

**Market  
Systems  
Development  
Plan 7**

June 9

**2015**

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

**The systems  
development  
plan for the  
Central  
Market  
Systems.**

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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 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 seventh Market System Development Plan (MSDP) developed by SEMO for the period from 1<sup>st</sup> October 2014 to 30<sup>th</sup> September 2016. 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

The MSDP 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 MSDP6.

**Section 3** Provides a summary of the content of upcoming 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 period, 2015 to 2016.

**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 current SEMO Price Control 2013-2016 (SEM-13-054).

For clarity the MSDP pertains to the existing SEM market, it does not include any works related to the development of the new I-SEM. However, as advised by the Regulatory Authorities the I-SEM is expected to be come into effect in Q4 2017, as such there is a requirement to continue to operate the existing SEM until then and potentially in parallel to the new I-SEM to the end of 2018 under current market rules which require a M+13 arrangements. As such SEMO would welcome the opportunity to engage with the Regulatory Authorities on the arrangements for SEM and up to the end of 2017 and after as required.

## 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 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 Market Infrastructure (MI) 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 Management** – schedules programs and events, so much of the SEM operation is automated.
- **Report Management** – 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 1, Ex-Ante 2, Within Day, Indicative Ex Post and Initial Ex Post Market Schedules.
- **Calculation of System Marginal Prices** for Ex Ante1, Ex-Ante 2, Within Day, 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

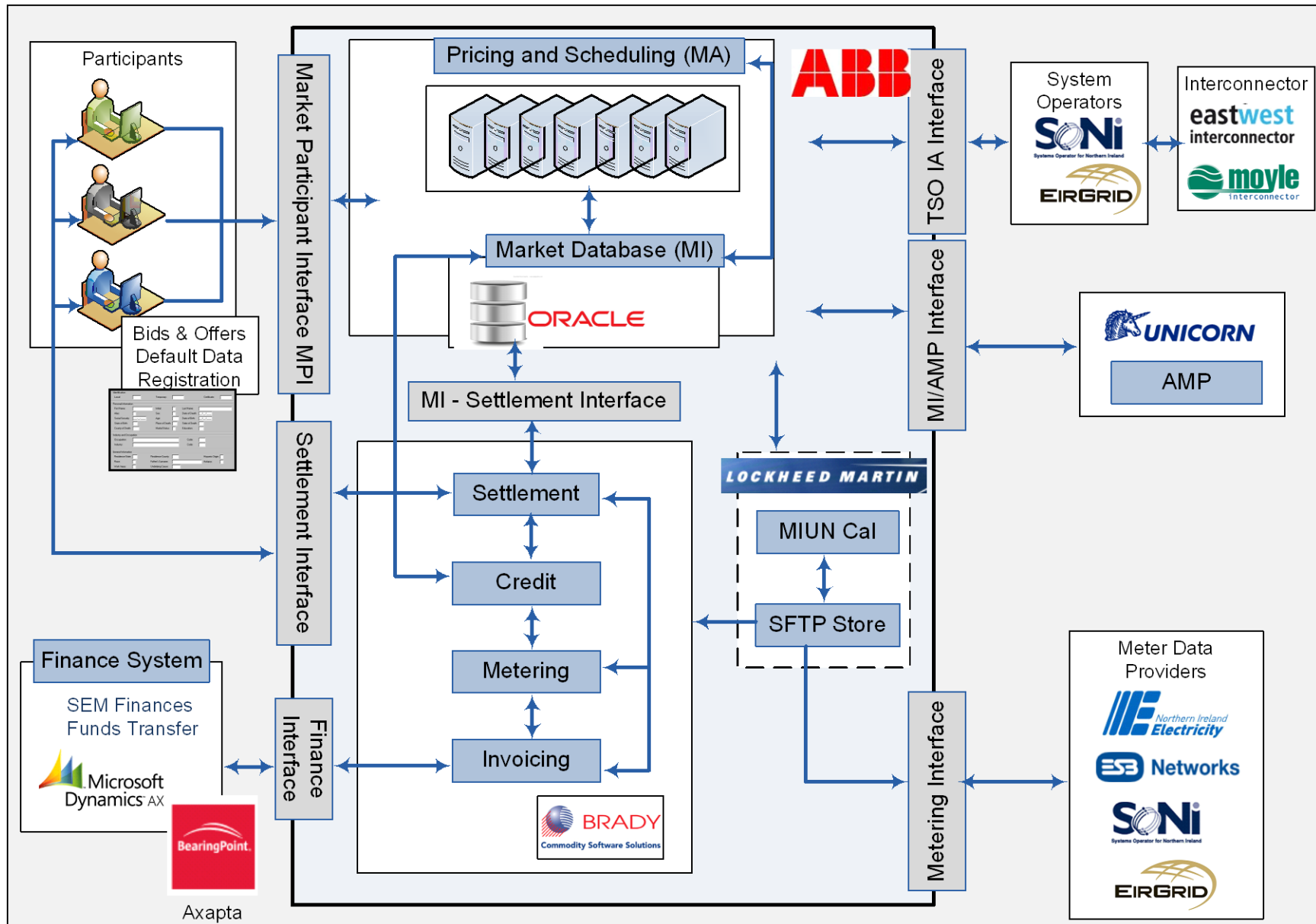
The Metering System manages the receipt of meter reading data from Meter Data Providers (MDPs); logs receipt of data; and transfers meter data to the Settlement, MI or MA systems for use in further processes.

