



Legacy SEM Decommissioning Close Out
Report – Redacted Version

31st March 2021

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Contents

1	Executive Summary.....	3
2	Background	5
3	Financial Close-Out	8
3.1	Financial Summary	8
3.2	Final Legacy SEM balances transferred to new SEM	8
3.3	Bank balances	9
3.4	Letters of credits	9
3.5	Deeds of Release.....	10
3.6	Final Legacy SEM K-factor	10
3.7	Legacy SEM Revenue 2021/2022.....	10
3.8	Final Legacy SEM Regulated Accounts 2019/2020	10
3.9	Final Legacy SEM Asset Register 2019/2020.....	10
3.10	██████████ (accounting system)	10
3.11	Cost of decommissioning.....	10
3.12	Update on Legacy SEM Market Audit report.....	12
3.13	Update on final Legacy SEM Financial Audit report.....	12
4	Legacy SEM System Decommissioning	13
4.1	Details of Decommissioned Systems	14
4.1.1	CMS Application Stack	14
4.1.2	Test Environments	15
4.1.3	██████████	15
4.1.4	Other Applications	16
4.1.5	Storage	17
4.1.6	FileShare.....	17
4.1.7	██████████.....	18
4.1.8	██████████	18
4.1.9	CMS SEMO Market Database.....	18
4.1.10	MPI Static and Dynamic Reporting Database	18
4.1.11	Website	19
4.2	Summary of Servers Equipment decommissioned	19

Appendices..... 20

 Appendix 1: Final Legacy SEM K-factor 21

 Appendix 2: Final Legacy SEM Market Audit Report 2018/2019 22

Glossary..... 23

1 Executive Summary

Following the Go Live of the I-SEM market, on 1st October 2018, the legacy SEM market entered into the final settlement/resettlement phase and ultimately, the wind down and decommissioning phases of its life cycle. This paper outlines the decommissioning and financial close out of the legacy SEM arrangements, including, details of the costs incurred by SEMO in the carrying out of the required decommissioning activities. This paper is provided for the information of the Regulatory Authorities (RAs) on a Confidential and Commercially Sensitive basis. A redacted version of the report for publication is being prepared for in fulfilment of the RAs request for same.

The last invoicing for Legacy SEM occurred on 01 November 2019. This included M+13 resettlement for week 39 2018 and 2 ad hoc resettlements for Week 33 2018 & Week 34 2018. The final credit report ran on 12 November 2019. All Trading and Settlement Code operational activities were completed in May 2020 when the 6 month dispute window closed. During that period one dispute was raised. Following engagement with the Participant it was agreed that the dispute would subsequently be withdrawn.

The final Legacy SEM Market Audit report, as outlined in SEM-19-051 and SEM-19-067 was for the period 1 January 2019 – 31 December 2019 and included Legacy SEM Resettlement and Transitional Arrangements from Legacy SEM to SEM. The relevant sections of the Market Auditor Report dated 5 June 2020 have been included in Appendix 2. The full report can be found on the SEMO website¹.

Decommissioning of the Legacy SEM broadly falls into two areas:

- Financial Close-Out
- Legacy SEM System Decommissioning incl. ongoing provision of access to legacy data

Full details of the Financial Close-Out are set out in Section 3 of this document and reflect the final Legacy SEM financial Accounts for FY 20, final Legacy SEM Asset Register for FY 20 and the final Legacy SEM K-factor for FY 20. The final legacy SEM balances at 30 September 2020 were included in the 2019/2020 financial accounts of EirGrid plc and SONI Limited. These accounts were signed off by our external auditors Deloitte with no Legacy SEM issues identified.

In terms of costs the June 2020 Decommissioning Paper as provided to the RAs outlined the forecasted legacy SEM costs associated with:

- The Decommissioning Phase;
- Maintenance of SEMO Website (for legacy SEM) for two years post the resettlement period (End 2019 to End 2021);
- Maintaining historical legacy SEM Data for a period of two years beyond the two year period of legacy SEM Website Maintenance (End 2021 – End 2023); and

¹ [https://www.sem-o.com/documents/market-operator-performance/SEM-Market-Audit-Final-Report-YE2019-\(20200605\).pdf](https://www.sem-o.com/documents/market-operator-performance/SEM-Market-Audit-Final-Report-YE2019-(20200605).pdf)

- Maintaining access to the financial information in compliance with Company Law obligations which ensure that data can be accessed and audited for a period of six years. (end 2019 to c. end 2025).

The total decommissioning costs totalled €313,150. These costs have been included within the internal opex allowance of the 19/20 k-factor calculation for the Legacy SEM. It is also separately identifiable as a line item in the Regulated Income Statement.

