



Market Operator's Annual Performance Report

October 2018 – September 2019

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Introduction

On 1 October 2018 the Integrated Single Electricity Market (I-SEM) went live and is now the enduring operational electricity market in Ireland and Northern Ireland. The market went live after an extensive period of testing and trialling. Since Go-Live there have been four system updates and code releases to address known defects. The market went live with the knowledge they would be addressed over time.

For the first 12 months the market has been in post-production mode whereby there was a learning curve for all involved, a high level of post Go-Live support by SEMO for the IT systems and for the Market Participants themselves. The performance of the market has improved over the course of the year; the Balancing Market has seen some price volatility and is where the majority of queries have arisen, however it has also seen a steady progress over the year. From Go-Live a number of manifest errors were found within the Imbalance Price calculation. As a result of system defects in the *'Repricing Solution'¹*, the Market Operator has been unable to recalculate and republish updated prices. The Market Operator remains committed to delivering solution to recalculate prices and expects to begin Repricing by the end of Quarter 1, 2020.

Due to the high volume of settlement systems issues and defects which had to be dealt with after I-SEM go-live, M+4 resettlement did not start as per the settlement calendar and instead the first publication of M+4 was issued on 5 July 2019. Market Operations envisaged an 18 month period of settling into the new market arrangements and progression is continuing to occur along this timeline.

It is anticipated that two further code releases will occur in 2020 and SEMO will then move to bi-annual releases which will be planned and agreed in advance and provide clarity on the change programme to all stakeholders.

¹ The software solution that SEMO will use to recalculate and republish Imbalance Settlement Prices.

Executive Summary

This Single Electricity Market Operator's (SEMO) performance report covers the first year of operation from 1st October 2018 through to 30th September 2019.

SONI Ltd. and EirGrid plc, operating as the Single Electricity Market Operator (SEMO) are required under their respective Market Operator Licenses to provide an annual report to the Regulatory Authorities on Market Operator Performance.

This report is also published in accordance with section B16.2 of the Trading and Settlement Code and the SEM Committee decision paper issued for the Legacy SEM market.

During the first year of the Integrated Single Electricity Market:

- 2172 general queries were received and 2114 general queries were resolved, with 58 open as of September 2019.
- 298 Formal Settlement queries were raised; 237 were been upheld, 49 not upheld, 8 rejected and 4 unresolved as of September 2019.
- 12 Market Operator User groups took place, 8 hosted in Dublin and 4 hosted in Belfast.
- 18 Parties joined the Market and 46 units went effective in the Market.
- 11 Modification of the Trading and Settlement Code were approved.
- Daily Participant calls were held from the beginning of the market to keep Market Participants informed on Market Operator updates. In August 2019 the frequency of the daily calls reduced to Mondays and Thursdays with the option of additional calls if needed. This has been a successful transition.

This is a once off annual report which represents both the Market Operator's Performance for financial year 2018/2019 as well as the Annual SEMO report for financial year 2018/2019.

The intention is for SEMO and the Regulatory Authorities to consult on the framework for reporting in the coming months and to implement any revisions where necessary.

Quarters will be defined according to the financial year as follows:

Q1 = 1st October to 31st December

Q2 = 1st January to 31st March

Q3 = 1st April to 30th June

Q4 = 1st July to 30th September

The four main categories of performance metric covered are:

- Service Delivery
- Change Request Management
- General Market Information
- Manage Stakeholders

1 Service Delivery

1.1 Trading and Settlement Code Breaches

Breaches of the Trading and Settlement Code were noted in the following areas:

Trading and Settlement Code Breaches			
Area		Major	Minor
Data Providers		-	33
Market Participants	Clearing	131	-
	Credit Risk Management	14	-
Market Operator	Balancing Market	12	343
	Clearing	-	-
	Credit Risk Management	-	-
	Other	-	-
Total		157	378

Table 1 – Trading and Settlement Code Breaches

Further details of each of the Trading and Settlement Code breaches noted above are set out in Appendix A.

Key:

Major Breach - late publishing of settlement documents, default notices issued for non-payment or similar.

Minor Breach - deadlines not met, but without any financial implication to Participants. This includes late posting of settlement runs.

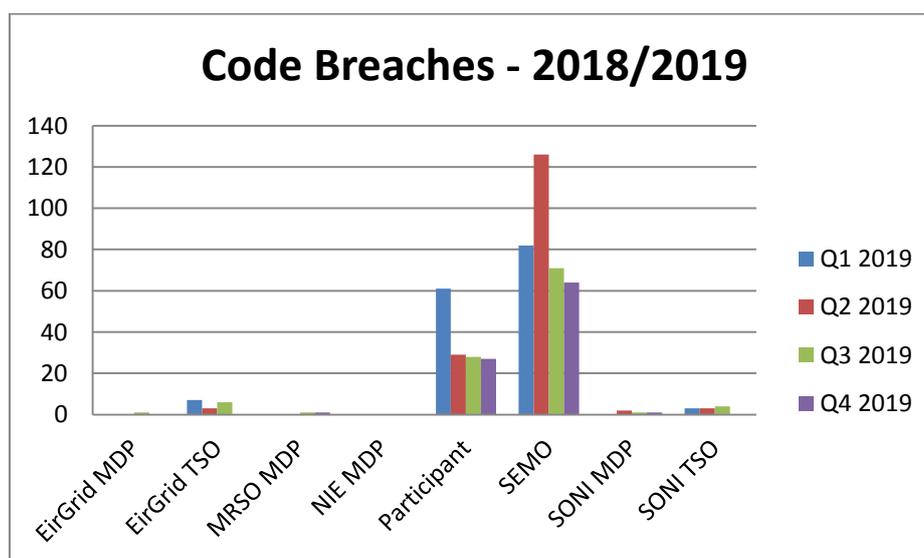


Figure 1 – Trading and Settlement Code breaches

During the first year of market, SEMO encountered issues that resulted in delays to Settlement Runs and Settlement Documents. The below table provides further detail on the issues that caused the delays, as well as key mitigations carried out.

Description of Categories:

Systems Issues - Includes settlement systems performance, bill case processing timelines, Instruction Profiler application issues, General System Failure impacts, system defects impacts and System outage impacts.

Data Issues - Includes MDP delays, re-submission of data from MDPs (Metered data, Dispatch instructions and Actual Availabilities) and Registration issues.

(Other) Analysis of data required - Requirement for additional pro-active analysis of data before publications released

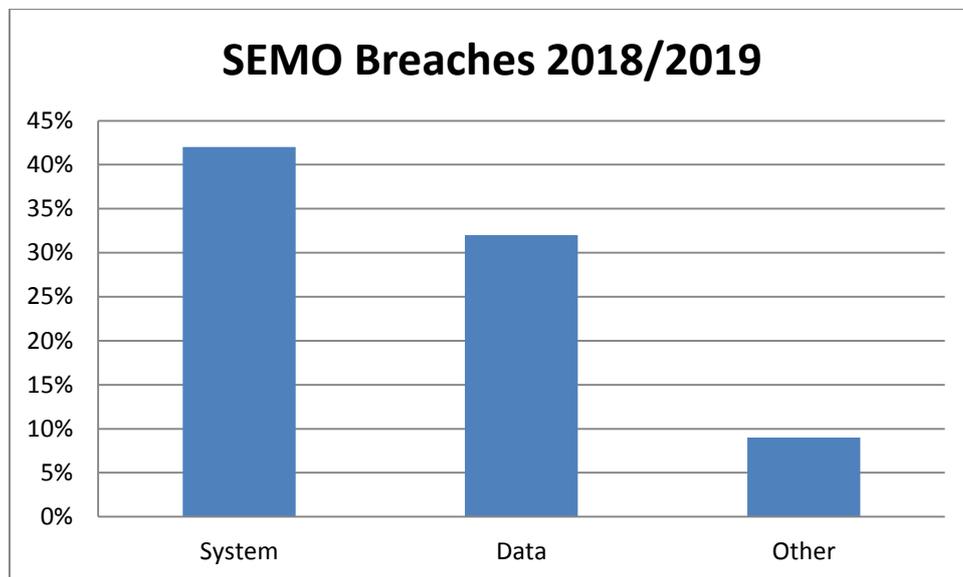


Figure 2 – SEMO Breaches

1.2 Balancing Market Settlements

1.2.1 Indicative and Initial Settlement Runs

The following series of tables and graphs represent the publications of Indicative and Initial Settlement runs. Every working day SEMO is obliged to issue Indicative and Initial settlement run statements.

Settlement Runs completed 01/10/2018 - 30/09/2019		
	Indicative	Initial
On Time	165	222
Same Day Late	62	74
> 1 Day Late	138	69
Total runs	365	358