### 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.



## Section 2 - Progress since MSDP6

SEMO has continuously communicated with Market Participants regarding the scope and likely impact of the scheduled biannual releases to the Central Market Systems (CMS). This has included, where relevant, detailed information on each release to allow Market Participants to design, plan and implement any changes necessary to their systems to align with these CMS releases. The following sections provide a brief overview of the May 2014, November 2014 and May 2015 CMS releases.

### May 2014 Release

The SEM R2.4.0 release to the CMS was deployed to schedule on May 16<sup>th</sup>, 2014. There were nine approved SEM Design Service (SDS) sourced Change Requests included in the release scope. Three additional Change Requests were added to scope to implement approved technical changes and to implement a change to the Actual Availability calculation to ensure CMS alignment with the Code. The full release scope was as follows:

CR or MOD ID	Change Request/Modification Description
<i>SEM_PC_CR271</i>	<i>Automated FX download to the Central Market Systems</i>
<i>SEM_PC_CR320</i>	<i>Dispatch Instruction Validation Change</i>
<i>SEM_PC_CR324</i>	<i>Event Warning for DAM Event</i>
<i>SEM_PC_CR292</i>	<i>MDP Dropdown in the MPI</i>
<i>SEM_PC_CR226</i>	<i>Pop-up Reminder of Digital Cert Renewal</i>
<i>SEM_PC_CR323</i>	<i>Bad Debt Smearing Calculation</i>
<i>SEM_PC_CR309</i>	<i>Tax File Import</i>
<i>SEM_PC_CR325</i>	<i>Automated Data Imports</i>
<i>SEM_PC_CR326</i>	<i>Historical Process Warnings</i>
<i>SEM_PC_CR321</i>	<i>Java Upgrade</i>
<i>SEM_PC_CR334</i>	<i>Security Updates</i>
<i>SEM_PC_CR335</i>	<i>DSP – Actual Availability calculation</i>

**Table 1** Release SEM R2.4.0 scope

### November 2014 Release

The SEM R2.5.0 release to the CMS was deployed to schedule on November 14<sup>th</sup>, 2014. There were eight approved SEM Design Service (SDS) sourced Change Requests included in the release scope. The approved scope for this release was as follows:

CR or MOD ID	Change Request/Modification Description
<i>SEM_PC_CR327</i>	<i>Event Queuing</i>
<i>SEM_PC_CR330</i>	<i>Changes to IART Report</i>
<i>SEM_PC_CR205</i>	<i>MPI Weblink User Access</i>