The enduring OpEx costs of €12k per year are provided for via the SEMO revenue for operation of the I-SEM arrangements. This is required to allow the legacy SEM accounts to be closed. The €12,000 per annum opex allowance has been included with the BPQ as part of the recent SEMO opex submission for the operation of the I-SEM arrangements dated 11th December 2020.

The decommissioning of the Legacy SEM Systems, and ongoing provision of access to legacy data full details are set out in Section 4.

All legacy SEM systems have been decommissioned including SEM Corporate Infrastructure Servers; P0 Infrastructure and Non-Production; P1/P2 Infrastructure and the Legacy SEMO Website. Encompassing

- Central Market Systems (CMS) Applications
- Environments
- Domains
- Other Applications
- Storage
- FileShare
- [REDACTED]
- CMS SEM Market Database
- MPI static & Dynamic Reporting Database
- Website

In terms of the website, and noting requirement of the RAs and market participants for access to historical legacy SEM Data to be maintained, the Legacy SEM website was fully functional until 12 August 2020. A subset of Legacy SEM data including Dynamic Reports, Historic Modification and Publications has been transitioned and made available on the SEM website². A Market Message issued to participants on 13 August once the data transition was complete advising MPs the legacy SEM website was no longer accessible and legacy SEM data can now be accessed through the SEM website.

The final k factor for the legacy SEM will be formally submitted, as part of the normal arrangements under the Annual K factor and Tariff process for the setting of SEMO Revenues. This will represent the last and final financial settlement of the legacy SEM arrangements.

² <https://www.sem-o.com/legacy/> - Legacy SEM Market data can be found via the Dynamic Reporting section.

2 Background

In August 2016 the SEM Committee published its final SEMO Price Control Decision paper (SEM/16/043) (the '**SEMO PC**')³ which set out the forecast revenues for the operation and ultimate decommissioning of the SEM based on an assumed Go-Live for the I-SEM of Oct 2017 and covered the period October 2016 to March 2019. The legacy SEM system was a self-contained environment which, under the Price Control arrangements, was allowed to age based on the assumed I-SEM Go Live date of 1 October 2017.

The SEM Committee (SEMC) in the SEMO PC required SEMO to engage with the RAs on the *“decommissioning requirements, most notably around the enduring presentation and administration of SEM data”* and to consult with industry on the *“options available, including costs, in order to gain market participant feedback on the best option to pursue”*.

Further to engagement with the RAs SEMO submitted its proposed consultation paper on the Decommissioning Plan in August 2017; this was approved by the RAs and published for consultation by SEMO on the 10 August 2017. The consultation closed on the 07 September 2017 and SEMO submitted the Central Market Systems (CMS) Decommissioning – Recommendations paper and copies of the Consultation Responses to the RAs on 09 November 2017.

In December 2017, an update on the impact on the decommissioning costs due to the RAs I-SEM Stocktake Decision, which pushed the forecast SEM Go-Live date to May 2018, was provided to the RAs. A further update was provided to the RAs in January 2019, following the SEMC revision of the I-SEM Go-Live date to 1 October 2018.

These decisions resulted in the M+13 resettlement period of the legacy SEM extending to November 2019 and taking into account the Settlement query window +20 days and the 6 month dispute window provided for under the Trading and Settlement Code⁴, operational activities extending to May 2020. To enable the legacy SEM arrangements to continue to operate during this extended period required the necessary support contracts of the Central Market Systems (CMS) to be extended.

There has been ongoing engagement with the RAs on the decommissioning of the legacy SEM. As part of this engagement in late 2019, SEMO advised the RAs that as the legacy SEM environment was past its end of life and the costs of continued operation would come with a high premium. In addition the required security protocols could not be applied due to the limitations of the software and hardware and this was a notable concern.

SEMO was, however, cognisant of a number of regulatory and legal obligations that survived the final operational date of the legacy SEM including;

³ [SEMO PC – SEM/16/043](#)

⁴ In accordance with the Trading & Settlement Code Clause 2.278 - “Subject to the rules concerning the commencement of certain Settlement Disputes set out in paragraph 2.282, a Dispute is deemed to exist when one Party notifies another Party or Parties in writing of the Dispute by way of a Notice of Dispute within 28 days of that Party having become aware of the Disputed Event and in any event within 6 months of the last timetabled Resettlement including any Ad-hoc Resettlement post M+13.”

- (i) Maintenance of SEMO Website (for legacy SEM) for two years post the resettlement period (End 2019 to End 2021)⁵;
- (ii) Maintaining historical legacy SEM Data for a period of two years beyond the two year period of legacy SEM Website Maintenance (End 2021 – End 2023)⁶; and
- (iii) Maintaining access to the financial information in compliance with Company Law obligations which ensure that data can be accessed and audited for a period of six years⁷. (end 2019 to c. end 2025).