Table 2 - Settlement Runs completed 01/10/2018 - 30/09/2019

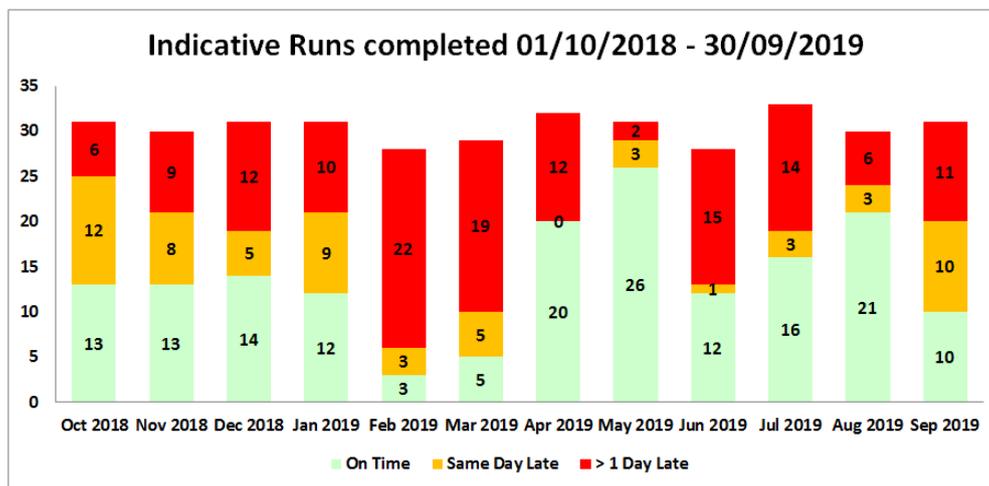


Figure 3 - Indicative Settlement Runs Completed

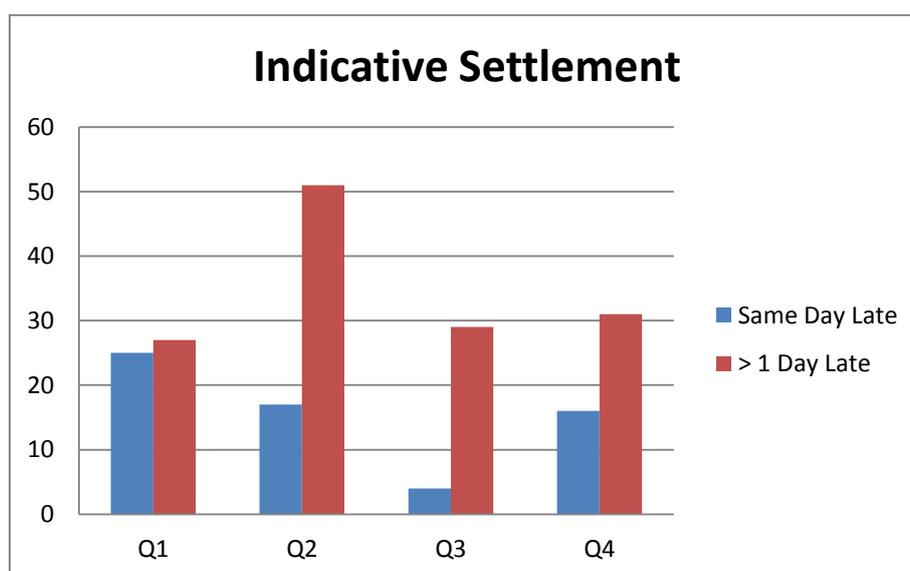


Figure 4 - Delayed Indicative Settlement Runs by Quarter

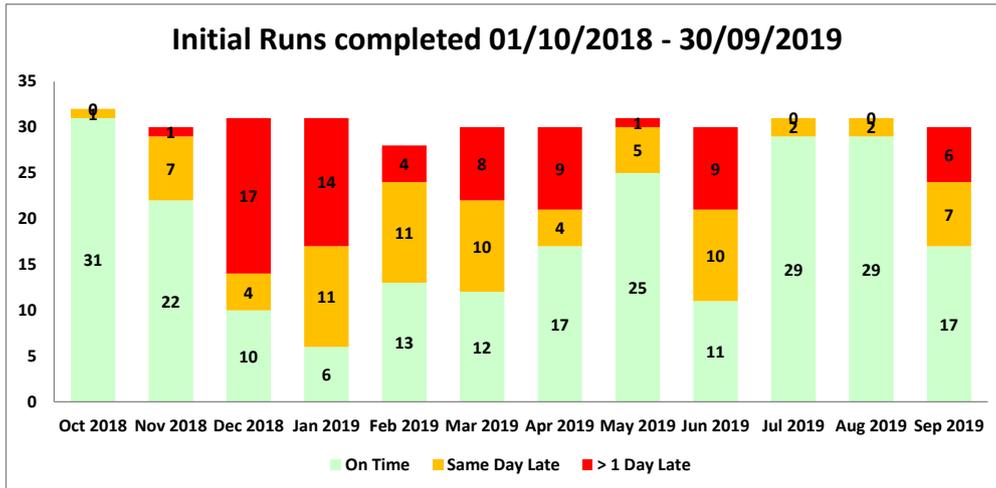


Figure 5 - Initial Settlement Runs Completed

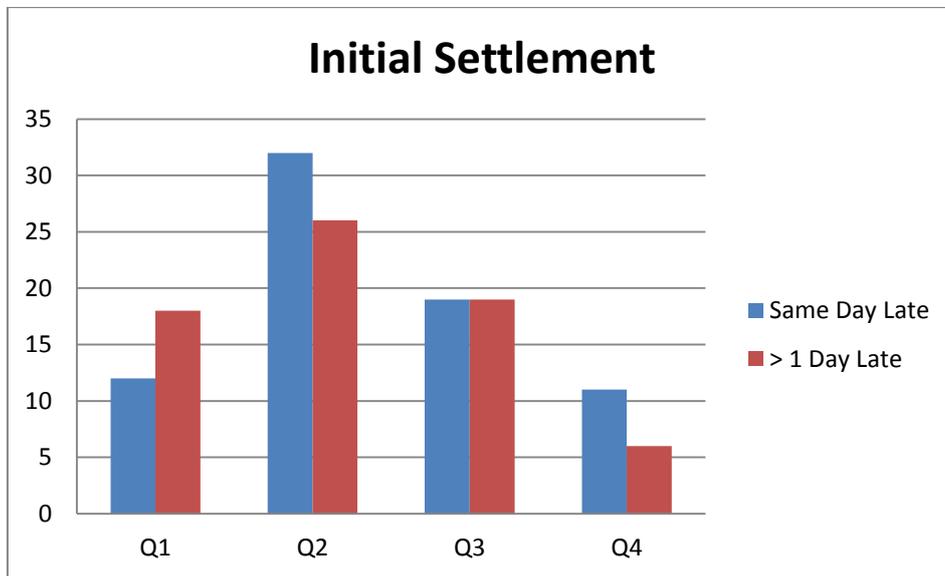


Figure 6 - Delayed Initial Settlement Runs by Quarter

1.2.2 Settlement Documents

The following table represents the publications of Initial Settlement Documents. SEMO is obliged to issue Initial Settlement Documents 5 working days after the last day of the billing period.

Settlement Documents completed 01/10/2018 - 30/09/2019	
	No. of Weeks
On Time	40
Same Day Late	6
> 1 Day Late	6
Total runs	52

Table 3 - Settlement Documents completed 01/10/2018 - 30/09/2019

1.2.3 Planned Re-Settlement M+4 & M+13

Due to the high volume of settlement systems issues and defects which had to be dealt with after I-SEM go-live, M+4 resettlement did not start as per the settlement calendar and instead the first publication of M+4 was issued on 5 July 2019.

M+4 Resettlement has been issuing one week per week since that date. As of the 30 September 2019, M+4 was processed up to Week 51 2018 (23/12/2018 – 29/12/2018) with plans to perform M+4 catch-up processing over the coming months.

M+13 Resettlement was not scheduled to commence during 01 October 2018 – 30 September 2019.

1.2.4 Ad-hoc Repricing and Ad-Hoc Resettlement Runs

Ad Hoc Repricing did not take place during 1st October 2018 - 30th September 2019, this is currently under consultation.

Ad Hoc Resettlement did not take place during 1st October 2018 - 30th September 2019, this is currently in review with SEMO Settlements.

1.2.5 Administration of Credit Cover

The SEM has been collateralised according to the T&SC provisions for the whole period from 1st October 2018 to 30th September 2019. At times, the collateralisation may be slightly less than the calculated requirement due to the time allowed by the T&SC for Participants to comply with a Credit Cover Increase Notice (CCIN). There were 14 CCINs that were not fully honoured within the two days allowed as per T&SC.

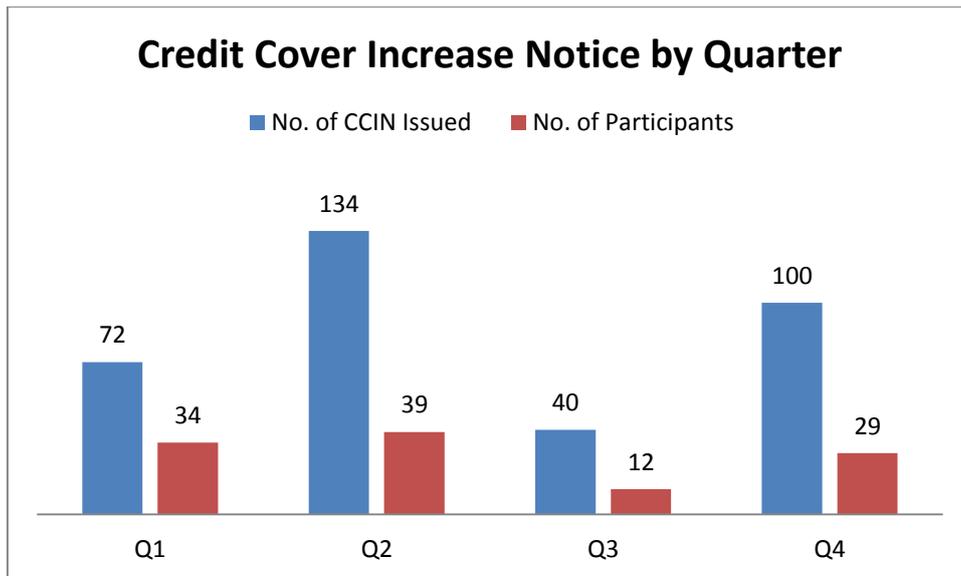


Figure 7 - Credit cover increase notices issued by quarter

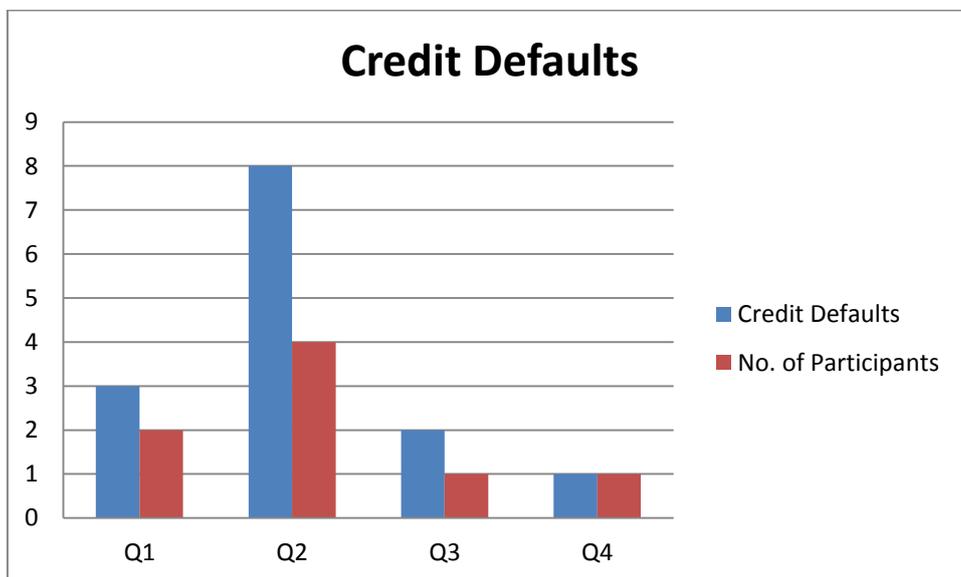


Figure 8 - Credit Defaults issued by quarter

1.3 Financial Statistics

1.3.1 Cash Flow positions for Balancing Market, Capacity Market and Market Operator Charges

The Balancing Market reflects actions taken by the TSOs to keep the system balanced, for example, for differences between the market schedule and actual system demand. It determines the imbalance settlement price for settlement of these balancing actions. This includes any uninstructed deviations from a participant's notified ex-ante position. All data displayed in this section displays M+4 data from 1 October 2018 to 29 December 2018 and Initial data from 3 February 2019 to 30 September 2019.

