the testing charges incurred while the Interconnector is under test.
MOD_13_11	Inclusion of Other Systems Charges in the Imperfections Charge	As part of the AS Harmonisation Project, the SEM Committee decision paper, "Harmonised All-Island Ancillary Services Rates and Other System Charges" (SEM-10-001) stated the following in relation to netting Other System Charges from Dispatch Balancing Costs (DBC) when calculating the Imperfections Charge: *"In the case of the other charges (i.e. Trips, SNDs and GPIs), the TUoS statement of charges will be used as a facilitating vehicle to impose and publish the charges annually. It is appropriate to net off these charges from the DBC. The DBC are partially incurred*

		by generators having poor performance and behaviour. They are recovered in the SEM through an imperfections tariff levied on suppliers by the Single Electricity Market Operator (SEMO), which in turn is regulated by the RAs. For the avoidance of doubt the non-AS charges reduce the imperfections tariff and not the DBC themselves." This Modification Proposal inserts the necessary terms into the TSC to allow for this netting process to occur.
MOD_15_11	Amendment to Deload Break Point Glossary Definition	This Modification Proposal provides clarification to the treatment of Deloading from Minimum Stable Generation to zero. The existing Glossary definition implies that a units first Deloading Rate (DLR1) occurs from Minimum Stable Generation to the Deload Break Point while the second Deloading Rate (DLR2) occurs from the Deload Break Point to zero. This modification proposes to correct the definition to reference that DLR2 reflects the rate of change from Minimum Stable Generation to the Deload Break Point while DLR1 in turn reflects the rate of change from Deload Break Point to zero.
Mod _20_11	Reversal of Mod_07_09: SEMO Cash Pooling	This Modification Proposal, seeks to remove the changes to the Code that were approved through Mod_07_09, SEMO Cash Pooling. Mod_07_09 was approved in 2009 relating to the setting up of 'mirror' deposit accounts in National Irish Bank for the Pounds sterling accounts held in Northern Bank. The Danish government bank guarantee scheme did not cover Northern Bank as a result of it being a subsidiary of Danske Bank (National Irish Bank is a branch and so was covered by the guarantee). In order to allow the cash held in Northern Bank to be covered, it was agreed to set up 'mirror' accounts in National Irish Bank. There were a number of legal and tax issues that came out of this that resulted in the deposit accounts never having been set up. The banking guarantee of the Danish government has since expired and this Modification Proposal seeks to remove the obligation from the Code to set up these accounts. Non-compliance with this section of the Code has been raised as an issue in both the market audit report for 2009 and 2010 and also in the Code compliance audit.
Mod_22_11	Housekeeping 4	A number of minor drafting errors of various sections of the Code are presented in this proposal.
Mod_23_11	Additional Clause for Standard Letter of Credit	This proposal, proposed by Airtricity, raised following advice from Lloyds proposes the addition of a clause to the conditions set out within the current version of the Standard Letter of Credit. The proposal ensures that future Letters of Credit comply with the current view of best banking practice.
Mod_25_11	Separate Residual Meter Volume Interval Proportions for each Jurisdiction	The modification, proposed by the RAs, seeks to allow for different values of Residual Meter Volume Interval Proportion (RMVIP) to be used in each Currency Zone. The changes proposed by Mod_09_09 (Global Settlement) were implemented in the Code on 7th October 2010, and the necessary software changes were implemented as part of the Spring 2011 software release (1.9). It has been identified that the change to the Central Market Systems allows for the possibility that different values of the Residual Meter Volume Interval Proportion (RMVIP) should apply in each Jurisdiction. Although such a facility was not proposed as part of Mod_09_09 and was therefore not implemented by the SEM Committee in the changes to the Code, the RAs take the view that it would be prudent to amend the Code so that this facility could be used were it to be identified that separate values for RMVIP in each Currency Zone (jurisdiction) would be desirable.

Mod_26_11	Process change for assessing Firm Access Quantity of Trading Site (FAQSst)	Certain registration data is validated by the System Operator as per Appendix H of the TSC prior to becoming effective in the market systems. One of these requirements is validation of the FAQst. The Firm Access Quantity of Trading Site (FAQSst) parameter will determine the level to which a generator unit can be scheduled in SEM. Currently the SO only has visibility of this at generating unit level as opposed to site level when validating the Generation Unit Data spreadsheet provided by SEMO. Were this Modification not to be implemented, the validation of FAQ at site level may be applied incorrectly in the MSP software. This parameter has a material impact on the outcome of pricing and scheduling in SEM and an incorrect value may lead to incorrect MSQs and SMPs in SEM.
Mod_27_11	Market Operator Solvers Policy	This proposal seeks to define the existing policy used by SEMO in relation MIP and LR as the 'Market Operator Solver Policy' and to make any changes to it subject to the approval of the SEM Committee. This ensures that there is a clear process for implementing any changes to the Market Operator Solver Policy and removes any discretion that may have existed in relation to the use of different solvers. Were this Modification Proposal not implemented, the existing method for changing and updating the Market Operator Solver Policy would remain.
Mod_28_11	Alignment of AP11 with Bi-Annual Release Strategy	This Modification Proposal, proposed by SEMO adds the word 'timetabled' to indicate that Scheduled Releases are planned well in advance, removes an obligation to carry out Scheduled Releases on a quarterly basis, allows for the current bi-annual release strategy or other Release timetables as may arise and replaces 'system modifications' with 'system changes' to avoid confusion with Modifications Process. If not implemented AP11 will not reflect the current release strategy that applies to the Central Market Systems
Mod_29_11	Revision of Standard Letter of Credit Template	This Modification Proposal replaces the current Standard Letter of Credit template with one that aligns with internationally recognised finance standards set out in Uniform Customs & Practice for Documentary Credits (UCP600). This is the international standard used for documentary credits or Letters of Credit. Included with the proposal is supporting guidelines for Participants and their banks, which would indicate all fields required to be filled out on their behalf. If this Modification Proposal is not approved, the current template will remain in a non-standard format that may not be accepted by banks or may increase the processing required to provide a Letter of Credit.
Mod_30_11	Assessment and Approval of Registration Data	This modification is required to clarify the Registration process and obligations for all parties involved. It aims to align Agreed Procedure 1: "Participant and Unit Registration and Deregistration" with the obligations that are already set out in the Trading and Settlement Code. The clarification was highlighted by an internal Eirgrid audit. On review considering the number of Distribution Connected Generator Units registering in the SEM it was considered appropriate for this Modification to also include the Distribution System Operators and the Distribution Codes. Thereby ensuring equal treatment of all Generators in the SEM regardless of their point of connection.
Mod_31_11	Calculation of Estimated Energy Price (EEP) and Estimated Capacity Price (ECP)	This Modification Proposal seeks to address an inconsistency in the calculation of EEP and ECP that exists between the Code and the CMS. The inconsistency was discovered during the development of Intra-Day Trading.
Mod_32_11	Excess Cash Collateral Drawdown Requirements	It is proposed to have a Standing Request for Participants to draw down from their excess cash collateral to pay outstanding