<i>SEM_PC_CR322</i>	<i>Eligible Availability for Energy Limited Units Under Test</i>
<i>SEM_PC_CR333</i>	<i>Functionality to apply PUGDOG Ttariff on a Trading Day</i>
<i>SEM_PC_CR332</i>	<i>Issue Zero invoices</i>
<i>SEM_PC_CR340</i>	<i>DSI Processing of Bids</i>
<i>SEM_PC_CR344</i>	<i>Use Spot ATC when determining interval Interconnector capacity for Ex-Post runs</i>

**Table 2** Release SEM R2.5.0 scope

## May 2015 Release

The SEM R2.6.0 release to the CMS was deployed to schedule on May 15<sup>th</sup>, 2015. There were three Regulatory approved Change Requests included in the release scope. The approved scope for this release was as follows:

CR or MOD ID	Change Request/Modification Description
<i>SEM_PC_CR341</i>	<i>Oracle Upgrade to 11.2.0.4</i>
<i>SEM_PC_CR342</i>	<i>AIX TL9 upgrade</i>
<i>SEM_PC_CR343</i>	<i>Smart FTP6 upgrade</i>

**Table 3** Release SEM R2.6.0 scope

## Modifications Summary

The table below gives a breakdown of modifications that SEMO have worked on since MSDP6; 1<sup>st</sup> October 2013 to 28<sup>th</sup> February 2015. [Appendix 1](#) lists all of these modifications. Details of each Modification and relevant documentation can be found on the SEM-O website.

Modification Status	Number
Implemented	15
Awaiting RA Decision	1
In Progress	9
Recommended for Rejection	2
Withdrawn	2
Total	29

**Table 4** Modification progress since MSDP6



## Section 3 - Forthcoming Market Releases

### October 2015

The release cut-off date for the SEM R2.7.0 release to the Central Market Systems was Friday, March 6<sup>th</sup>, 2015. There were no approved Modification Proposals or new SDS sourced Change Requests as at the release cut-off date. However, SEMO submitted a proposed scope to the Regulatory Authorities in early May to deliver in the SEM R2.7.0 release:

- Data collection and reporting under REMIT, the EU Regulation on wholesale energy market integrity and transparency;
- Mod\_09\_14 (Amendment to Make Whole Payments for Interconnector Units) which was approved at Extraordinary Mods Meeting 60; and
- A number of technical changes to ensure the Central Market Systems remain aligned with supported third-party products.

Regulatory approval for the release scope was received on May 8<sup>th</sup>.

### May 2016

The release cut-off date for the SEM R2.8.0 will be published during June 2015.

## 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 highlight 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 period, 2015 to 2016<sup>1</sup>.

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 the All Island Market. The effect of the European Market Integration Project (EMIP) has to be taken into account in relation to the current market arrangements and need to keep a fully functional market up to end 2017 and for any period beyond if required (e.g. for M+4 / M+13 re-settlement). A full review of CACM and all ENTSO-E Network Codes is currently being carried out to ensure compliance of TSO Grid Codes and Market procedures beyond 2017.

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<sup>1</sup> For clarity developments related to the I-SEM are outside of the scope of the MSDP.

## Policy and Development Initiatives

The Forward Work Programme outlines a number of forthcoming policy and development initiatives which have the potential to 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.

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 has always worked to identify ways in which the Central Market Systems (CMS) could be developed to deliver more efficient, transparent, accurate and timely services to the SEM as a whole.

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:

- European Market Integration;
- Changes to Make Whole Payments for Interconnector Users; and
- Changes due to REMIT legislation.

In addition to the above, other changes may be proposed to increase the efficiency of the SEM, as has been the case during the last five years of operation of the SEM. Individual assessment of cost-benefit analysis and lead time for implementation, will determine the most efficient course of action.

## 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 (2017 for Ireland and Northern Ireland), 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 complement increasing amounts of variable renewable generation.

A Q4 2017 commissioning of the I-SEM will operationally impact all SEM stakeholders necessitating an extension to the lifetime of existing systems and continuity in vendor support arrangements over an extended time period. In addition, transitional arrangements to cutover from the CMS to the I-SEM will shape future operational timelines and requirements. Under current M+13 arrangements, resettlement in the SEM may extend operational activities, in parallel to I-SEM operations, to end 2018. SEMO would welcome further dialogue with the Regulatory Authorities around these aspects to enable us, where appropriate, to secure adequate resources (vendor and otherwise) for the extended timeline with a view to ensuring a well coordinated, smooth and efficient transition to I-SEM operations.