- Positive values indicate Payments were greater than Charges
- Negative values indicate Charges were greater than Payments
- All figures are in Euro

Balancing Market Cash Flow Position		
Component	Component Name	€ Payment/Charge
CPREMIUM	Fixed Cost Payment or Charge	€108,321,090
CFC	Premium Payment	€104,631,498
CDISCOUNT	Discount Payment	€98,723,928
CIMB	Imbalance Payment or Charge	€27,082,131
CDIFFPIMB	Imbalance Difference Payment	€9,256,135
CAOPO	Bid Price Only Accepted Bid Payment or Charge	€1,846,011
CABBPO	Offer Price Only Accepted Offer Payment or Charge	€914,934
CTEST	Testing Charge	-€212,331
CCA	Currency Adjustment Charge	-€510,851
CDIFFCWD	Within-day Difference Charge	-€1,986,574
CUNIMB	Uninstructed Imbalance Charge	-€3,082,764
CCURL	Curtailed Payment or Charge	-€4,211,108
CSOCDIFFP	Difference Payment Socialisation Charge	-€7,253,156
CDIFFCNP	Non-performance Difference Charge	-€8,323,902
CREV	Residual Error Volume Charge	-€23,434,018
CIMP	Imperfections Charge	-€177,989,729
Total		€123,771,293

Table 4 - Balancing Market Cash Flow Position

The Capacity Market is designed to help ensure that the generation capacity in Ireland and Northern Ireland (including Storage, Demand Side Units and Interconnector capacity) is sufficient to meet demand and that the regulatory approved generation adequacy standard is satisfied.

Capacity Market Cash Flow Position		
Component	Component Name	€ Payment/Charge
CCP	Capacity Payment	€325,268,561
CCC	Capacity Charge	-€315,354,436
Total		€9,914,125

Table 5 - Capacity Market Cash Flow Position

Market Operator charges are used to recover the costs of administering the market.

Market Operator Charges		
CMOAV	Fixed Market Operator Charge Supplier Units	-€23,967
CMOAU	Fixed Market Operator Charge Generator Units	-€890,739
CVMO	Variable Market Operator Charge	-€16,979,866
Total		-€17,894,572
CMOAV	Fixed Market Operator Charge Supplier Units	-€23,967

Table 6 - Market Operator Charges

1.3.2 Financial Changes between Initial Settlement and Subsequent Reruns

M+4 Resettlement has been completed for Settlement Dates 01/10/2018 to 29/12/2018. There have been three Ad hoc resettlement runs for Settlement Dates 01/10/2018 to 30/11/2018. All M+4 resettlement runs were completed after Ad hoc runs therefore M+4 is the most up to date data. The tables below display the differences between the Initial run and the most recent resettlement run (M+4).

Balancing Market Resettlement			
Component	Initial	M+4	Difference
CABBPO	€2,216,084	€150,282	-€2,065,803
CAOOPO	€913,182	-€89,146	-€1,002,328
CCA	-€133,710	-€129,522	€4,188
CCURL	-€2,173,556	-€2,085,605	€87,951
CDIFFCNP	-€1,476,623	-€1,300,365	€176,259
CDIFFCWD	-€1,872,212	-€1,204,840	€667,372
CDIFFPIMB	€1,353,064	€368,003	-€985,061
CDISCOUNT	€28,198,398	€25,486,402	-€2,711,995
CFC	€10,366,020	€46,264,655	€35,898,635
CIMB	€8,080,987	€12,155,609	€4,074,622
CIMP	-€45,546,388	-€45,179,236	€367,152
CPREMIUM	€39,528,493	€36,006,889	-€3,521,604
CREV	-€6,323,215	-€6,219,335	€103,880
CSOCDIFFP	-€1,869,067	-€1,851,475	€17,593
CTEST	-€74,128	-€66,544	€7,584
CUNIMB	-€980,441	-€531,012	€449,429
Total	€30,206,887	€61,774,760	€31,567,873

Table 7 - Balancing Market Resettlement

Capacity Market Resettlement			
Component	Initial	M+4	Difference
CCC	-€81,263,793	-€80,498,741	€765,052
CCP	€79,070,717	€79,692,535	€621,818
Total	-€2,193,076	-€806,205	€1,386,870

Table 8 - Capacity Market Resettlement

Market Operator Charges Resettlement			
Component	Initial	M+4	Difference
CMOAU	-€149,395	-€149,303	€92
CMOAV	-€3,890	-€3,889	€1
CVMO	-€4,345,230	-€4,310,203	€35,027
Total	-€4,498,515	-€4,463,395	€35,120

Table 9 - Market Operator Charges Resettlement Charges Resettlement

Financial Statistics Disclaimer: the above information represents settlement data aggregated during the year in assessment, which may be different to the accounting data audited post settlement period.

1.4 Imbalance Price

1.4.1 Imbalance Price

There are two types of Imbalance Price referred to in this section; the Imbalance Price which is the price associated with a 5 Minute Imbalance Pricing Period; and secondly, an Imbalance Settlement Price which is calculated as the average of six "5 Minute Imbalance Prices" for a corresponding 30 minute Imbalance Settlement Period.

Figure 9 below shows the Imbalance Settlement Prices for the entire year, from October 2018 to September 2019. All system calculated Imbalance Settlement Prices are published on this graph; both the Market Back up Price and the 30 minute average of the Imbalance Price. The average Imbalance Settlement Price during this annual period was €53.23. The graph has been restricted to €2,000; however, there was one Imbalance Settlement Price that exceeded this value, priced at €3,773.69.

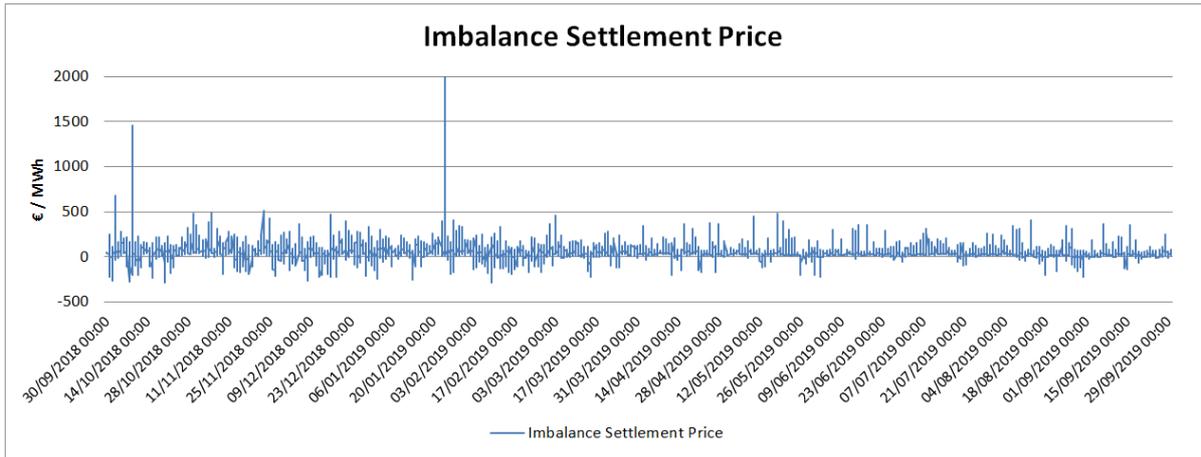


Figure 9 – Imbalance Settlement Price

Figure 10 below shows the Quantity Weighted Ex-Ante Price as a comparator to the Imbalance Settlement Price. The Quantity Weighted Ex-Ante Price is the value used by SEMO as the Market Back Up Price, should the Market Operator not be able to calculate an Imbalance Settlement Price; based on the average of the six Imbalance Prices for a given Imbalance Settlement Period. The graph has been restricted to €1,000; however, there were four Imbalance Settlement Prices that exceeded this value, one on the 9 October 2018 (€1,453.09) and three on the 24 January 2019 (highest; €3,773.69).

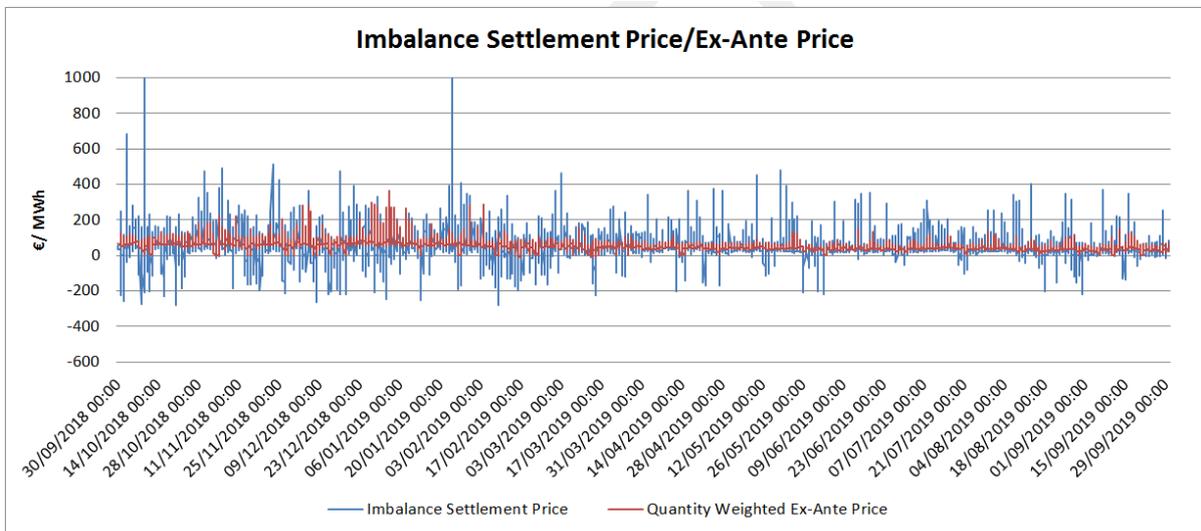


Figure 10 – Imbalance Settlement Price & Quantity Weighted Ex-Ante Price Comparison

Figure 11 below highlights the monthly Highest, Lowest and Average half-hour Imbalance Prices for the period October 2018 to September 2019.