In order to meet the requirements above via the legacy SEM environment could give rise to significant costs as upgrades to the legacy SEM environment, including system and license upgrades and associated ongoing resourcing costs, would be needed. In light of the this SEMO sought to mitigate these potential costs and impacts while still enabling it to fulfil its regulatory and legal requirements by implementing an alternative solution. This alternative approach would see SEMO migrating the critical systems and data from the legacy SEM environment onto the SEM environment.

The drivers for this proposed migration were:

- It is more cost effective to move and support the data on the SEM website;
- The SEM environment is managed and maintained;
- The SEM environment is more secure as it features the latest architecture; and
- The migration reduces the cost to SEMO of managing and maintaining applications and servers.

While noting that this migration approach would drive a modest cost for legacy SEM and an increase in operational costs associated with the SEM website, it minimised and de-risked the alternative much higher capex cost, annual future cost and resource impact associated with maintaining the entire self-contained legacy SEM environment for multiple years post resettlement.

The RAs in May 2020 advised, that the proposal “aligns with the RAs’ understanding”⁸. Market Participants were advised of the approach for managing access to the legacy SEM data at the MOUG in June 2020.

⁵ The SEMO PC (SEM-16-043) set out a requirement for the SEM website to be maintained for two years beyond I-SEM Go Live. However, in the paper there was also reference to keeping the website fully functional until “the end of the two year dispute window, following the cessation of the SEM” and “two years post the cessation of the SEM”. Further to engagement with the RAs on the intent of the requirements and as reflected in the RA approved SEMO Decommissioning Plan Consultation Paper the period for retention was set out as “two years after the M+13 Settlement period”. The industry responses and post consultation recommendation paper were set in this context. While it is noted that the approach set out in this document will see the Legacy SEM website decommissioned in July, all of the data will be available to industry / interested parties through dedicated pages hosted on the SEM website as this is ultimately a more cost effective.

⁶ SEMO and the RAs had previously discussed the possibility of provisionally maintaining access to the SEM historical data for an additional period of two years beyond the shutdown of the SEMO Website (i.e. July 2021 - June 2023) in light of responses received to the SEMO Decommissioning Plan Consultation Paper which highlighted concerns about the potential unavailability of such data following the shutdown of the website.

⁷ Section 285 of the Companies Act 2014 requires that accounting records should be kept for a period of 6 years after the end of the financial year containing the latest date to which the record, information or return relates.

⁸ Email from the Regulatory Authorities to SEMO on 12 March 2020.

SEMO submitted an updated Decommissioning paper to the RAs on the 23 June 2020 (the 'June 2020 Decommissioning Paper'), which set out the new approach including an estimate of the costs.

Noting that no decision paper on the SEM Decommissioning plan was ever published following the decommissioning consultation, it was agreed with the RAs that SEMO would publish a close-out report on decommissioning.

This paper sets out details of the Decommissioning of the Legacy SEM for the review of the RAs and is provided on a Confidential and Commercially Sensitive basis. A redacted version of the report for publication is being prepared for in fulfilment of the RAs request for same.

- Market Creditors – [REDACTED]

3.3 Bank balances

Table 2 below shows a summary of the bank account closures and funds transferred on the winding down of Legacy SEM. An example of how to read the below table is 40 participants requested that their SEM accounts were closed and money transferred back to them whereas 15 participants asked for their money to be transferred to their SEM collateral accounts.

The [REDACTED] and [REDACTED] transferred to Balancing market accounts in SEM mainly represents the [REDACTED] [REDACTED] [REDACTED] and [REDACTED] Market Creditors balances mentioned above.

Bank Accounts closed and funds transferred to:	No. of accounts	€	No. of accounts	£
Participants funds				
Participants own accounts	40	[REDACTED]	23	[REDACTED]
Participants new SEM collateral accounts	15	[REDACTED]	1	[REDACTED]
Balancing market accounts	3	[REDACTED]	3	[REDACTED]
SEMO funds				
New SEM Corporate Accounts	1	[REDACTED]	1	[REDACTED]
New SEM Market Operator accounts	1	-	1	[REDACTED]

Table 2 Bank Accounts Closed and Transferred

3.4 Letters of credits

A valid letter of credit was required for Legacy SEM for 6 months after the last resettlement of the market in November 2019 (see table 1 above); this was to ensure the market was collateralised in the event of an ad hoc resettlement as a result of an upheld dispute. As there was no disputes, upheld or otherwise, there was no further ad hoc resettlement required. Following this 6 month period, post the last resettlement of the market, if an Interim Transfer Facility (ITF) was in place then the letters of credit transferred to the SEM. An ITF was offered to participants who were transitioning from Legacy SEM to SEM. If the letter of credit was in place for Legacy SEM only then the letter of credit expired after this required period.