		invoices amounts. The Standing Request means that a Participant can request SEMO to draw down from their Excess Cash Collateral for Invoices due. It is also proposed that the Participants can use their Excess Cash Collateral to draw down for FMOC and Blended VAT Invoices, which they cannot do at the moment. As Excess Cash Collateral is used, it does not affect their Required Credit Cover.
Mod_33_11	Temporary exclusion of Interconnector Error Unit Testing Charges from Settlement calculations	Mod_10_11 Interconnector Under Test was approved by the Regulatory Authorities on July 21st 2011. It requires changes to the Central Market System. As the scope for 11th Scheduled Release SEM R2.0.0 (Deployment Date July 2012) is full, the earliest that this change could be incorporated in the CMS is October 2012, after the commissioning phase of EWIC which is scheduled for June/July 2012. The MO undertook the investigation of a time-limited manual workaround to implement Mod_10_11 so that Testing Tariffs could be applied to EWIC during its commissioning phase. However, a possible manual workaround is complicated by the fact that Testing Charges are included in the Total Payments made for a Generator unit in a Settlement Day i.e. DAYPUud, which in turn feeds through into a number of other calculations including Invoice Energy Payments (6.124), Billing Period Currency Charge (6.136 & 6.136A), Balancing Cost (6.141), Unsecured Bad Debt Energy Charge (6.153) and Actual Generator Exposure (6.187). While it is feasible to implement the inclusion of the testing charges manually in the Invoice Energy Payments (6.124) and the Balancing Cost (6.141) for a limited period, it is not feasible to implement a manual workaround adjusting the calculations in relation to Billing Period Currency Charge, Unsecured Bad Debt Energy Charge and Actual Generator Exposure. The proposed change temporarily removes the Testing Charges associated with Interconnector Error Units from the Total Payments to Generator Unit calculation (DAYPUud). The Testing Charges are then added back in to the Invoice Energy Payments (6.124) and the Balancing Cost (6.141) calculations. This is to ensure that the obligation remains for the Interconnector Administrator to pay Testing Charges for the Interconnector Under Test. The Testing Charges are excluded from the Billing Period Currency Charge (6.136 & 6.136A), Unsecured Bad Debt Energy Charge (6.153) and the Actual Generator Exposure (6.187) calculations. The temporary provisions extend until the date of the 12th Scheduled Release Deployment Date i.e. the Oct 2012 release when Mod_10_11 is scheduled to be implemented.
Mod_34_11	Transition to SEM Intra-Day Trading	The transitional provisions set out in the Modification Proposal enabled a smooth transition to the enduring SEM Intra-Day Trading provisions in the Trading and Settlement Code. The transitional provisions comprised of activities required by the Market Operator which were performed prior to and at the start of the IDT Start Date.
MOD_41_10	Validation of Firm Access Quantity of Trading Site (FAQSst) by the	The Firm Access Quantity of Trading Site (FAQSst) parameter will determine the level to which a generator unit can be scheduled