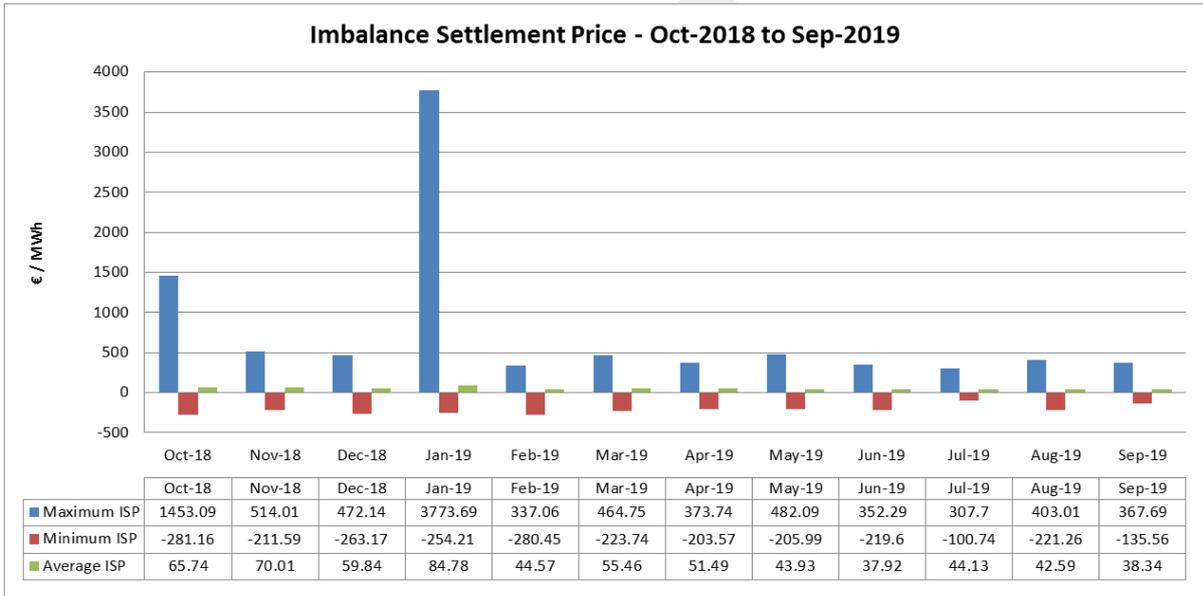


Figure 11 –Highest, Lowest and Average Imbalance Prices

1.4.2 Exchange Rate

The SEM is a dual currency market. Units based in Northern Ireland submit their Offer Data in GBP. All GBP Offer Data is converted to EUR as part of the Balancing Market price setting process. The GBP to EUR exchange rate is captured below in Figure 12.

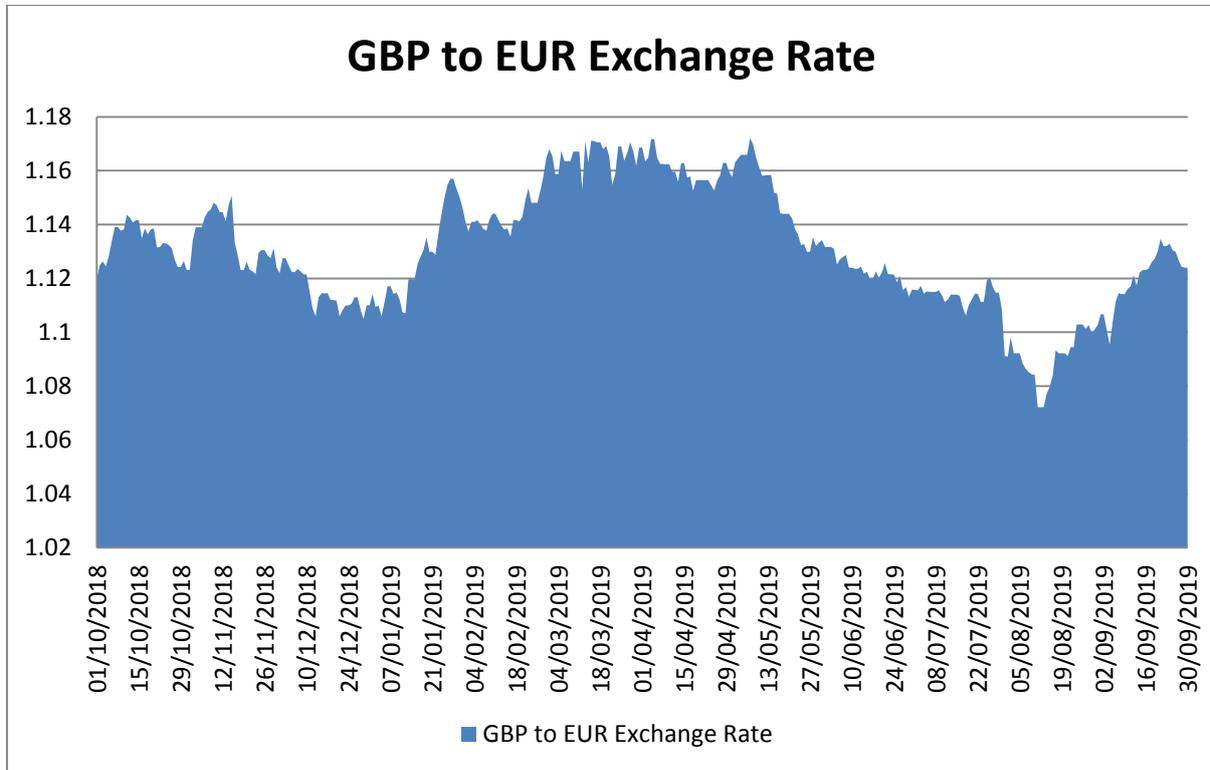


Figure 12 –GBP to EUR Exchange Rate

1.4.3 Imbalance Price Generation and Backup Price

Figure 13 below highlights how many instances in which the Market Back up Price was published. Included in this table is the count of the Market Back up Price. This is calculated automatically by the Market Systems in the event that one or more 5 minute Imbalance Prices have not been calculated for an Imbalance Settlement Period. This figure also includes the Ex-Ante Back Up Price which is used as a contingency in the event of failure of the automatic Market Back Up Price.

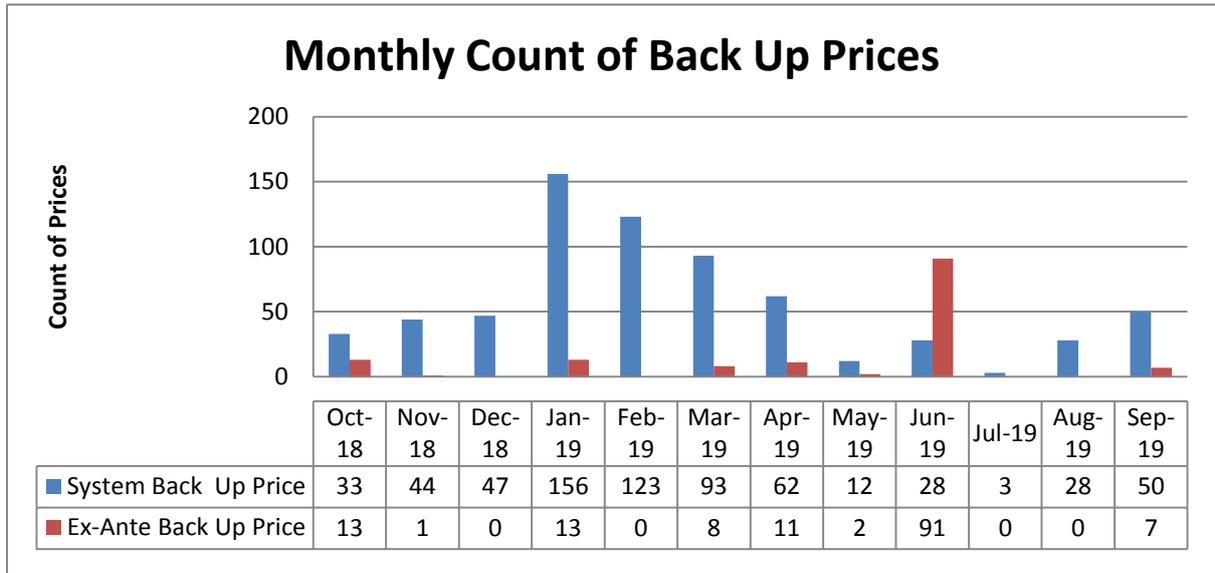


Figure 13 - Number of Backup Prices used October 2018 to September 2019

Figure 14 below highlights how many five minute Imbalance Prices were missed in each calendar month. As outlined above, if one or more five minute Imbalance Prices are not published in one Imbalance Settlement Period, then the Market Back up Price is used as the corresponding Imbalance Settlement Price.

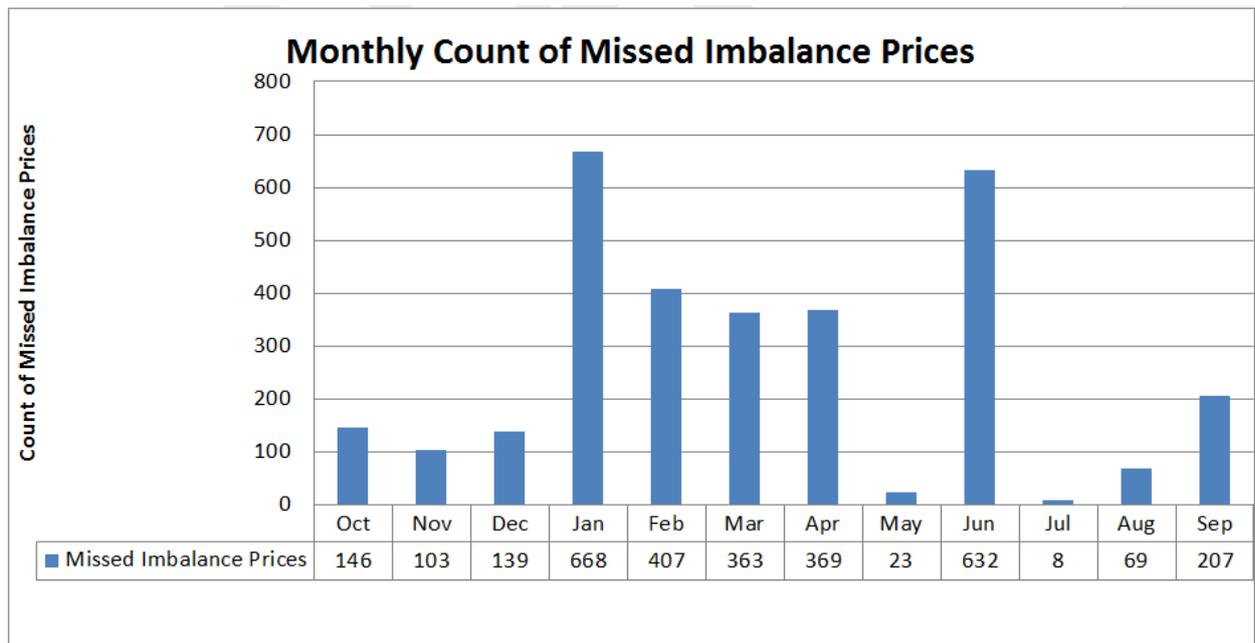


Figure 14 – Summary of Missed Imbalance Prices

1.5 Central Systems

1.5.1 System Availability

The table below gives the system availability value for the period of October 2018 to September 2019 as well as the breakdown per system.