## Future SEM Developments

### Modifications Developments

In the midst of these emerging developments we emphasise our continuing focus and commitment to the ongoing stable and transparent operation of the SEM. This is important to attract continued investment needed to manage and ensure security of supply, and to ensure we meet renewables targets. Whilst the SEM will undergo significant change as part of Market Integration, this will not occur before Q4 2017, meaning the current market arrangements will need to continue for the next two and a half years, and potentially in parallel with the new I-SEM when current re-settlement (M+13) arrangements are taken into consideration. Notwithstanding the need to remedy identified defects or critical design issues, as agreed as part of the Modification Panel process, we do not expect the SEM to change significantly before the implementation of the 'target model'. This is in recognition that any major changes should be considered in scope for Market Integration, as a more cost efficient way of realising associated benefits in the medium to longer term.

### Make Whole Payments for Interconnector Users

Subsequent to two Modifications raised by the Regulatory Authorities, a discussion ensued on the design of Make Whole Payments for Interconnector Users following the implementation of Intra-Day Trading. Two additional Modifications were raised on the matter by Interconnector Users to highlight the diversity of price signals between Imports and Exports. The final vote from the Modification Panel at Extraordinary Mods Meeting 60, recommended for approval a proposal developed from those discussions and will result in changes to the current system calculation. This change has subsequently been approved for implementation by the Regulatory Authorities for inclusion in scope for the October 2015 CMS release scope (SEM R2.8.0).

## Regulation on Energy Market Integrity and Transparency (REMIT)

SEMO is actively engaging with the Regulatory Authorities and Market Participants with respect to the implementation of REMIT reporting. Much of the information required to meet the REMIT obligations is already stored in the Central Market Systems and existing aspects of these systems (security, infrastructure etc) can be leveraged to assist Market Participants in meeting their reporting obligations. SEMO have worked closely with our software vendors in designing a solution to meet the REMIT requirement. This has subsequently been approved by the Regulatory Authorities for inclusion in the October 2015 CMS release scope (SEM R2.8.0)

### 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. 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

The REMIT Implementing Acts were adopted by the European Commission on the 17th December 2014, published in the Official Journal of the European Union on the 18th December 2014 and entered into force on the 7th January 2015, following which SEMO has nine months to prepare for the reporting of wholesale energy contracts admitted to trading at Organised Market Places. Reporting is due to begin from the 7th October 2015.

## Capex Programme 2013-2016

Table 5, overleaf, provides a brief update on the progress to date of the Capital Projects provided for in the SEMO 2013-16 Revenue Control Decision (SEM-13-054).