3.5 Deeds of Release

A Deed of Charge was in place for all cash collateral accounts; as such the final step of closing these collateral accounts was to execute a Deed of Release for each account. All Deeds require signature under seal, which means an original signature and a sealed document as set out in legislation. The Deeds of Release will be executed by SONI and EirGrid and then filed in the Companies House Belfast Office or Companies Registration Office, Dublin as appropriate. There were 6 NI Deeds and 56 ROI Deeds.

3.6 Final Legacy SEM K-factor

The final Legacy SEM K-factor (2019/2020) shows an under recovery of €0.5m. The workings for the Legacy SEM K-factor have been included in Appendix 1 to this document.

3.7 Legacy SEM Revenue 2021/2022

Legacy SEM does not require any revenue for 2021/2022 as it has been fully wound down.

3.8 Final Legacy SEM Regulated Accounts 2019/2020

- Income Statement - The closing Income Statement of Legacy SEM at 30 September 2020 contains a € [REDACTED] after all the above mentioned transfers⁹.
- Balance Sheet - The only balance on the closing Balance Sheet of Legacy SEM at 30 September 2020, after the above mentioned transfers, is the € [REDACTED] current year Income Statement balance, which cancels with the remaining balance in retained earnings. On rolling forward the Legacy SEM accounts to 1 October 2020 the Income Statement will contain all nil balances as will the Balance Sheet. The Legacy SEM accounts are therefore wound down¹⁰.

3.9 Final Legacy SEM Asset Register 2019/2020

As the Legacy SEM has been wound down this is the last Asset Register for Legacy SEM. As all assets are fully depreciated the Legacy SEM Asset Register contains all nil net book value balances¹¹.

3.10 [REDACTED] (accounting system)

To comply with Company Law requirements¹² the [REDACTED] system has been decommissioned and moved to the new SEM servers with access via read only mode.

3.11 Cost of decommissioning

The June 2020 Decommissioning Paper outlined the forecasted legacy SEM costs associated with:

- The Decommissioning Phase;
- Maintenance of SEMO Website (for legacy SEM) for two years post the resettlement period (End 2019 to End 2021);

⁹ Ref Final Legacy SEM Regulated Income Statement submitted to the RAs on the 30 March 2021 as part of the Legacy SEM Financial Report

¹⁰ Ref Final Legacy SEM Regulated Balance Sheet submitted to the RAs on the 30 March 2021 as part of the Legacy SEM Financial Report

¹¹ Ref Final Legacy SEM Asset Register submitted to the RAs on the 30 March 2021.

¹² Section 285 of the Companies Act 2014 requires that accounting records should be kept for a period of 6 years after the end of the financial year containing the latest date to which the record, information or return relates.

- Maintaining historical legacy SEM Data for a period of two years beyond the two year period of legacy SEM Website Maintenance (End 2021 – End 2023); and
- Maintaining access to the financial information in compliance with Company Law obligations which ensure that data can be accessed and audited for a period of six years. (end 2019 to c. end 2025).

While initially the decommissioning costs were envisaged to be split into two categories

- CapEx costs associated with the decommissioning of the systems; and
- Enduring Opex annual cost associated with providing and maintaining access to the legacy data,

on further review and in accordance with International Financial Reporting Standards (IFRS), all costs are deemed to be OpEx as they are being written off due to the legacy SEM being wound down.

The total decommissioning costs totalled €313,150. Details of the actual outturn costs against that forecast are set out in Table 3 below. These costs have been included within the internal opex allowance of the 19/20 k-factor calculation for the Legacy SEM (Ref. Appendix 1). It is also separately identifiable as a line item in the Regulated Income Statement¹³.

The enduring OpEx costs of €12k per year are provided for via the SEMO revenue for operation of the I-SEM arrangements. This is required to allow the legacy SEM accounts to be closed. The €12,000 per annum opex allowance has been included with the BPQ as part of the recent SEMO opex submission for the operation of the ISEM arrangements dated 11th December 2020.

Costs Spend category	Forecast Costs - € (2020 Monies)	Actual Outturn - € (2021 monies)
(i) Decommissioning Phase		
Servers: removal from site and issue certification	■	■
Hardware and governance	■	■
(ii), (iii) and (iv) SEMO Website & historical data		
■	■	■
Finance System	■	■
Website	■	■
Hardware cost	■	■
Resource Cost	■	■
Total Costs	289,470	313,150

Table 3 - Total Costs associated with the decommissioning of the Legacy SEM Systems

The key drivers of the changes in the 2021 outturn against the 2020 forecast costs are:

- ■ – Extra migration elements that had not been originally identified were required.