System / Application	Annual Availability %
Settlements (CSB)	99.95
MI	99.75
MA	99.78
Reporting	99.75
Website	100
Average System Availability	99.84

Table 10 - Annual Availability

1.5.2 Limited Communication Failure (LCF), General Communication Failure (GCF) and General System Failure (GSF)

There were two LCFs encountered during this period with respect to the submission of Offer Data.

- A Limited Communication Failure was declared on the 26th January 2019, the Market Participant submitted an xml to the Market Operator to load in back up mode. The xml failed validation; no further attempts were made by the Market Participant to resubmit their Offer Data via back up mode.
- A Limited Communication Failure was declared on 6th March 2019. The Market Participant provided an xml to the Market Operator, which was successfully submitted on their behalf.

There was 1 GCF during this period which occurred in the month of May 2019.

- The GCF was in relation to connectivity issues with the MPI which was identified at 10:11AM on 01/05/2019. This was investigated as a matter of urgency. A Market Message was issued to participants regarding this and the Balancing Market systems were fully restored at 11:12AM.

There was 1 GSF during this period which occurred in the month of June 2019

- At 01:49 am on June 12th the Market Systems experienced a GSF resulting in the outage of all Market Services to all stakeholders. Automated alerting initially identified the issue to our 24x7 Support Desk who immediately mobilised the relevant EirGrid and system vendor support teams as per our Incident Management Process. These teams worked through the night and service was restored at approximately 07:00am. At the time of the incident the

Dublin site was the designated primary site, however to restore service as quickly as possible our secondary site in Belfast was utilised. Following remedial work and initial investigation at the Dublin site, all services were failed back to our primary site at 11:00am on June 13th, resulting in a further outage of approximately 2 hours.

2 Change Request Management

2.1 System releases

Once defects have been raised, the issue is assessed in the wider defect pool and assigned to a code drop in line with its severity and priority. Drop dates to test have been agreed with our vendor, with release to production plans provided based on successful test closures. Please see below the Releases from vendor that have gone into production since Go-Live.

Release A – Deployed to production on the 29th of January 2019

Release B – Deployed to production on the 26th of March 2019

Hotfixes – Ad Hoc deployment to Release B

Release C – Deployed to production 11th of June 2019

2.2 Modifications

2.2.1 Balancing Market – Trading & Settlement Code Modification Management

The tables that follow give an overview of the activity that has taken place between 1st October 2018 and 30th September 2019. Table 11 shows the dates and number of Modifications Committee Meetings and Working Groups that took place over this period.

Meeting	Date	Location
87	24th October 2018	Conference Call
88	12th December 2018	Dublin
89	20th February 2019	Belfast
90	11th April 2019	Dublin
91	18th April 2019	Conference Call
92	27th June 2019	Belfast
93	22nd August 2019	Dublin
Mod_03_18 Working Group 1	24th January 2019	Dublin
Mod_03_18 Working Group 2	9th May 2019	Conference Call
Mod_32_18 Working Group 1	6th February 2019	Dublin
Mod_32_18 Working Group 2	13th March 2019	Dublin
Mod_04_19 Working Group 1	19th September 2019	Dublin

Table 11: Balancing Market: Trading & Settlement Code Modifications Committee Meetings

At the Modifications Committee Meetings, decisions are made with regard to progressing various Modification Proposals. Table 12 gives an outline of the amount of activity that has taken place over this annual period.

Modification Proposal Activity	Total
Raised	21
Alternative Versions raised	8
Withdrawn	1
Deferred	5
Extension Granted	1
Recommended for Approval	13
Recommended for Rejection	2
Further Work Required	0
Approved	11
Rejected	1

Table 12 - Modification Proposal Activity

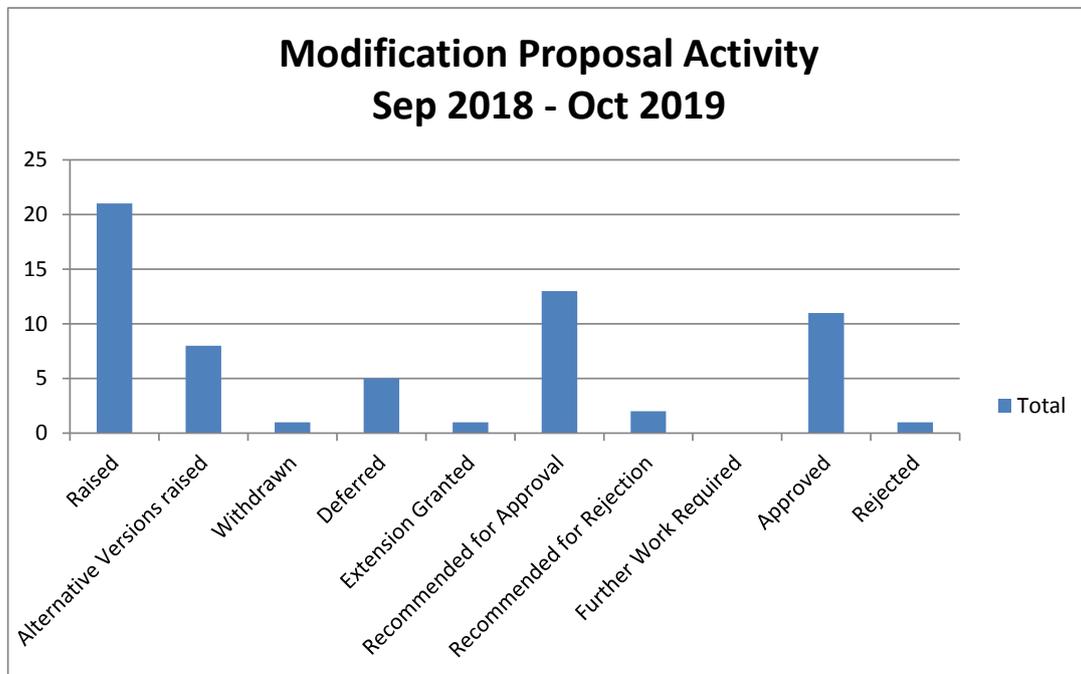


Figure 15 – Modification Proposal Activity

2.2.2 Publication of the Trading & Settlement Code

Version 21.0 of the Trading & Settlement Code was published on 12th April 2019. Forty four Modifications were included in this version, which were noted in the version history of the Trading & Settlement Code.

2.2.3 2019 - Modifications Committee Elections

Modifications Committee Annual Elections commenced in June with a call for nominations for five expiring positions on the Modifications Committee. The following nominees were elected to the Modifications Committee:

Expired Member	New Member	Position
Eamonn O'Donoghue	Alan Mullane	Assetless
Nichola Westlake	Nichola Westlake	Supplier
William Steele	Andrew Burke	Supplier
Kevin Hannafin	Kevin Hannafin	Generator
Cormac Daly	Cormac Daly	Generator

Table 13: Modifications Committee Elections

The election for Chair and Vice-Chair took place in September with Paraic Higgins (ESB) voted as Chair and Andrew Burke (IWEA) elected to the position of Vice-Chair.

2.2.4 Balancing Market - Modifications Process Development

Modification Proposals were considered at bi-monthly Modifications Committee Meetings alternating between Belfast and Dublin or conference call, where applicable (see Table 11). Full details of all modifications progressed during the year are available in the Balancing Market Modifications section of the SEMO website.

Recommended for Approval

- Mod_33_18 Update to Unit Under Test Process
- Mod_34_18 Removal of MWPs for biased quantities and negative imbalance revenue and clarifications to determination of Start Up Costs Final
- Mod_35_18 Clarification to dispute Process
- Mod_36_18 Settlement document and Invoice Terminology clarification
- Mod_37_18 Housekeeping between V20 and V21
- Mod_01_19 Introduction of Negative Interest on credit balances held with the SEM Bank in the name of EirGrid Plc and SONI Ltd t/a SEMO, EirGrid and SONI as System Operators
- Mod_02_19 Removal of difference charges for generators during non RO event periods
- Mod_05_19 Amendment to Uninstructed Imbalance Charge (CUNIMB) to correct for negative price scenarios
- Mod_07_19 Correction to No Load Cost - "and" vs "or" doc
- Mod_08_19 Clarification to Intraday quantity and Payment
- Mod_09_19 Removal of Locational Constraints from Imbalance Pricing Calculation
- Mod_11_19 Continuing Contiguous Operating Period Over Billing Period Boundary and CNLR Clarification
- Mod_12_19 System Service Flag for Demand Site Units

RA Decision Approved

- Mod_33_18 Update to Unit Under Test Process
- Mod_34_18 Removal of MWPs for biased quantities and negative imbalance revenue and clarifications to determination of Start Up Costs Final
- Mod_35_18 Clarification to dispute Process
- Mod_36_18 Settlement document and Invoice Terminology clarification
- Mod_37_18 Housekeeping between V20 and V21
- Mod_01_19 Introduction of Negative Interest on credit balances held with the SEM Bank in the name of EirGrid Plc and SONI Ltd t/a SEMO, EirGrid and SONI as System Operators
- Mod_05_19 Amendment to Uninstructed Imbalance Charge (CUNIMB) to correct for negative price scenarios
- Mod_07_19 Correction to No Load Cost - "and" vs "or" doc
- Mod_08_19 Clarification to Intraday quantity and Payment
- Mod_09_19 Removal of Locational Constraints from Imbalance Pricing Calculation
- Mod_11_19 Continuing Contiguous Operating Period Over Billing Period Boundary and CNLR Clarification

Recommended for Rejection

- Mod_38_18 Limitation of Capacity Market Difference Payments to Metered Demand
- Mod_10_19 Dispatchable Priority Dispatch

RA Decision Rejected

- Mod_02_19 Removal of difference charges for generators during non RO event periods

Withdrawn

- Mod_32_18 Removal of exposure for "in merit" generator units against BOA

3 General Market Information

3.1 Query Management

3.1.1 General Queries

The statistics presented in Table 14 - Helpdesk Query Statistics cover the period of 1 October 2018 to 30 September 2019.