No	Capital Project	Project Description	Project Status
1	CMS Infrastructure	Three year Delivery timeline. Project will ensure the resilience of the CMS is maintained and the systems operate on fully supported platforms.	This piece of work will progress throughout 2013-2016. Server replacement program continues and aligns with end of life / warranty of CMS server estate – <b>In Progress</b>
2	Website Infrastructure & Services Upgrade	This project will replace obsolete hardware to cope with exceptional growth which is far beyond expectations when originally designed. In addition the existing website software will be updated as required.	Project will leverage virtualisation approach <b>Phase 1:</b> VMWare platform build – <b>Complete</b> <b>Phase 2:</b> Release incorporating Change Requests to provide additional functionality – <b>In Progress To be Complete Q1 2015</b> <b>Phase 2</b> SEMO primary and DR websites to migrate to VMWare Q2 2015 – <b>In Progress</b>
3	Sharepoint: Upgrade & Hardware Refresh	Sharepoint is a key operational support tool in operation since 2007. This project will replace obsolete hardware, upgrade sharepoint software to a supported version (V2013), migrate data to the new version and enhance data storage capability	Project will leverage Virtualisation approach. <b>Phase 1:</b> VMWare platform build - <b>Complete.</b> <b>Phase 2:</b> Sharepoint upgrade (V2007 to V2013) – <b>Complete</b> <b>Phase 3:</b> Custom logic conversion Q1 2015. – <b>In Progress</b> <b>Phase 4:</b> Training and Go-Live scheduled for completion Q2 2015.
4	Corporate Systems Refresh	Update and optimise data storage and routing capabilities including updating the corporate Storage Area Networks (SANs), replacing load balancers and replacing the backup system.	<b>Phase 1:</b> External Corporate firewalls upgraded – <b>Complete</b> <b>Phase 2:</b> Upgrade of RightFax solution - <b>Complete</b> <b>Phase 2:</b> Internal Firewalls and Load Balancer upgrade scheduled for Q2 2015 (align with May 2015 release). <b>Phase 3:</b> Analysis of SAN and backup system– <b>In Progress</b> <b>Phase 4:</b> Corporate server replacement program continues and aligns with end of life / warranty of corporate server estate – <b>In Progress.</b> This aspect of the project will progress throughout 2013-2016.
5	Telecommunications Links	Key infrastructure components providing fully redundant, consistently available high performance links between SEMO sites.	<b>Project Complete.</b> New 1GB links went operational end 2014.
6	Technical Upgrade of Microsoft Dynamics	Upgrading the MS Dynamics software which covers both Market and SEMO Corporate finance.	<b>Project to commence 2015.</b>
7	Security Intrusion (Protection of CMS)	Delivery of a Network Intrusion Detection System (NIDS).	<b>Project to commence Q2 2015.</b>

8	Virtualisation of Oracle & network devices	This project will virtualise <ul style="list-style-type: none"><li>• non-Production Oracle databases</li><li>• Cisco network equipment in Belfast data centre</li></ul>	<b>Phase 1: Analysis of requirement / solution – In Progress</b>
9	Upgrade of Supportworks Helpdesk	This project will provide a lifecycle upgrade for the software used by the Market Helpdesk.	<b>Scheduled for 2015/2016</b>

**Table 5** Capex Programme 2013-2016

## Appendix 1 Modifications

Modifications included in versions 14.0, 15.0 and 16.0 of the T&SC	Modification effective Date	T&S Code Sections or AP Modified	T&SC Version
SEMO Design Baseline Documentation to V14.0	15 November 2013	V14.0	14.0
Mod_05_13 Amendment to the definition of "Working Day"	17 July 2013	T&SC Glossary	14.0
Mod_06_13 Housekeeping 6	28 June 2013	Agreed Procedure 1, Section 2.3, Agreed Procedure 6, Appendix 2	14.0
Mod_07_13 Clarification regarding the rules for Instruction Profiling in Appendix O	17 July 2013	Appendix O	14.0
Mod_08_13 Amendment to the number of days granted to the MO for the issuing of Party Accession Deeds	28 June 2013	Agreed Procedure 1, Section 3.1.2	14.0
Mod_09_13 Amendment of AP7 to include the use of e-mail notification and the SEMO public website in the event of a GSF	18 October 2013	Agreed Procedure 7, Sections 2.2.1, 2.2.2, 3.1, 5.1, Glossary	14.0
Mod_10_13 Removal of Requirement for SOs to send certain Dispatch Instruction Codes and Instruction Combination Codes for Pumped Storage Units to the MO	8 November 2013	Appendix O	14.0
SEMO Design Baseline Documentation to V15.0	06 May 2014	V15.0	15.0
Mod_11_13 Amendment of AP5 to update the encryption key standard from 1024 bit to 2048 bit	10 January 2014	Agreed Procedure 5, Section 2.1.1.1	15.0
Mod_13_13 Update to AP14 "Disputes"	10 January 2014	Agreed Procedure 14, Section 2.1 step 10	15.0
Mod_14_13 Update of references to the SEM Bank in Agreed Procedure 17	10 January 2014	Agreed Procedure 17, Sections 2.1, 2.3.1, 2.5, Appendix 1	15.0
Mod_01_14 Removal of obligation to publish Ex-Ante Margin	3 April 2014	Appendix E Table E.3 AP6 Appendix 2	15.0
Mod_02_14 Housekeeping 7	3 April 2014	T&SC Section 4.135	15.0
Mod_03_14 Change in Timeline for Submission of MO Report on Annual Capacity Exchange Rate	3 April 2014	T&SC Section 4.96	15.0