	System Operator	in SEM. As such, this parameter has a material impact on the outcome of pricing and scheduling in SEM and an incorrect value may lead to incorrect MSQs and SMPs in SEM. As the System Operator is responsible for all Connection Agreements to the Transmission System, it is appropriate for the System Operator to validate the Firm Access Quantity of Trading Site proposed for each Trading Site to ensure it reflects the Connection Agreement. EirGrid and SONI believe this modification can be implemented as a business process change.
MOD_33_10	Unit Under Test Process	This Modification Proposal sets out in AP4 a clear set of steps for and the timings involved in a Generator Unit being granted Under Test status. In addition, the Modification Proposal changes the deadline by which the Generator Unit must submit a Generator Unit Under Test Notice from five Working Days before the test to two Working Days before the test. It also provides clarity to all parties regarding their obligations and the timelines associated with those obligations.
MOD_36_10	Removal of connection between Supplier Units and DSUs	The harmonised provisions of the Ireland and Northern Ireland Grid Codes allow for an entity known as a Demand Side Units (DSUs) which are Demand Sites which offer demand reduction. The Trading and Settlement Code links these units to Supplier Units. This Modification Proposal should have minimal impact on central market systems, and consequentially should have negligible impact on the cost to consumers. Therefore, any improvement brought by competition will have immediate short-term gains for the consumers on the island of Ireland.
MOD_39_10	Change of ESU algebra from Section 7 to Section 4	To calculate the Error Supply Unit, there are two sets of algebra – the algebra set out in paragraph 7.12 has been in use since go-live. Currently Section 7.12 is in use; however it was intended that this interim measure would switch to the enduring algebra in Section 4.91 as this is the more efficient way of allocating losses on a jurisdictional basis.
MOD_28_10	Clarification of treatment of Netting Generator Units	Currently, the drafting in the Code with respect to the provision of Technical Offer Data for Netting Generator Units is ambiguous. This clause is cited within a section titled “Demand Side Units”, whereas this clause relates to all Netting Generator Units (including those on Trading Sites where Generator Units are registered). Furthermore, the use of does not make clear where Netting Generator Units should be classified as Autonomous Generator Units.
MOD_43_10	Variable Price Taker Generator Units and Firm Access	The Modification Proposal is believed to better facilitate Code Objective 4: “to promote competition in the single electricity wholesale market on the island of Ireland” by ensuring that Price Taker Generator Units are treated in the same way as Price Maker Generator Units when operating in their non-firm region. It is proposed that the requirement set out in the regulatory documents referred to in the Appendix can be met by the changes included in this Modification Proposal.
MOD_18_10	Intra-Day Trading	The Modification Proposal was designed to ensure that the SEM rules comply with the Congestion Management Guidelines set out in Regulation 714/2009 of the European Council and Parliament which require that: • ‘By 1 January 2008, mechanisms for the intra-day congestion management of interconnector capacity shall be established in a coordinated way and under secure operational conditions, in order to maximise opportunities for trade and to provide for cross border balancing (section 1.9) and, • ‘Successive intra-day allocations of available transmission capacity for day D shall take place on day D-1 and D, after the issuing of the indicated or actual day-ahead production schedules’. (section 4.3) and, • ‘the access rights for long and medium-term allocations shall be firm transmission capacity rights. They shall be subjected

		the use-it-or-lose-it or use-it-or-sell-it principles at the time of nomination' (section 2.5) The Modification was intended to meet the Trading and Settlement Code Objectives: • to facilitate the participation of electricity undertakings engaged in the generation…of electricity in the trading arrangements under the Single Electricity Market. By permitting generators in the SEM and GB market to access the SEM pool for the purpose of importing and exporting after the current single gate closure time of 10am, this Modification Proposal facilitates enhanced participation in the SEM • to promote competition in the single electricity wholesale market on the island of Ireland. The provision of Intra Day trading arrangements in the TSC should serve to increase competition in the SEM through greater access to prices in neighbouring markets and permitting registered interconnector users to respond to changing conditions such as wind forecasts, plant outages and demand expectations post gate closure. With the ultimate aim of ensuring that all interconnectors in the SEM are utilised in as efficiently as possible by allowing unused capacity to be reallocated to the market after gate closure, this modification promotes the interests of customers through creating a more liquid, competitive market and increasing security of supply. As intermittent generation increases in the SEM, efficient within day interconnector rules will be key to meeting this TSC Objective.
MOD_46_09	Treatment of UIs in Pumped Storage Units when Pumping	Turlough Hill (TH) is a 4 unit pump storage unit. When TH is in generating mode, it behaves in a similar manner to other generation plant. When TH is in pumping mode, its behaviour is very different to other generation plant. However, pumping mode is treated as negative generation and thus is subject to UI's. When TH is in pumping mode, the operator has only two possible options – either pump or don't pump. The MW used by TH to pump water up to the reservoir vary from start of pumping when the reservoir is emptier to the end of pumping when the reservoir is full. The exact MW used vary depending on head height and other physical factors and can vary by approximately 4/5MW for each unit from start to end of pumping. TH has no control over the MW used but is dispatched to pump at a certain MW which is impossible for the plant – hence TH is subject to UI's every time the units pump. In pumping mode, the blades on the turbines can only operate in one position (fully open), this is a physical limitation. No governor control is possible in pumping mode unlike when in generation mode.
MOD_12_09	Loss Adjustments in Constraint and Make Whole Payments	The modification is required in order to align the methodology that Generator Units use to recoup the cost of transmission losses associated with Offers for No-Load and Start-Up with that used to recoup transmission-loss costs reflected in Price-Quantity Pairs. The proposal is linked to the SEM Committee Direction SEM-08-179 which directs that the incremental cost of transmission losses must be reflected in Price-Quantity pairs, and that it is intended to direct this also should be the case for No-Load and Start-Up Costs once this Modification is implemented.