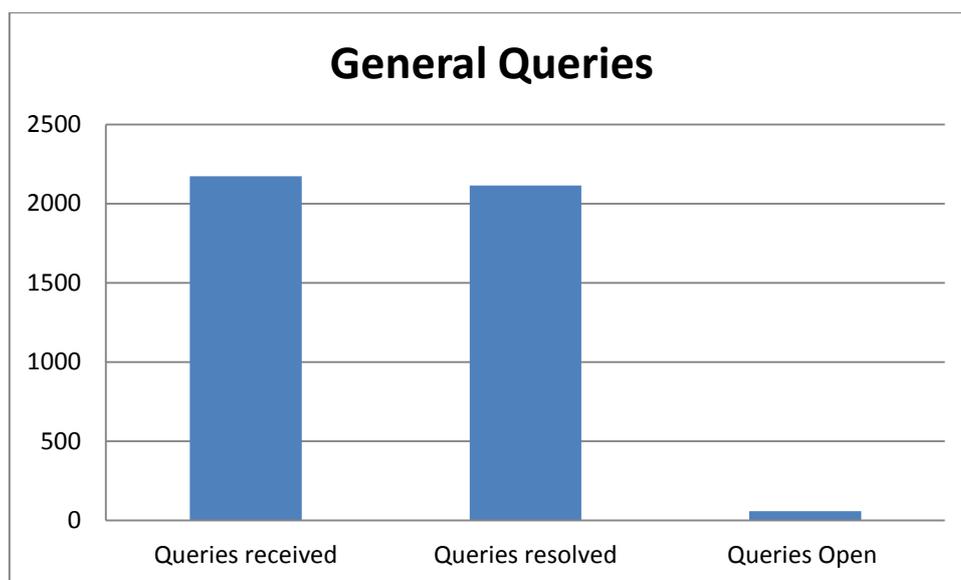


Figure 16 – Helpdesk Query Statistics 01/10/2018 – 30/09/2019

Received	Resolved	Open
2172	2114	58

Table 14 – Helpdesk Query Statistics

Definitions

- Resolved refers to queries resolved within this period, and includes queries raised before this time.
- Open refers to queries raised, but not resolved as of 30th of September 2019.

3.1.2 Settlement Queries

There were 298 Formal Settlement queries raised in October 2018-September 2019; 237 have been upheld, 49 not upheld, 8 rejected and 4 currently unresolved. The 4 Formal queries which are still currently under investigation are listed in Appendix C.

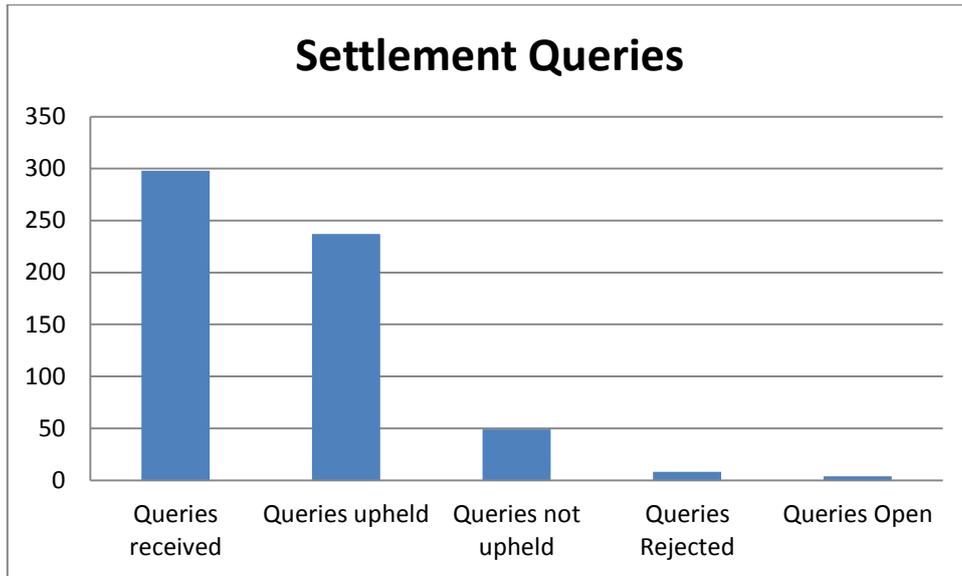


Figure 17 – Settlement Queries 01/10/2018 – 30/09/2019

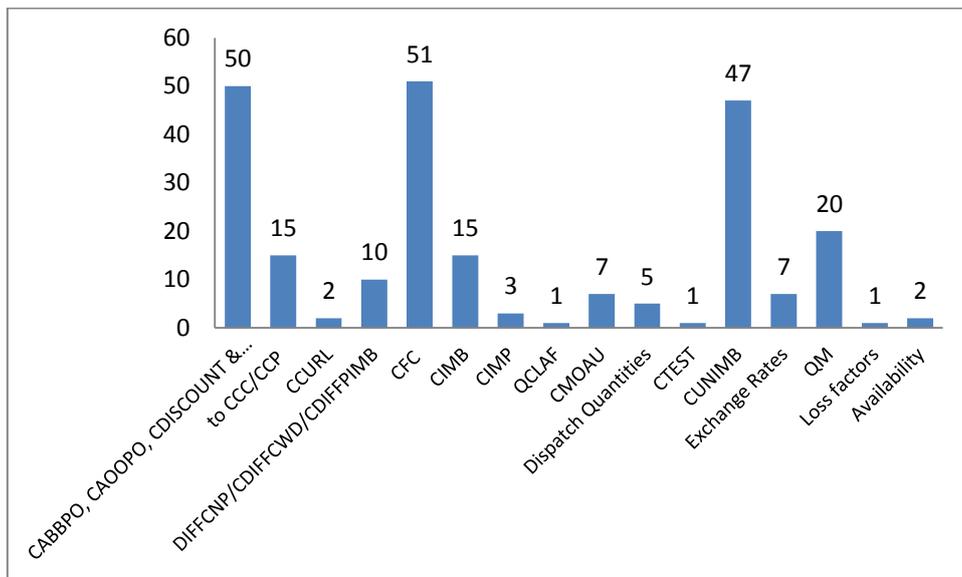


Figure 18 – Upheld Settlement Queries by Topic

Further Details on Settlement queries that have been upheld can be found in Appendix C.

Unresolved Queries

A full list of all unresolved Settlement queries raised during October 2018-September 2019 is contained in Appendix C.

3.1.3 Disputes

Please see below table which represents the volume of Disputes raised during 1 October 2018 to 30 September 2019.

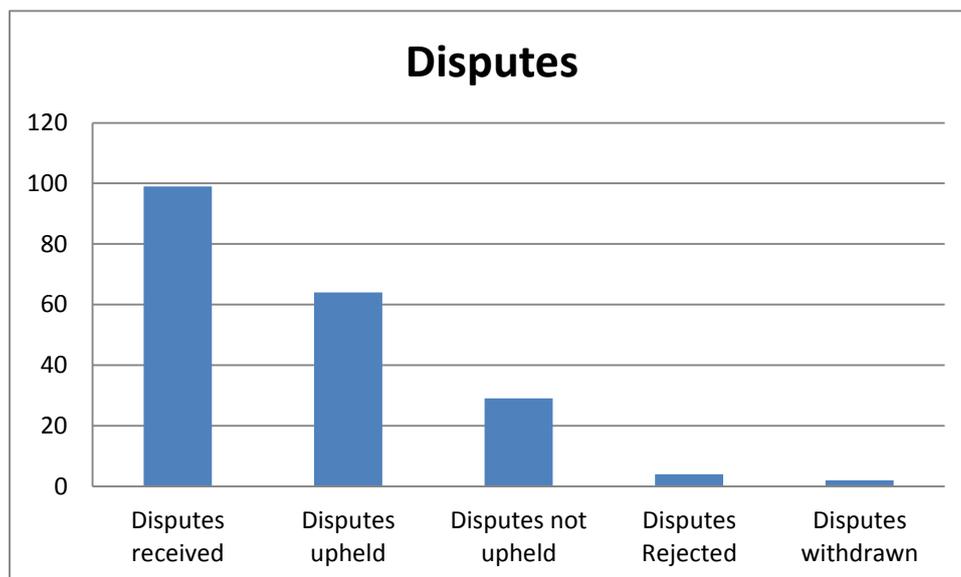


Figure 19 – Disputes 01/10/2018 – 30/09/2019

Topic	Number Of Disputes	Disputes Upheld	Disputes not Upheld	Disputes Rejected	Disputes Withdrawn
General Dispute	2		2		
Pricing Disputes	93	64	25	3	1
Settlement Disputes	3		2	1	
Legal Disputes	1				1

Table 15 – Upheld Dispute Queries by Topic

3.2 Joining and Terminating Parties and Units

Between 1 October 2018 to 30 September 2019 18 Parties joined the Market and 46 units went effective in the Market. Please see below for further details.

3.2.1 Facilitate and Educate participants to accede to the Balancing Market Code

The below Parties joined the Market between 1 October 2018 to 30 September 2019:

Party Name	Party ID	Participant ID	Unit ID
Meitheal na Gaoithe Energy Supply Ltd	PY_000125	PT_400143	SU_400178
In Commodities A/S	PY_000192	PT_400236	AU_400111
Warmhill Limited	PY_000198	PT_400238	GU_403380

Powermart APS	PY_000264	PT_400420	AU_400112
Erova Energy Supply Limited	PY_034045	PT_402539	GU_403740
Statkraft Markets GmbH	PY_034046	PT_402540	GU_403390
Ballincurry Energy Supply Limited	PY_034049	PT_402543	SU_400329
Tramlock Limited	PY_034052	PT_402546	GU_403400
IBERDROLA GENERACION ESPANA, S.A.U.	PY_034065	PT_402556	AU_400113
Iberdrola Ireland Limited	PY_034066	PT_402557	SU_400336
Convex Energy GmbH	PY_034067	PT_402558	AU_400114
Next Kraftwerke GmbH	PY_034068	PT_502511	AU_500109
EDTC LTD	PY_034069	PT_502510	AU_500108
AXPO UK LIMITED	PY_034070	PT_402560	SU_400337
Alphataraxia Europium B.V	PY_034071	PT_502513	AU_500111
Snowgold Limited	PY_034072	PT_402561	GU_403770
Rio Energy Supply Limited	PY_034074	PT_402563	GU_403800
Fallback Limited	PY_034075	PT_402564	GU_403810

Table 16 - Parties who joined the market October 2018 – September 2019

The below units went effective in the Market between 01 October 2018 and 30 September 2019:

Party Name	Party ID	Participant ID	Unit ID
Warmhill Limited	PY_000198	PT_400238	GU_403380
Warmhill Limited	PY_000198	PT_400238	SU_400331
Statkraft Markets GmbH	PY_034046	PT_402540	GU_403390
Powermart APS	PY_000264	PT_400420	AU_400112
Nordic Energy House APS	PY_034051	PT_502504	AU_500104
In Commodities A/S	PY_000192	PT_400236	AU_400111
In Commodities A/S	PY_000192	PT_500125	AU_500105
Tramlock Limited	PY_034052	PT_402546	GU_403400
Tramlock Limited	PY_034052	PT_402546	SU_400332
SSE Airtricity Energy Supply (NI) Limited	PY_000022	PT_500021	GU_503200
SSE Airtricity Energy Supply (NI) Limited	PY_000022	PT_500021	GU_503210
Ballincurry Energy Supply Limited	PY_034049	PT_402543	SU_400329
Erova Energy Supply Limited	PY_034045	PT_402539	GU_403740
Ballycumber Power Supply Limited	PY_000188	PT_400232	GU_402350
Convex Energy GmbH	PY_034067	PT_402558	AU_400114
EDTC LTD	PY_034069	PT_502510	AU_500108
Cenergise Trading Limited	PY_000250	PT_502509	AU_500107
IBERDROLA GENERACION ESPANA, S.A.U.	PY_034065	PT_402556	AU_400113
LCC POWER LIMITED	PY_000099	PT_500057	GU_503310
AXPO UK LIMITED	PY_034070	PT_402560	SU_400337
Next Kraftwerke GmbH	PY_034068	PT_502511	AU_500109
Alphataraxia Europium B.V	PY_034071	PT_502513	AU_500111