¹³ Ref Final Legacy SEM Regulated Income Statement submitted to the RAs on the 30 March 2021 as part of the Legacy SEM Financial Report

- **Hardware Cost** – The website included Cloud Servers which was covered by Hardware and Governance.
- **Resource Cost:** The project was hit by commercial delays which strained vendor timelines subsequently extending internal resource costs.

3.12 Update on Legacy SEM Market Audit report

The Legacy SEM Market Audit report, as outlined in SEM-19-051 and SEM-19-067 was for the period 01 October 2018 – 31 December 2019 and included Legacy SEM Resettlement and Transitional Arrangements from Legacy SEM to SEM. The relevant sections of the Market Auditor Report dated 5 June 2020 have been included in Appendix 2. The full report can be found on the SEMO website¹⁴.

3.13 Update on final Legacy SEM Financial Audit report

The final legacy SEM balances at 30 September 2020 were included in the 2019/2020 financial accounts of EirGrid plc and SONI Limited. These accounts were signed off by our external auditors Deloitte with no Legacy SEM issues identified.

¹⁴ [https://www.sem-o.com/documents/market-operator-performance/SEM-Market-Audit-Final-Report-YE2019-\(20200605\).pdf](https://www.sem-o.com/documents/market-operator-performance/SEM-Market-Audit-Final-Report-YE2019-(20200605).pdf)

4 Legacy SEM System Decommissioning

The legacy SEM system was a self-contained, fully ring fenced environment with 5 interfaces as summarised in Figure 1

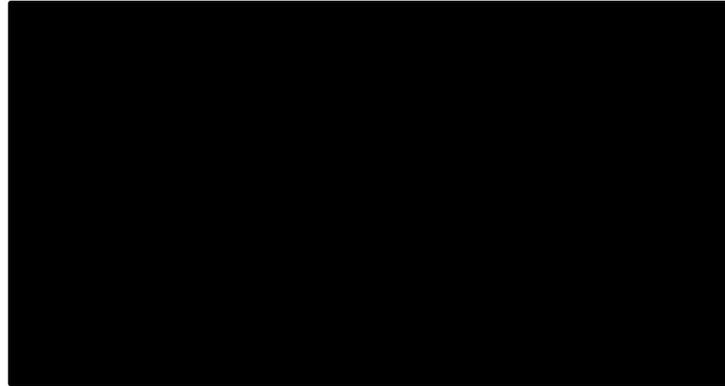


Figure 1 – Legacy SEM System Environment

The legacy SEM systems comprised several infrastructure components summarised below:

- **SEM Corporate Infrastructure Servers** – the functions of which was to host the main domain controllers, [REDACTED] servers and file shares used day to day in legacy SEM market operations. They allowed people to log on to the SEMO [REDACTED] systems to access email, file shares and applications (word, excel etc). The majority of these servers are virtual and hosted in [REDACTED].
- **P0 Infrastructure and Non-Production** - The P0 (Controlling) environment contained the domain controllers, [REDACTED] Servers and File Shares used for the legacy SEM systems. P0 also included the [REDACTED] monitoring tools. Non-Production (NP) was hosted on a P0 Infrastructure along with several physical servers and covers six test environments. The P0 Infrastructure and Non-production environments facilitated the necessary testing and control of the P1/P2 infrastructure.
- **P1/P2 Infrastructure** - The P1 (Primary) environment of the Central Market System (CMS) Stack has not been used since November 2017, but was maintained as a back-up environment. The P2 (Secondary) CMS environment was maintained as the M+13 environment for the Market until completion of Decommissioning of both P1 and P2 environments. Certificates, URLs and [REDACTED] security patches were maintained throughout the Decommissioning process.
- **The Legacy SEMO Website** is hosted internally and was accessible post go live on the Legacy SEM website under the lg.sem-o.com address. Market resettlement continued for the M+13 and was published on the Legacy SEM website.

4.1 Details of Decommissioned Systems

SEMO has set out below a detailed breakdown of the legacy SEM systems that have been decommissioned:

- Central Market Systems (CMS) Applications
- Environments
- Domains
- Other Applications
- Storage
- FileShare
- [REDACTED]
- [REDACTED]
- CMS SEM Market Database
- MPI static & Dynamic Reporting Database
- Website

4.1.1 CMS Application Stack

The following is a breakdown of the CMS application stack. For clarity, Decommissioning Status 'Complete' means that the system has been backed up and archived.