Approved Not yet Implemented

Mod ID	Modification Title	Description
Mod_17_12	Report on Offered Capacity in Implicit Auctions	The proposal seeks the introduction of a new report detailing the amount of Offered Capacity on each Interconnector in each direction in Implicit Auctions after each Gate Closure. The data is required under Transparency in the Congestion Management Guidelines (Regulation (EC) no. 714/2009 Annex I.5 Transparency).This is essential information for Interconnector Users in determining if and where trading opportunities are available in EA2 and WD1.
Mod_03_12	Alignment of the TSC with revised VAT arrangements	The proposal was put forward as a result of the inability of some Interconnector Units (Generators) to join the market because of the requirement in the current VAT Agreement to have a VAT number in the Jurisdiction of the unit. Where a company is established in a Jurisdiction other than that of where the Generator Unit is, that company is not entitled to a VAT number in the Unit Jurisdiction. The change is deemed necessary by the VAT Authorities in order to satisfy EU VAT legislation requirements where the Participant company is established outside the jurisdiction of the unit At the start of the market it was not anticipated that companies would register units in jurisdictions outside of where they were established and on that basis the existing VAT Agreement complied with VAT law and no issues arose until 2011.
Mod_21_11	UI Payments for Generator Units Constrained On	At present when an Energy Limited generator incurs an uninstructed imbalance for over generation, the payment received is based upon the minimum of SMP and Dispatch Offer Price. As Energy limited plant must have a DOP = €0, this means that there is no payment possible for over generation. Over generation occurs for two reasons as follows a. Over generation as a result of plant free governing and responding to system frequency. In this case the plant correctly generates above DQ but cannot get compensated. b. Over generation as a result of poor plant performance. In this case, the tolerance bands and the associated DOG provide adequate incentive to remain within the tolerance bands (as for all plant). Without this modification, energy limited generation units which correctly operate in the market and generate above DQ as a result of system frequency variations will not get remunerated which is discriminatory and perverse.
Mod_17_11	Clarifying the requirement to provide Dispatch Instruction for Generator Units	The proposal, proposed by Airtricity, states that there is no explicit restriction on the provision of Dispatch Instructions for Autonomous Generator Units, Interconnector Units or Interconnector Residual Capacity Units in the market rules. However for the reason that the Market Operator does not need the data for Instruction Profiling, as well as for the existing technical situation wherein if the Dispatch Instructions were issued to the Market Operator for those classes of Generator Units, the market systems would automatically procure

		Instruction Profiling for them, in practice Dispatch Instructions are not sent to the Market Operator. While we accept that Instruction Profiling does not need to be performed for those classes of Generator Units, it does not necessarily follow that the Dispatch Instructions relating to them should not be received by the Market Operator and published in the Central Market Systems as the relevant data for other classes of Generator Units are published. In essence, while the Market Operator may not need the data for its operations, Market Participants do need the data for their own purposes which include the monitoring of generation assets in relation to TSO dispatch actions. For these purposes the Market Operator would be functioning in its role as a central information clearing agent. If this modification is not approved, the faulty logic applied to the provision of Dispatch Instructions for certain classes of Generator Units by implicitly linking it to the Code obligation to not perform Instruction Profiling for those classes of Generator Units will be allowed to continue. This would be contrary to the Code Objectives regarding facilitation of participation of electricity undertakings (Objective 3), transparency (Objective 5) and ensuring no undue discrimination between persons who are parties to the Code (Objective 6).
Mod_16_11	Credit Worthiness Test for SEM Bank and Credit Cover Provider Banks	The proposal seeks a revision of debt rating for the SEM Bank and Provider Banks.
MOD_12_11	Interconnector Unit Loss Adjustment When Exporting	Currently, the Moyle Interconnector connects Scotland with Northern Ireland. In 2012, the EW Interconnector will connect Ireland with Wales. Each of these DC Interconnectors will incur losses associated with the transmission of electricity. Current Transmission Loss Adjustment factors (TLAF) for Interconnectors are based on the point of connection in SEM jurisdictions, plus an allowance for losses on the Interconnectors to the Connection Point (noting that DLAF for Interconnectors is equal to one). Within the current Code, adjustment for losses reflects the transfer of electricity between the Connection Point of a Unit and the Trading Boundary, where: • Connection Point: The point at which the Generator Unit or Supplier Unit is deemed to be connected within the SEM. • Trading Boundary: A notional balancing point for generation and supply and is the point of sale for trading in the SEM. This treatment when exporting is incorrect, as it does not reflect the fact that (assuming that the losses related to the Moyle are around 2%), This Modification proposes to adjust quantities for Interconnector Units (where required in accordance with the Code) when exporting by the reciprocal of the CLAF provided by the System Operator to the Market Operator.
MOD_06_11	Increasing Maximum Daily Submission Number and Automating Cancellation of Settlement Reallocation Agreements	<u>Increase on Daily Maximum Number of SRAs:</u> The coming online of the EWIC in 2012 will see either the registration of new units or an increase in the volume being registered by Interconnector units (depending on final implementation). Either way, the management of Credit Cover positions (as well as cash flows) using SRAs will necessitate an increase in the number of SRAs allowed to be lodged daily by Participants. <u>Automating Cancellation of SRAs:</u> The proposed design of Intra-Day Trading arrangements requires a more 'aggressive' treatment of Credit Cover requirements for Interconnector units. Given this development, in order not to frustrate potential trades, it will be necessary to improve the management