Lightfield Ltd	PY_000172	PT_502512	AU_500110
Iberdrola Ireland Limited	PY_034066	PT_402557	SU_400336
Meitheal na Gaoithe Energy Supply Ltd	PY_000125	PT_400143	SU_400178
Erova Energy Supply Limited	PY_034045	PT_402539	GU_403780
EnerNOC Ireland Limited	PY_000088	PT_400090	DSU_403020
EnerNOC Ireland Limited	PY_000088	PT_400090	SU_403000
ElectroRoute Energy Supply Limited	PY_000171	PT_400200	GU_403750
ESB	PY_000030	PT_400030	GU_403760
Brookfield Green Energy NI Limited	PY_000168	PT_500110	SU_500090
Dunman Energy Supply Limited	PY_000160	PT_400185	SU_400200
LCC POWER LIMITED	PY_000099	PT_400137	AU_400117
Statkraft Markets GmbH	PY_034046	PT_502514	AU_500112
Snowgold Limited	PY_034072	PT_402561	GU_403770
Snowgold Limited	PY_034072	PT_402561	SU_400340
Electricity Exchange Limited	PY_000114	PT_400116	DSU_403520
Electricity Exchange Limited	PY_000114	PT_400116	SU_400343
Rio Energy Supply Limited	PY_034074	PT_402563	GU_403800
Rio Energy Supply Limited	PY_034074	PT_402563	SU_400341
EnerNOC Ireland Limited	PY_000088	PT_400090	DSU_403030
EnerNOC Ireland Limited	PY_000088	PT_400090	SU_403010
EnerNOC Ireland Limited	PY_000088	PT_400090	DSU_403040
EnerNOC Ireland Limited	PY_000088	PT_400090	SU_403020
EnerNOC Ireland Limited	PY_000088	PT_400090	DSU_403050
EnerNOC Ireland Limited	PY_000088	PT_400090	SU_403030

Table 17 – Registrations October 2018 – September 2019

The below unit de-registered from the Market between 1 October 2018 and 30 September 2019:

Party Name	Party ID	Participant ID	Unit ID
Castledockrell Supply Ltd	PY_000084	PT_400079	GU_401100
AES Ballylumford Limited	PY_000056	PT_500040	GU_500281
AES Ballylumford Limited	PY_000056	PT_500040	GU_500282
Viridian Energy Supply Limited	PY_000042	PT_500032	GU_500210
Viridian Energy Supply Limited	PY_000042	PT_500032	GU_500220
Castledockrell Supply Ltd	PY_000084	PT_400079	SU_400146
Castledockrell Supply Ltd	PY_000084	PT_400079	SU_400172
Bord Gais Energy Limited	PY_000027	PT_400028	GU_400810
Gortmullan Energy Limited	PY_000129	PT_500077	GU_501270
Gaelectric Sustainable Energy Supply 2 Limited	PY_000163	PT_400195	GU_402020
Energy Trading Ireland Limited	PY_000113	PT_400111	DSU_401390

Table 18 – De-Registrations October 2018 – September 2019

Termination of Participants

There were no terminating parties between 1 October 2018 and 30 September 2019.

Suspension of Participants

No Suspension Orders were issued by the Market Operator between 1 October 2018 and 30 September 2019.

4 Manage Stakeholders

4.1 Structured Approach to Regulatory interface

SEMO and the Regulatory Authorities have developed a good working relationship around a number of formal interactions. The highlights of 2018-2019 are summarised below:

- Yearly parameters for SEM issued according to T&SC requirements
- Ongoing collaboration on the Market Operator reporting structure
- Consultation on the Key Performance Indicators occurred throughout the year
- Ongoing collaboration in the area of Trading and Settlement Code modification with a large volume of proposals delivered as required

4.2 Facilitate Interaction with Customers

SEMO is proactive in interaction with its stakeholders. In the past 12 months SEMO have:

- Facilitated Monthly Market Operator User Groups, more details can be found in Appendix E.
- Held daily Participant calls providing Market Operator updates
- Facilitated calls and meetings with Market Participants on specific topics as required
- Registration calls and meetings for both new and existing Market Participants as required
- Facilitated individual stakeholder meetings as required.
- Implemented regular stakeholder meetings as part of stakeholder plan

Appendix A: Trading and Settlement Code Breaches

Meter Data Provider Breaches

Ops Date Identified	Run Type	Issue	MDP Provider	Issue Type	Description	T&SC Breach	Status
03/10/2018	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 10 mins	Minor	Closed
03/10/2018	D+1	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 27 mins	Minor	Closed
04/10/2018	D+1	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 66 mins	Minor	Closed
04/10/2018	D+4	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 605 mins	Minor	Closed
05/10/2018	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 5 mins	Minor	Closed
05/10/2018	D+4	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 425 mins	Minor	Closed
08/10/2018	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 6 mins	Minor	Closed
08/10/2018	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 7 mins	Minor	Closed
08/10/2018	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 5 mins	Minor	Closed
05/11/2018	D+1	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 2 mins	Minor	Closed
17/01/2019	D+1	Timing	SONI TSO	File Submission of Actual Availabilities	Delay of 145 mins	Minor	Closed
19/02/2019	D+1	Timing	EirGrid TSO	File Submission of Actual Availabilities	Delay of 55 mins	Minor	Closed
19/02/2019	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 11 mins	Minor	Closed
19/02/2019	D+4	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 430 mins	Minor	Closed
08/03/2019	D+1	Timing	SONI MDP	File Submission of metered data	Delay of 9 mins	Minor	Closed
11/03/2019	D+1	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 3 mins	Minor	Closed
19/03/2019	D+4	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 510 mins	Minor	Closed
26/03/2019	D+1	Timing	SONI MDP	File Submission of metered data	Delay of 37 mins	Minor	Closed
02/04/2019	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 65 mins	Minor	Closed
03/04/2019	D+1	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 43 mins	Minor	Closed
03/04/2019	D+1	Timing	SONI TSO	File Submission of Actual Availabilities	Delay of 65 mins	Minor	Closed
03/04/2019	D+4	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 460 mins	Minor	Closed
23/04/2019	D+4	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 665 mins	Minor	Closed
02/05/2019	D+1	Timing	SONI MDP	File Submission of metered data	Delay of 57 mins	Minor	Closed
14/05/2019	D+1	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 50 mins	Minor	Closed
14/05/2019	D+4	Timing	SONI TSO	File Submission of Dispatch Instructions	Delay of 630 mins	Minor	Closed
26/05/2019	D+4	Timing	EirGrid TSO	File Submission of Actual Availabilities	Delay of 480 mins	Minor	Closed
12/06/2019	D+4	Timing	EirGrid TSO	File Submission of Dispatch Instructions	Delay of 445 mins	Minor	Closed
13/06/2019	D+4	Timing	MRSO	File Submission of metered data	Delay of 5 mins	Minor	Closed
18/06/2019	D+1	Timing	Eirgrid MDP	File Submission of metered data	Delay of 50 mins	Minor	Closed
18/06/2019	D+4	Timing	EirGrid TSO	File Submission of Actual Availabilities	Delay of 36 mins	Minor	Closed
12/08/2019	D+1	Timing	MRSO	File Submission of metered data	Delay of 20 mins	Minor	Closed
03/09/2019	D+1	Timing	SONI MDP	File Submission of metered data	Delay of 47 mins	Minor	Closed

Table 19 - Meter data provider breaches

Market Participant Breaches

Month	Default Notices Issued
Oct-18	21
Nov-18	31
Dec-18	6
Jan-19	9
Feb-19	9
Mar-19	3
Apr-19	10
May-19	9
Jun-19	7
Jul-19	11
Aug-19	9
Total	131

Table 20 Clearing Default Notices

Month	No. of CCIN Issued	No. of Participants
Oct-18	25	11
Nov-18	28	12
Dec-18	19	11
Jan-19	81	16
Feb-19	28	14
Mar-19	25	9
Apr-19	11	5
May-19	12	2
Jun-19	17	5
Jul-19	39	14
Aug-19	30	9
Sep-19	31	6
Total	346	114

Table 21 - CCINs issued

Month	No. of defaults issued	No. of Participants
Oct-18	-	-
Nov-18	3	2
Dec-18	-	-
Jan-19	3	1
Feb-19	2	1
Mar-19	3	2
Apr-19	-	-
May-19	-	-
Jun-19	2	1
Jul-19	1	1
Aug-19	-	-
Sep-19	-	-
Total	14	8

Table 22 - Credit Default Notices

Market Operator Defaults

Indicative			
Month	On Time	Same Day Late	> 1 Day Late
Oct 2018	13	12	6
Nov 2018	13	8	9
Dec 2018	14	5	12
Jan 2019	12	9	10
Feb 2019	3	3	22
Mar 2019	5	5	19
Apr 2019	20	0	12
May 2019	26	3	2
Jun 2019	12	1	15
Jul 2019	16	3	14
Aug 2019	21	3	6
Sep 2019	10	10	11
Totals	165	62	138

Table 23 - Delays to Indicative Settlement Runs

Initial			
Month	On Time	Same Day Late	> 1 Day Late
Oct 2018	31	1	0
Nov 2018	22	7	1
Dec 2018	10	4	17
Jan 2019	6	11	14
Feb 2019	13	11	4
Mar 2019	12	10	8
Apr 2019	17	4	9
May 2019	25	5	1
Jun 2019	11	10	9
Jul 2019	29	2	0
Aug 2019	29	2	0
Sep 2019	17	7	6
Totals	222	74	69