Decommissioning Project & Description	Decommissioning Status
UUC – MA (Market Application)	Complete
Used by Market Operations to complete the 'Daily runs'; Within Day (WD1), Ex-Ante (TD+1), Ex-Ante2 (TD+1), Initial Expost (EP1), Indicative Expost (EP2) Decommissioned commenced upon acknowledgement of M+13 Closure and is complete.	
MOI – Market Operator Interface	Complete
GUI allows the MO to verify market events, report publications & feed information. GUI allows the MO to monitor events, re-run events and query submission data. Decommissioned commenced upon acknowledgement of M+13 Closure and is complete.	
MPI – Market Participant Interface	Complete
Externally facing website which acts as the main interface for the CMS, allows participants; Submit bids and query for Market Trading, to view and download reports and invoices. Allows participants and the Market Helpdesk to make changes within registration; for users, units, participant contact details etc. Decommissioned commenced upon acknowledgement of M+13 Closure and is complete. For continuity and market participation, All the Dynamic Reports, FAQ's, Modifications and a subset of Static Reports and Content has been copied over and added to the SEM website. This information has been available since 12th Aug 2020.	
RCUC – Control Room	Complete
Used by the Control Centre and Near Time Engineers. Several runs completed per day using In-Day and Day-Ahead Schedules. Used to provide a dispatch schedule for the Power Stations. Receives feeds from the Single Electricity Market (SEM), Energy Management System (EMS). Decommission completed February 2020.	

Settlements – Meter Data and Pricing	Complete
Used for Meter Data. Use for Pricing of Market Runs. Decommissioned commenced upon acknowledgement of M+13 Closure and is complete.	
CRM – Credit Risk Management	Complete
Used for Credit Risk Management. Decommission constrained by [REDACTED] move and completed in October 2020	

4.1.2 Test Environments

Six test Environments used for Testing, training and support;

Decommissioning Project & Description	Decommissioning Status
Environment 1	Complete
Used by Market Support for SIT (Full CMS Stack) Decommissioned upon acknowledgement of M+13 Closure and is complete	
Environment 2	Complete
Used by Market Support for UAT (Full CMS Stack) Decommission completed February 2020.	
Environment 3	Complete
Used by Market Operations for Training (Full CMS Stack) Decommission completed February 2020.	
Environment 4	Complete
Production Support in Sync with [REDACTED] (Full CMS Stack) Decommissioned upon acknowledgement of M+13 Closure and is complete.	
Environment 5	Complete
Used for UUC Verification (Restricted Environment – MA only) Decommission completed February 2020.	
Environment 6	Complete
Used for Communication Channel Qualification Testing (CCQT) And, External Access for testing (Full CMS Stack) Decommission completed February 2020.	

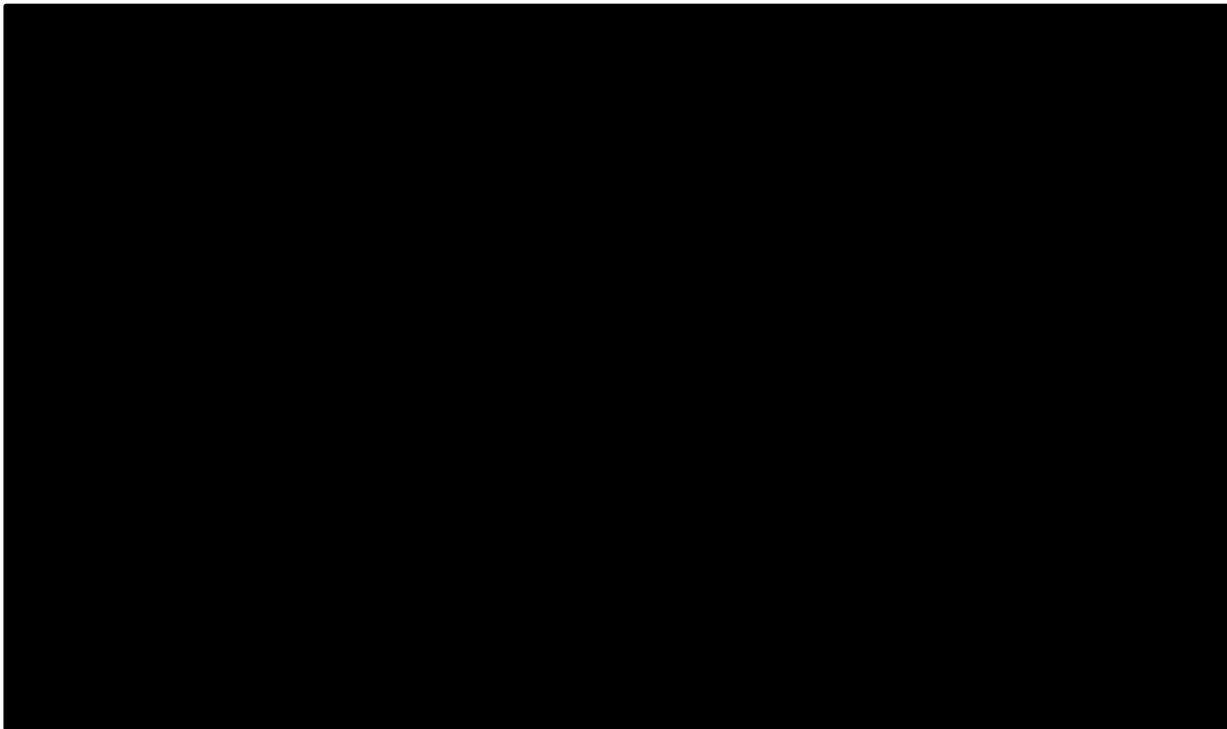
4.1.3 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