		of SRAs. Automating cancellation of SRAs allows Participants be more responsive under the proposed Credit Cover arrangements.
MOD_01_11	UI Payments for Generator Units	When a generator incurs an uninstructed imbalance for over generation, the payment received is based upon the minimum of SMP and Dispatch Offer Price. The penalty for Over Generation is excessive for plant which is constrained on as opposed to plant which is in merit. The proposal ensures that the penalty for Over Generation will not be excessive for plant which is constrained on when compared to plant that is in merit.
MOD_42_10	Changes to the Single Ramp Up Rate and the Single Ramp Down Rate Calculation	At present, the method used to calculate the Single Ramp Up and Down Rates in SEM results in values that fluctuate considerably from one Trading Day to the next and are not always a valid representation of the actual capabilities of the unit. Clearly this is not the intention of the T&SC, as it aims to set down rules that accurately model Generator technical characteristics. The modification aims to more accurately model reality and thus achieve a less volatile application of ramp limitations in the Market Schedule. With the proposed change, Ramp Rates will not be impacted by an artificially low Minimum Stable Generation when coming back from (or going into) an outage.
MOD_40_10	Differentiation between Dwell Times and Dwell Trigger Points while ramping up and ramping down	At present generators submit as part of their Technical Offer Data up to 5 Ramp Up Rates, 5 Ramp Down Rates, 4 Ramp Up Break Points, 4 Ramp Down Break Points, 3 Dwell Times and 3 Dwell Time Trigger Points. There is no differentiation between Dwell Times and Dwell Time Trigger Points for generators when ramping up or ramping down. This lack of differentiation between a Dwell Up Time/Dwell Down Time and Dwell Time Up Trigger Point /Dwell Time Down Trigger Point, limits the ability of the MSP software to accurately capture the behaviour of certain generators. With current practices, if certain units only need dwell times for ramping up, they are forced to have a very low ramp up rate to accommodate this. This has lead to the situation where a unit which would require two dwell times and two ramp rates would need six ramp rates to accommodate their performance. Also as the MSP software cannot accurately model generator units with these characteristics, it is limited in solving for the most economic System Marginal Price and Market Scheduled Quantities.

In Progress

Mod ID	Modification Title	Description
MOD_16_12	Inconsistent Technical Capabilities when Higher Operating Limit is zero and less than Lower Operating Limit	The proposal corrects in inconsistency between the Code and CMS systems. It proposes to document more fully the treatment of inconsistent higher and lower operating limits.
MOD_15_12	Inclusion of ATC limit slack variables and associated penalty cost parameters	The description of the treatment of slack variables and their associated penalty costs in the Central Market System is not fully transparent. This modification proposes to more accurately describe the implementation of Intra-Day Trading related constraints and to document them in the Code.
Mod_11_12	Proposal to extend the definition of Special Units to include Compressed Air Energy Storage	The proposal seeks to extend the definition of Special Units within the T&SC to include Compressed Air Energy Storage Units.
MOD_19_12	Correction to discrepancy in Required Credit Cover Query resolution timeline	Following implementation of Intra-Day Trading, a discrepancy in AP13 with regard to Query Generation was discovered. The proposal provides clarity around the timeline for resolution of Required Credit Cover Queries. The proposal amends Section 2.3.3 to specify that the MO shall upon receipt of a valid and complete RCC Query, use reasonable endeavours to investigate it within 90 minutes of the receipt of the RCC query, as opposed to the original text referring to 90 minutes upon issue of the RCC report.
Mod_20_12	Timelines in relation to the scheduling of Ad Hoc Resettlement following an upheld Query	In raising this Modification, SEMO is seeking to improve the approach taken in relation to the management of ad hoc resettlement as a result of upheld formal queries. In the event that ad hoc resettlement is required for a period greater than two Billing Periods for Energy or one billing month for Capacity, SEMO is looking to modify Agreed Procedure 13 to allow for an additional 10 Working Days for a suitable timeline for completion of such ad hoc resettlement.
Mod_21_12	Amendment to Available Transfer Capacity (ATC) definition	The proposal seeks to allow the TSO to instigate ATC reductions for system security reasons prior to the EA1 Gate Window Closure only. The TSO have advised the Modifications Committee that the solution proposed is a temporary one as it will lead to an error in the SEM and GB systems. A permanent solution is being worked on and will be brought forward in 2013
Mod_22_12	Administered Scheduling for General System Failure	This modification proposes to allow the MO to set MIUNs to zero in the case of a General Systems Failure. This is necessary to account for the situation where the Central Market System is unavailable, yet the Market Operator has an obligation to produce MIUNs for Interconnector trading day ahead and within day.
Mod_23_12	Minimum Stable Generation Correction	This modification further amends the Glossary definition of Minimum Stable Generation that was amended in Mod42_10v2 and clarifies how Minimum Stable Generation is calculated for each of the MSP Software Runs.

		It arose as the certification review has commented that, as the amended Glossary definition of Minimum Stable Generation references a Code paragraph that refers to an Ex-Post calculation, this introduces a lack of clarity as to how Minimum Stable Generation is defined for Ex-Ante.
MOD_06_12	Improved Efficiencies in LCF Process	This Modification Proposal seeks to streamline the process for acceptance and input of Offer Data in the CMS when submitted in the event of a Limited Communication Failure within one hour of Gate Closure for the relevant Offer Data.
Mod_18_11	Definition of 'Availability'	The proposal, proposed by Endesa Ireland states that the current definition of Availability leaves room for ambiguity in interpretation. This raises concerns around certainty and transparency. This Modification aims to align the Trading and Settlement Code definition of 'Availability' with the Grid Code definition, which deems a generator to be available where it is capable of delivering electricity to the Connection Point. If the proposal is not implemented, ambiguity with regard to the definition of Availability will continue to exist.