Table 24 - Delays to Initial Settlement Runs

Appendix B: Key Settlement Issues

Key Date (s)	Issue	Impact to schedule timelines	Issue Status
Jan 18 th	Incorrect IPQBOA values (KIR ID: 5893)	<ul style="list-style-type: none"> •Settlement Documents due Friday 18th Jan for Settlement period of 6th to the 12th Jan : publication was moved to Monday 21st Jan. •Payments IN/OUT dates adjusted. 	Software update provided by vendor
Jan 29 th	Jan 29 th release post checks – Instruction Profiler Data not transferred	<ul style="list-style-type: none"> •Initial for the 23rd Jan delayed by two days •Settlement Documents due Friday 1st Feb for Settlement period of 20th to the 26th Jan : publication moved to Monday 4th Feb. •Payments IN/OUT dates adjusted. 	IP data issue resolved on Friday 1 st Feb
Feb 1 st	Difference Charge Calculation sets final QDIFFTRACK to zero if there are no intraday nor balancing trades - Capacity Market Unit(KIR ID: 5884)	<ul style="list-style-type: none"> •Initial for the 24th Jan delayed further •Payments IN/OUT dates adjusted. 	Resolution: Software update provided by vendor
Feb 3 rd	SEM_OUI and CSB_CIMB incorrectly been charged to interconnectors (KIR ID: 5931)	<ul style="list-style-type: none"> •Initial for the 24th Jan delayed further •Settlement Documents due Monday 4th Feb for Settlement period of 20th to the 26th Jan : publication was moved to Tuesday 5th Feb. •Payments IN/OUT dates adjusted. 	Resolution: Software update provided by vendor
Feb 7 th / Feb 8 th	Difference Payment Calculation sets final QDIFFTRACK to zero if there are no intraday trades - Supplier Unit (KIR ID: 5883)	<ul style="list-style-type: none"> •Settlement Documents (manual invoices) re-issued on Feb 12th to impacted PTs for the period of 20th to 26th Jan •Settlement Documents for 27th to 2nd Feb due Friday 8th Feb : publication was moved to Monday 11th Feb. •Payments IN/OUT dates adjusted. 	Resolution: Software update provided by vendor
Mar 8 th	Instruction Profiler QBOA - 'Error in Slope'	<ul style="list-style-type: none"> •Settlement Documents due Friday 8th March for Settlement period of 24th to the 2nd March : publication was moved to Monday 11th March. •Payments IN/OUT dates adjusted. 	Software update provided by vendor
Mar 15 th	Incorrect IPQBOA values (KIR ID: 5893)	<ul style="list-style-type: none"> •Settlement Documents due Friday 15th March for Settlement period of 3rd to the 9th March : publication was delayed until 15.45pm. 	Software update provided by vendor
Wednesday 12 th June	General System Failure	<ul style="list-style-type: none"> •Caused delays to the Indicative runs of the 11th / 12th & 13th June •Caused delays to the Initials of the 6th /7th /8th & 9th June •Settlement Documents for the Billing period of the 2nd - 8th published late afternoon on the 14th June 	Systems back up & running allowing Settlements to continue.
Monday 10 th June	Registration of new unit set effective June 12 th set-up in application with incorrect file type	<ul style="list-style-type: none"> •Caused continued delays to indicative run of the 12th meaning subsequent runs of the 13th -17th also delayed 	Unit details corrected & tested. Backlog of indicatives were processed.
Friday 21 st June	Ongoing IP (Instruction Profiler) Issues	<ul style="list-style-type: none"> •Caused delays to the Indicative runs of the 17th – 24th June •Caused delays to the Initial runs of the 12th – 17th June •Settlement Documents for the Billing period of the 9th - 15th published one day late on the 17th June •Payments In & Out dates adjusted 	Worked with vendor as a priority to provide a hotfix. Workaround at the time was for HRCS to execute via command line. Software update provided by vendor

Friday 6 th September	<ul style="list-style-type: none"> •KIR ID 5443 (to be published in KIR Sep 13th) •BMCRM SD calculation fails for same start or end day of Billing Period for BALIMB and CRM 	<ul style="list-style-type: none"> •Settlement Documents for the Billing period of the delayed publication within same day on Sep 6th due to internal workaround process to be implemented 	<ul style="list-style-type: none"> Fix currently was in Release D. Software update provided by vendor
Friday 20 th September	<ul style="list-style-type: none"> •Initials for the 13th & 14th of September had to be "un-published" due to issue with MDP data for NI TSO 	<ul style="list-style-type: none"> •Settlement Documents for the Billing period were delayed. Publication within same day on Sep 20th. •Payments In & Out dates were adjusted 	<ul style="list-style-type: none"> MDP corrected the root cause of the data issue within file to prevent future occurrences.
Friday 27 th September	<ul style="list-style-type: none"> •Incorrect DI (Dispatch Instruction) effective dates received within SONI TSO MDP data. Files had to be re-submitted and re-processed. 	<ul style="list-style-type: none"> •Settlement Documents for the Billing period were delayed .Publication moved by one business day to Sep 30th. •Payments In & Out dates were adjusted 	<ul style="list-style-type: none"> MDP data corrected and re-submitted to SEMO.

Figure 20 – Key Settlement Issues

Appendix C: List of Queries by Type

Upheld Queries
50 Queries relating to CABBPO, CAOPO, CDISCOUNT, and CPREMIUM were upheld.
15 Queries relating to CCC/CCP were upheld
2 Queries relating to CCURL were upheld
10 Queries relating to DIFFERENCE CHARGES (DIFFCNP/CDIFFCWD/CDIFFPIMB) were upheld
51 Queries relating to CFC were upheld
15 Queries relating to CIMB were upheld
3 Queries relating to CIMP were upheld
1 Query relating to CLAF were upheld
7 Queries relating to CMOAU were upheld
5 Queries relating to Dispatch Quantities were upheld
1 Query relating to CTEST was upheld

47 Queries relating to CUNIMB were upheld
7 Queries relating to Exchange Rates were upheld
20 Queries relating to QM were upheld
1 Query relating to Loss factors was upheld
2 Queries relating to Availability were upheld

Table 25- Upheld Queries

Topic	Query Reference	Date Sent	Due Date
CFC	F0085181	24/09/2019	06/11/2019
CFC	F0085241	13/09/2019	11/10/2019
CUNIMB	F0085188	26/09/2019	08/11/2019
CUNIMB	F0085190	26/09/2019	08/11/2019

Table 26- Unresolved Formal Queries

Appendix D: Imbalance Prices

Month	Published Imbalance Prices	Expected Count of Imbalance Prices	Missed Imbalance Prices
Oct	8782	8928	146
Nov	8537	8640	103
Dec	8789	8928	139
Quarter 1 Total	26108	26496	388
Jan	8260	8928	668
Feb	7657	8064	407
Mar	8565	8928	363
Quarter 2 Total	24482	25920	1438
Apr	8271	8640	369
May	8905	8928	23

Jun	8008	8640	632
Quarter 3 Total	25184	26208	1024
Jul	8920	8928	8
Aug	8859	8928	69
Sep	8433	8640	207
Quarter 4 Total	26212	26496	284

Table 27 – Missed Imbalance Prices

Month	Count of Market Back Up Prices	Count of Published Imbalance Settlement Prices	Expected Count of Imbalance Settlement Prices	Count of Ex-Ante Market Back Up Price
Oct	33	1442	1488	13
Nov	44	1395	1440	1
Dec	47	1441	1488	0
Quarter 1 Total	124	4278	4416	14
Jan	156	1319	1488	13
Feb	123	1221	1344	0
Mar	93	1387	1488	8
Quarter 2 Total	372	3927	4320	21
Apr	62	1367	1440	11
May	12	1474	1488	2
Jun	28	1321	1440	91
Quarter 3 Total	102	4162	4368	104
Jul	3	1485	1488	0
Aug	28	1460	1488	0
Sep	50	1383	1440	7
Quarter 4 Total	81	4328	4416	7

Table 28 – Use of Market Back Up Price

Month	Min Price	Period Starting	Max Price	Period Starting	Avg Price
<i>October</i>	-€ 1,000.00	01/10/2018 00:55	€ 1,799.19	09/10/2018 16:50	€ 65.35
<i>November</i>	-€ 461.72	13/11/2018 02:15	€ 767.84	22/11/2018 23:50	€ 70.07
<i>December</i>	-€ 871.11	16/12/2018 00:55	€ 587.99	19/12/2018 20:25	€ 59.38
<i>January</i>	-€ 645.11	13/01/2019 23:15	€ 5,636.62	24/01/2019 12:35	€ 86.46
<i>February</i>	-€ 980.00	04/02/2019 02:00	€ 490.00	18/02/2019 06:05	€ 44.26
<i>March</i>	-€ 401.04	25/03/2019 03:55	€ 664.43	09/03/2019 07:30	€ 55.79
<i>April</i>	-€ 1,000.00	13/04/2019 01:25	€ 496.16	16/04/2019 09:40	€ 52.14
<i>May</i>	-€ 451.06	31/05/2019 03:15	€ 496.31	10/05/2019 07:25	€ 43.76
<i>June</i>	-€ 357.17	02/06/2019 14:15	€ 498.84	28/06/2019 19:45	€ 37.90
<i>July</i>	-€ 362.93	21/07/2019 22:15	€ 501.64	07/07/2019 05:25	€ 44.03
<i>August</i>	-€ 387.54	22/08/2019 03:40	€ 497.63	27/08/2019 11:45	€ 42.23
<i>September</i>	-€ 325.17	14/09/2019 22:25	€ 495.88	13/09/2019 20:20	€ 38.89

Table 29 – High/Low/Average Imbalance Prices

Month	Min Price	Period Starting	Max Price	Period Starting	Avg Price
<i>October</i>	-€ 281.16	20/10/2018 02:30	€ 1,453.09	09/10/2018 16:30	€ 65.70
<i>November</i>	-€ 211.59	27/11/2018 04:00	€ 514.01	23/11/2018 00:00	€ 70.06
<i>December</i>	-€ 263.17	08/12/2018 01:00	€ 472.14	16/12/2018 13:00	€ 59.85
<i>January</i>	-€ 254.21	13/01/2019 22:30	€ 3,773.69	24/01/2019 13:00	€ 84.71
<i>February</i>	-€ 280.45	09/02/2019 02:00	€ 337.06	12/02/2019 18:00	€ 44.63
<i>March</i>	-€ 223.74	15/03/2019 13:30	€ 464.75	03/03/2019 17:30	€ 55.45
<i>April</i>	-€ 203.57	12/04/2019 13:30	€ 373.74	25/04/2019 12:30	€ 51.40
<i>May</i>	-€ 205.99	26/05/2019 09:00	€ 482.09	18/05/2019 17:30	€ 44.00
<i>June</i>	-€ 219.60	02/06/2019 15:00	€ 352.29	18/06/2019 12:30	€ 37.94
<i>July</i>	-€ 100.74	21/07/2019 22:00	€ 307.70	08/07/2019 09:00	€ 44.12
<i>August</i>	-€ 221.26	31/08/2019 14:30	€ 403.01	13/08/2019 09:30	€ 42.58
<i>September</i>	-€ 135.56	15/09/2019 01:00	€ 367.69	07/09/2019 12:30	€ 38.36

Table 30 – High/Low/Average Imbalance Settlement Prices

Appendix E: Market Operator User Groups

Market Operator User Group (MOUG)	
Date	Location
10/10/2018	Dublin
25/10/2018	Belfast
08/11/2018	Dublin
22/11/2018	Dublin
11/12/2018	Belfast
17/01/2019	Dublin
27/02/2019	Dublin
03/04/2019	Belfast
16/05/2019	Dublin

20/06/2019	Belfast
18/07/2019	Dublin
11/09/2019	Dublin

Table 31 – MOUG dates