4.1.4 Other Applications

Applications which are not in the CMS stack but are utilised heavily in the day to day running of the legacy market and resided within the environment. These systems have been moved or decommissioned as part of the process.

Decommissioning Project & Description	Decommissioning Status
[Redacted] site: 'The Market'	Complete
Heavily used by market operations for check lists, documentation, meeting minutes etc. Several folders identified as necessary to maintain support of the Legacy SEM system and moved over to the [Redacted], the remaining folders have been decommissioned	
[Redacted]	Complete
Used for email and interlinked to [Redacted]	
SupportWorks	Complete
Used by IT Support and Market Helpdesk for Participant communication	
Market Helpdesk Portal	Complete
Used in case of LCF	
[Redacted]	Complete
Used as contingency in case of LCF	
[Redacted]	Complete
Invoice Printing	
[Redacted]	Complete
Remote access for SEM users and vendors	
[Redacted]	Complete
Access to SEMO VDI used to run the Market	

	Complete
(Belfast and Dublin respectively) Used to access internal and External, and published applications	
	Complete
The SEMO Finance payments and purchasing system. Regulatory requirement and moved over to the post M+13. In the system will have limited access and viewed in read mode	
SEMO Corporate FileShare	Complete
Holds all Without this, no SEM user can log onto their applications. Decommissioned, three directories have been copied over to to provide support and regulatory oversight. A further explanation can be found in 'Section 4.1.6.1 Storage - Corporate Fileshare'.	
SEMO Market FileShare	Complete
Holds all files, reports etc generated by The Market Systems. Decommissioned, three directories have been copied over to to provide support and regulatory oversight. A further explanation can be found in 'Section 4.1.6.2 Storage - CMS Fileshare'.	

*Note: Decommissioned as applied above means backed-up and saved, prior to decommissioning.

4.1.5 Storage

All system data has been backed up and archived (a total of 12Tb) but can be restored if required. A number of systems have data that is required for regulatory and/or governance reasons, in these cases the data has been copied into the I-SEM environment () for continued access. This section identifies the systems moved and quantifies the data transferred.

The archived data is held on over 600 tapes.

4.1.6 FileShare

4.1.6.1 Corporate Fileshare

Summary of the storage consumed by the Corporate Fileshare folders in the move to : 515 Gb	
Common directory	Used by Market Ops in support of the market.
Private directory	Used by individual user managing the market and not to be confused with the I-SEM Market.
SEMO Project Directory	Used to support and document the I-SEM programme.

4.1.6.2 CMS Fileshare

The CMS Fileshare contained data going back to 2007 which has been archived. All data transferred across to is taken from 2017-10-01 until the present.

Summary of the storage consumed by the CMS Fileshare folders in the move to : 211 Gb	
MI Reports	Contains all private and public files published from pricing runs that fed into the MPI.
Statements	All Participant settlement and credit statements that fed into the MPI and

The reporting dbase was copied over into the cloud and the selection criteria have been adjusted to allow for a longer elapse range.

It should be noted that the additional legacy webpages have been sanctioned for a two year period and after this time they will be removed. The reporting dbase will be archived at this time.

Summary of storage consumed by the Reporting Dbase move to the Cloud: 700 Gb

4.1.11 Website

As noted in Section 3, the Legacy SEM website was fully functional until 12th August 2020.

A subset of Legacy SEM data including Dynamic Reports, Historic Modification and Publications has been transitioned and made available on the SEM website¹⁵ as part of the decommissioning process for the legacy SEM. The relocation of this data and the generation of new pages on the SEM website allowed continued access to this important historical information whilst enabling the removal/decommissioning of the old hardware. The move also standardised the outputs of the Legacy data (e.g. the Historic Modification look and report in the same way as the SEM Modifications).

A Market Message issued to participants on the 13th August once the data transition was complete advising MPs the legacy SEM website was no longer accessible and legacy SEM data can now be accessed through the SEM website. This information is still available.

4.2 Summary of Servers Equipment decommissioned

To support the systems outlined in this document the environment uses; Servers, Load Balancers, SAN boxes and Clients. The following is a high-level break-down of the objects being decommissioned.