Rejected Modifications

Mod ID	Modification Title	Description
Mod_12_12	Mandating adherence to the BCOP by all Price Maker Generator Units	This Modification was raised following approval of Mod_36_10 where, due to different licence arrangements in each jurisdiction, it is not currently possible to register a DSU in NI. The proposal aimed to address this issue by including reference to adherence to the Bidding Code of Practice in the T&SC.
Mod_10_12	Amendment to Appendix P to ensure correct treatment of Interconnector Unit Offer Data	A scenario was identified during System Integration Testing of the Intra Day Trading (IDT) design which was not accounted for in Mod_18_10_V2 Intra-Day Trading and the associated Central Market System implementation. It arises where an Interconnector Unit submits a (P,Q) pair with a positive P, negative Q, where the Interconnector Unit offers to pay to export, but does not submit a (P,Q) pair when paid to import as part of its offer data. The alternative to implementing the proposal is that Participants are aware of this issue when bidding.
MOD_14_11	Pumped Storage Under Test	Pumped Storage units should be liable to Testing Charges. This modification proposes to further the TSC objective, in particular to ensure no undue discrimination between persons who are parties to the Code (Section 1.3.6).
MOD_65_08	Generator Unit Short Term Test Status	Under the current Code, a Generator Unit may only be designated as “Under Test” in advance and for an entire Trading Day. Applications to be considered as Under Test are set out in 5.168 to 5.171 of the Code, requiring that a proposed Under Test Start Date and Under Test End Date are submitted to the Market Operator (via the Central Market Systems) and validated by the appropriate System Operator. Such applications are required at least 5 Working Days prior to the start of the Under Test period. However, the System Operators believe that within-day testing is vital to ensure efficient and secure system operation. This is consistent with the Grid Code provisions and provides opportunity to identify potential issues early and to react accordingly. As a result of this, the System Operators believe that the market rules (Code) and Central Market Systems should be modified to allow short-term (within day) periods of Under Test status after the Participant deadline as set out in the Code. It is anticipated that this will more accurately reflect operational reality.

Appendix 2 Capital Program Update

The following tables provide greater detail about the capital projects and their associated delivery dates.

Capital Project 1	Hardware Upgrade

The Central Market systems consist of multiple hardware components and are essential to the running of the All Island Electricity Market. These hardware components are based in two server rooms (Dublin and Belfast) and consist of the following major components: servers (200+), Storage Area Networks, Tape Libraries, Firewalls, Routers, Switches, Load Balancers, Spam filters, Time Servers etc.

A full Hardware refresh program is required as equipment wears out which can potentially result in Market downtime. Maintaining aged hardware infrastructure is also costly in terms of support and labour costs which can exceed the capital cost benefits of not replacing the hardware.

It is essential that the All Island Market for Electricity continues to run in a secure, efficient and reliable manner. In order to do this, a hardware refresh is required to ensure the continued availability, reliability and support from our vendors is available. This support is essential for all issues/problems that arise, to be resolved in a timely fashion to minimise system downtime. Additionally, the market participants will continue to experience consistent/predictable performance of the Market Systems and SEMO will realise lower operational and support costs.

Progress to Date
DELIVERED

Capital Project 2	Systems Monitoring and Reporting

SEMO need to implement a system monitoring and reporting tool that supports and improves the availability and performance of the Central Market Systems. Currently SEMO resources are operating on a reactive basis and carry out daily manual checks on availability and performance. Given the importance of the availability of the Central Market Systems and the sensitivity of the information the systems contain, it is critical that SEMO implements a system monitoring and reporting tool that supports improving availability and performance across IT systems. With a System Monitoring Tool in place, SEMO will realise the benefits of automated monitoring, alerting and reporting and will adopt a proactive approach to identifying and resolving issues that will help to maintain the market systems availability.

Progress to Date

This proactive system will help significantly reduce the time it takes to find and clear system faults. Proactive maintenance of the CMS systems will reduce the number and duration of outages and will ensure the continued smooth running of essential market systems. This third party application will be able to provide data metrics and reports which will help in meeting SEMO's performance targets.

Design Phase - December 2011. **DELIVERED**
Implementation - In Progress.
Go live date - Quarter 2 2013.

Capital Project 3	Systems Management

SEMO does not currently have a structured/formalised approach to its systems management. The industry standard approach is to implement a systems management tool for provisioning, configuration management, monitoring, automating, patch management, release management and server administration. Currently systems management is performed on an ad-hoc and reactive basis and in a manner that does not utilise the SEMO resources in the most effective manner. SEMO notes that a number of systems management software packages are already available on the market, allowing all of these key activities to be automated, which can facilitate a proactive systems management strategy for the SEM systems. SEMO needs to implement an Enterprise Wide Infrastructure Management tool to enable overall cost reduction, improve governance and compliance, and provide greater agility for the market systems going forward.

Progress to Date

This system will help facilitate Patch Management, Code Releases, Centralised software server updates and will help the more efficient utilisation of IT infrastructure resources.

Design – In Progress
Implementation – Quarter 2 2013
Go live date - Quarter 2 2013

Capital Project 4	Virtualisation

The possibility exists for SEMO's corporate infrastructure to be hosted on virtual machines. A virtual infrastructure allows for physical resources of multiple machines to be pooled and shared across SEMO's entire infrastructure. These resources can be configured to serve high priority applications depending on business needs as and when these evolve and change. Resource optimisation allows greater flexibility in the distribution of data and could result in reduced capital and operational costs. An infrastructure that can scale up and down against business demand reduces the number of physical servers needed and enables fast and flexible provisioning of new servers. SEMO is focused on investigating new ways to reduce its overall IT costs and believes savings can be made by adopting a virtualisation strategy.

Progress to Date

Phase 1 Virtualisation of non production environments DELIVERED

Phase 1 of this project virtualised all Central Market System non production systems.

Phase 2 Virtualisation of Corporate systems is due Quarter 2 2013
Phase 2 covers the Corporate Systems which include Microsoft Exchange, Citrix and the Microsoft corporate applications such as MS Office suite of applications.

Capital Project 5	Oracle Logging

Since the creation of the SEM, auditors have consistently identified SEMO's inability to perform security logging as an issue that needs to be resolved. The auditors have stated that SEM require logs for the following:

Security Authentication – confirming the validity of the user and that they are accessing the network from no more than one site;

Security Authorisation – confirming whether the user has the appropriate level of access;

Audit trail - or historical market events so that ad-hoc queries can be addressed more effectively.