Mod_05_14 Update of AGU and DSU registration provisions	3 April 2014	T&SC Section 2.34, 2.34C, 2.34D and Section 5.195, 5.196	15.0
Mod_06_14 Change to AP04 Section 2.4 relating to cancellation of a Unit Under Test for the EA1 run in D-1	1 May 2014	AP4 Section 2.4, 2.4.1, 2.4.2	15.0
SEMO Design Baseline Documentation to V16.0	14 November 2014	V16.0	16.0
Mod_07_14 Change to Final Registration Meeting Requirements to allow for email	8 September 2014	AP 1 Section 3.2.5; Step 4.1	16.0

<b>Modifications not yet included in latest versions of the Code to date (V16.0)</b>	<b>Date Modification was raised</b>	<b>T&amp;S Code Sections or AP Modified</b>	<b>Mod Status</b>
Mod_18_11 Definition of Availability	<b>26 May 2011</b>	<b>T&amp;SC Glossary</b>	<b>Awaiting RA Decision (Recommended for Approval)</b>
Mod_11_12 Proposal to extend the definition of Special Units to include Compressed Air Energy Storage	<b>15 May 2012</b>	<b>T&amp;SC Section 5.0</b>	<b>In progress</b>
Mod_21_12 Amendment to Available Transfer Capacity (ATC) definition	<b>11 September 2012</b>	<b>T&amp;SC, Appendix K and AP2</b>	<b>In progress</b>
Mod_02_13 Registration of Charges	<b>21 November 2013</b>	<b>T&amp;SC Section 2 and Section 6, AP 1, AP 9 AP 17 , Glossary</b>	<b>In progress</b>
Mod_12_12 Amendment to Special Units Pumped Storage definition to include Energy Storage	<b>20 November 2013</b>	<b>Glossary, Appendices H, I, M, N, and O TSC clauses 2.34, 4.36, 4.78, 5.109 through 5.141, 5.168, 8.57</b>	<b>In progress</b>
Mod_04_14 Change to Uplift Parameters Determination Timeline	<b>20 March 2014</b>	<b>Section 4.470</b>	<b>Withdrawn</b>
Mod_08_14 Clarification of Location of SEM Collateral Reserve Accounts	<b>18 September 2014</b>	<b>T&amp;SC Section 6.19</b>	<b>In progress</b>
Mod_09_14 Amendment to Make Whole Payments for Interconnector Units	<b>14 November 2014</b>	<b>T&amp;SC Section 4.139, 4.140, 4.140A,</b>	<b>In progress</b>

<b>Glossary</b>			
Mod_10_14 Make Whole Payments for IC Units	<b>14 November 2014</b>	<b>T&amp;SC Section 5</b>	<b>Recommended for Rejection</b>
Mod_11_14 Pay-As-Bid / Paid-As-Bid for Interconnector Units	<b>20 November 2014</b>	<b>T&amp;SC 5.91</b>	<b>Recommended for Rejection</b>
Mod_12_14 Amendment to Make Whole Mechanism to remove Settlement Periods of simultaneous import and export flows	<b>20 November 2014</b>	<b>T&amp;SC 4.140-4.140A (new)</b>	<b>In progress</b>
Mod_13_14 DSUs as Predictable Price Takers	<b>20 November 2014</b>	<b>TSC 5.154, Appendix I: Offer Data</b>	<b>In progress</b>
Mod_01_15 Tolerance for Metered Volume changes in Settlement Queries	<b>27 January 2015</b>	<b>AP 16 – Provision of Meter Data section 2.1</b>	<b>In progress</b>
Mod_02_15 Permitting DSUs registrants to register as either a TSSU or as an ASU in the Single Electricity Market	<b>29 January 2015</b>	<b>T&amp;SC Section 5.152</b>	<b>Withdrawn</b>