Decommissioned by April 2021	
Clients	151
Firewall	14 (approx. 22 rules)
Servers	377
- Physical	221
- Virtual	125
- Switch/routers	22
- SAN	4
- Tape drives	2
- Load Balancers	3

¹⁵ <https://www.sem-o.com/legacy/> - Legacy SEM Market data can be found via the Dynamic Reporting section.

Appendices

Appendix 1: Final Legacy SEM K-factor

Appendix 2: Final Legacy SEM Market Audit Report 2019/2020

Appendix 1: Final Legacy SEM K-factor

The table below sets out the final k factor for the legacy SEM in 2020 prices. It is noted that this k factor will be formally submitted, indexed to March 2021 prices, as part of the normal arrangements under the Annual K factor and Tariff process for the setting of SEMO Revenues.



Appendix 2: Final Legacy SEM Market Audit Report 2018/2019

3.14 Legacy SEM Resettlement

Relevant TSC Section(s)	Agreed Upon Procedure	Work Performed and Factual Findings	SEMO Response
Section A	<ul style="list-style-type: none"> For settlement dates previously tested in the testing period ending 30 September 2018 obtain updated metering data, participant information reports, settlement statements and settlement invoices for resettlement runs performed during the period 1 October 2018 – 31 December 2019. 	<p>The required data was obtained for the following dates previously tested:</p> <ul style="list-style-type: none"> 19 September 2017 (M+13) 2 April 2018 (M+13) 23 August 2018 (M+4 and M+13) 	-

Relevant TSC Section(s)	Agreed Upon Procedure	Work Performed and Factual Findings	SEMO Response
	<p>Recalculate the resettlement of the following charges/payments and compare to SEMO calculated values:</p> <ul style="list-style-type: none"> Energy Charge and Payments Capacity Charge and Payments Uninstructed Imbalances Any other charges/payments affected by previously reported issues <p>Document SEMO's response to any differences over 1%.</p>	<p>The specified calculations were re-performed and compared to SEMO reported values. No exceptions were noted for any of the dates tested and the differences previously identified in the D+4/M+4 testing of Loss of Load Probability for 19 September 2017 have now been corrected in SEMO results.</p>	

3.15 Transitional Arrangements

Relevant TSC Section(s)	Agreed Upon Procedure	Work Performed and Factual Findings	SEMO Response
Section C	<ul style="list-style-type: none"> Compare the participant register from the [legacy] SEM and new SEM arrangements. Identify any participants in the new arrangements valid on the Amendment Date that were not present in the [legacy] SEM and document SEMO's explanation for how these participants were registered. Document the transitional process published by SEMO per section 5 including key checks/reconciliations performed by SEMO. For a sample of 5 units subject to transition document the process. Compare the registration data subject to migration between the [legacy] and new SEM systems and record any discrepancies. Document explanations from SEMO for any discrepancies found. Obtain a copy of SEMO's "Lessons Learnt" / "Project Closure" report from the transition to I-SEM. Document the key inputs to the report including stakeholders who provided input from within SEMO and wider market. 	<ul style="list-style-type: none"> The participant register from the legacy and new SEM arrangements was obtained and compared as set out in the Agreed Upon Procedure. No participants in the new arrangements valid on the Amendment Date were identified that were not present in the [legacy] SEM register. A copy of the transition process published by SEMO was obtained and the process steps identified. For a sample of units as set out in the Agreed Upon procedure we confirmed each step had been performed. We identified that no Commencement Notices have been issued for units that transitioned or went effective at the Go-Live. The Transitional Registration Plan (published by SEMO per TSC Part C, section 5 (1.10.3) states "A Commencement Notice is issued by the Market Operator to a Participant officially confirming that a Unit has met all pre-requisites and can trade in the I-SEM from the effective date specified in the Notice". 	<p>Commencement Notices were not issued as part of the transitional arrangements as all units went effective when the market went live.</p>

Relevant TSC Section(s)	Agreed Upon Procedure	Work Performed and Factual Findings	SEMO Response
	<ul style="list-style-type: none"> For each major recommendation / change proposed in the Lessons Learnt report inspect documentation of relevant SEMO Processes and project plans/documentation for current Market System stabilisation activity and document if these have been updated to reflect the recommendations. 	<ul style="list-style-type: none"> A lessons learnt report was completed in December 2018. A copy of the report was obtained and examined as required in the Agreed Upon Procedure. The report was based on interviews and workshops with all teams within SEMO, including the external Client Side Advisory team who were part of the project. Fourteen key themes were identified in the report covering areas of Governance, People, Programme, Testing and Vendors. Of these seven are not relevant/applicable for the stabilisation phase but rather relate to items for future similar projects. The remaining seven have been applied to the stabilisation phase and/or business as usual activities where appropriate. 	