As the financial data travelling across the market systems continues to grow on a daily basis, it is essential that logging is implemented as a priority. This will enable a proactive approach to security and performance monitoring of the market systems and ultimately satisfy the long standing audit requirement.

Progress to Date

This solution will resolves the security issues raised in the Market Audits.

Design Phase - Quarter 1 2012 **DELIVERED**

Delivery date - July 2012. **DELIVERED**

Capital Project 6	SharePoint Document Management

Currently there is no centralised location for all SEMO related documentation. Files can be stored in any number of places: employee email, employee hard drive, file share etc, resulting in duplication of documentation and difficulties in locating files. The lack of a central data storage facility makes it difficult for employees to find, share, and collaborate effectively on content and valuable business information.

SEMO requires a centralised document management system that will facilitate the storage and organisation of documents and the sharing of these documents within the organisation. A document management solution can provide functionality that would enable SEMO to:

- Store, organize, and locate documents;
- Manage consistency and version control of documents;
- Help protect documents from unauthorised access or use;
- Enables collaboration between SEMO departments.

Progress to Date

SharePoint has been used to deliver several pieces of functionality throughout the 2010-11 year. SEMO has developed three compliance registers to meet the compliance obligations of SEMO's Market Operator Licenses and the Trading and Settlement Code. SEMO have also developed more efficient storage and data retrieval facilities to support the operations of the SEMO business. Developments over the coming year will include:

- Change Control system for the Trading and Settlement Code in light of the major changes required to the Code as a result of the Intraday Trading Project.
- Streamlining the organisation of the Market Operations data storage

- Providing a facility for the retrieval and storage of Processes, Work Procedures and Checklist templates
- Providing a facility for the soft copy entry and storage of completed checklists.
- Migrating of data storage from file shares to a document management solution.

Phase 1 - Storage of Processes, Work Procedures and Checklist templates, Compliance Register – **DELIVERED**

Phase 2 – Migration of SEMO users from file stores to SharePoint – Quarter 3 2013

Capital Project 7	Data Storage

Currently, SEMO does not have any data archiving in place. All data is stored online and available at all times despite the regulatory requirement to only have 2 yrs of online data and 7 yrs of offline data available at any time. As a direct result of this, SEMO is experiencing storage space problems as the data builds on a daily basis. This is putting a significant amount of pressure on the current disk architecture as there is no partitioning or tiering of the data in any form.

SEMO therefore requires a data storage solution that will help reduce the disk space requirements thus providing significant cost savings. Costs savings will be realised as less critical data will be housed on inexpensive servers.

Progress to Date

Phase 1 – Settlements Database partitioning - November 2011 – **DELIVERED**

Phase 2 - Settlements Database Archiving – February 2012 - **DELIVERED**

Phase 3 – Consolidation and policy refresh of backup procedures - Q2 2013

Phase 4 - Data De-Duplication – Q2 2013

Phase 5 – MI Database partitioning and archiving – Q3 2013

Capital Project 8	Data Warehouse

Data warehouses are a way for business users to extract information quickly and easily in order to answer questions about their business. Data warehouse tools look for hidden patterns that can be used to predict future behaviour and help identify previously unknown relationships in the data. The acquisition of a data warehouse will enable:

- Business analysts to perform a greater level of detail of analysis of the data without concerns about corrupting the data or having a limited window to operate in;
- Constant availability –not dependant on market systems being online;
- Key re-usable reports to be made readily available.

Progress to Date

Phase 1 - Infrastructure implementation - **DELIVERED**

Phase 2 - Requirements & Design for BI tools - In progress

Phase 3 – Implementation – Q3 2013

Capital Project 9	Reporting Database Upgrade

The reporting database was originally made available by SEMO IT on the premise that there were to be no critical services/business operations to be built off the database. This requirement has since changed and there are now day-to-day operations depending on the availability of the database (managing reports, verifying the completeness of settlement data, performing market studies and market audits).

Currently, the reporting database is run on a single server with no backups available. In the event of an emergency there is no alternative source of information for the various dependent business users. SEMO wish to rectify this situation through the implementation of a more resilient Reporting Database

Progress to Date

Capital Project Delivered

Capital Project 10	Oracle Database Server Version 2

As data demands increase there is a need for greater availability and performance of the market systems to support the ongoing needs of market participants. It is therefore imperative that the database is upgraded to facilitate these needs.

The existing SEMO database server will no longer be supported by DELL as its lifecycle is due to expire this year. Continued growth in data has meant the current database is struggling to maintain acceptable performance and requires significant maintenance from SEMO IT Database Administrators. Without a significant database upgrade there is a risk that the market systems will not be operating at their optimum levels. Upgrading the Database Server technology will help ensure that the market systems are operating on the most robust, reliable and secure levels. This proactive approach to database management will ensure that SEMO provides greater availability, reliability and performance of the market systems.

Progress to Date

Phase 1 - New File system, change of OS & upgrade to 11G - July 2012 – **DELIVERED**

Phase 2 - Upgrading to new high performance hardware - July 2012 – **DELIVERED**

Capital Project 11	New Communications Links

The use of the communication links has been steadily increasing over time and could potentially affect the operations of the Central Market Systems. These links are key infrastructure components of the Central Market Systems and are essential for providing fully redundant, consistently available and high performing systems across two locations. New communications links will provide SEMO with the ability to cope with increasing data demands and ensure that all of the benefits from any future Central Market System upgrades are realised.

The loss of one link, which has occurred on a number of occasions, resulting in the considerable reduction in performance of all systems. Problems experienced include, participants being unable to

submit bids, SEMO staff unable to carry out tasks, applications become unusable due to slow performance, and database stalling and affecting the operation of Central Market Systems.

Progress to Date

Delayed until further notice due to insufficient need at this moment (March 2013).

Capital Project 12	CMS Pre Production Environments

It is imperative that SEMO be in a position to investigate, test and diagnose issues in a timely and efficient manner, particularly where those issues impact on the operations of market participants. This can be better facilitated by the availability of new environments to investigate issues, test new releases and complete market analyses, ensuring the market remains operationally robust.

Currently, demand for pre-production environments is greater than availability. However, SEMO cannot compromise its test effort due to environmental constraints as the implications for the market are far too significant. The Technical Team need to have constant access to pre production environments, as ad hoc issues arise for which speedy resolutions are required. Similarly the Functional Team requires continual access to multiple environments to reduce the risk of delays in planned testing for the bi-annual deployments.

Progress to Date

The CMS Pre Production Environments will be commissioned and in place for the Testing and Market Trial phases of the Intraday Trading project. This will enable better analysis and testing as SEMO will for the first time have two identical production systems. This will dramatically reduce the duration of outages going forward.

DELIVERED January 2012

Capital Project 13	Axapta Upgrade

The Axapta system is used to manage market finances and is essential to the operation of the Central Market Systems. The system is used for reconciling bank accounts, processing cash receipts, maintaining market ledgers, managing collateral and bad debt, managing market currency exposure, keeping accounting records for financial reporting and for processing payments to market participants. The current Axapta system is based on version 3.0 of this Microsoft technology and requires an upgrade as Microsoft will no longer support this version.

Progress to Date

The Microsoft Financial Management tool formally known as Axapta has now been renamed Microsoft Dynamics. SEMO are now on the latest version of this Microsoft product (AX 2009).

DELIVERED May 2011.

Capital Project 14	On-Line Help System

Currently, parties wishing to raise an issue or a query with SEMO must phone or email the SEMO Market Helpdesk. Stakeholders making follow-up inquiries on existing calls or previously raised queries must also phone or email the SEMO Market Helpdesk. The implementation of an on-line help system would allow external stakeholders submit a new query, view the status of any existing queries directly through a SEMO Help Desk portal. This would enable participants to track their queries at their own convenience.

Progress to Date

Requirements - December 2011 - **DELIVERED**

Design - May 2012 – **DELIVERED**

Implementation - December 2012 - **DELIVERED**

Capital Project 15	Electronic Fax Solution

Fax communication is defined in the Trading and Settlement Code as one of the three valid communication channels, and is a vital form of communication in the SEM. As part of market communications SEMO sends and receives a large number of different fax communications. All outgoing fax communications are currently prepared, printed and faxed manually. All incoming communications are received, scanned, and filed manually. The current manual processes for fax communications has the potential for error or omission, may not be timely enough in certain circumstances, is difficult to co-ordinate across dual site operations, is open to security breaches, and does not provide auditable permanent records of incoming or outgoing communications.

While missing fax confirmations have been highlighted in previous audit reports, SEMO resources could be better utilised in ensuring core market functions are completed on time rather than manually managing fax transmittals. Therefore a need exists for an integrated electronic fax solution. The integrated electronic fax solution can receive and send faxes electronically, has the capacity to deal with business-critical time-dependent events such as Limited Communications Failure (LCF) and General Communication Failure (GCF) faxes, can send faxes to a single recipient or distribution list, can be viewed in electronic format by users in either the Dublin or Belfast, provides an audit trail of communications, can confirm successful transmission of all faxes sent, and can provide a secure environment for the receipt and storage of faxes thus reducing the risk of commercially sensitive data being lost.

Progress to Date

DELIVERED - July 2012.

Capital Project 16	On-Line Registration System

The existing SEM registration process was devised ahead of the go-live in 2007. Since then SEMO has received feedback on the registration process from a number of stakeholders including, new and existing participants registering Parties and Units, as well as the TSOs, MDPs and SEMO internally. This feedback

has identified the following difficulties with the current process:

- Confusion on the part of Applicants when completing the pack due to the complex nature of the data required;
- Poor validation of the registration pack prior to submission;
- Significant administrative overhead for SEMO;
- Inefficient dissemination of relevant information from the pack to TSOs and MDPs;
- Difficulty in converting applications into Market and TSO/MDP system setup.

A business need has been identified for an online registration system and associated document management functionality to replace the existing inefficient and error prone manual registration process. This would simplify the process both for Market Participants and Other Parties involved (SEMO, TSOs, MDPs), and significantly improve the process as a whole. The online registration system should decrease the workload for new participants entering the SEM and make the registration process less daunting and more transparent to participants.

Progress to Date

Requirements Gathering – Quarter 4 2012 – **DELIVERED**

Design – Currently out to tender – Q2 2013

Implementation – Q3 2013

Capital Project 17	Training Environment (Internal)

Currently there are no training environments available in SEMO to train new hires or rotating staff in functions such as Pricings and Scheduling, Settlement, Funds Transfer and Credit Management etc. It is essential that additional Market Application environments are made available to allow SEMO to optimally train staff and thus reduce the potential of operational issues in the live systems. Without this environment there will always be the risk that issues could arise in the production environment due to a lack of experience on behalf of the trainee. Because staff rotation is key to ensuring that all functions of the market can be carried out in a contingency situation, there will always be a significant amount of training occurring, and for this reason a new environment along with better training will always be relevant and in the long run will reduce the cost to the market.

Progress to Date

DELIVERED - July 2012