



Market Operator Monthly Report

October 2017

Table of Contents

EXECUTIVE SUMMARY	4
MONTHLY STATISTICS	5
TRADING AND SETTLEMENT CODE BREACHES	5
<i>JOINING AND TERMINATING PARTIES AND UNITS</i>	6
<i>SUSPENSION OF PARTICIPANTS</i>	6
FINANCIAL STATISTICS	7
TOTAL PAYMENTS FOR EACH CURRENCY.....	8
TOTAL BALANCING COSTS	9
TOTAL CURRENCY COSTS	11
CUMULATIVE IMPERFECTIONS COSTS VS BUDGET.....	12
FINANCIAL CHANGES BETWEEN INITIAL SETTLEMENT AND SUBSEQUENT RERUNS	13
3.1.1 <i>Energy Market</i>	13
3.1.2 <i>Capacity Market</i>	17
HELPDESK CALL STATISTICS.....	21
DISPUTES AND QUERIES.....	22
5.1.2 <i>Data Queries</i>	22
5.1.3 <i>Settlement Queries</i>	22
CENTRAL SYSTEMS.....	23
6.1 PROPORTION OF DEFAULT DATA USED.....	23
6.2 PROPORTION OF ESTIMATED METER DATA USED IN INITIAL SETTLEMENT AND RESETTLEMENT.....	23
6.3 LIST OF SYSTEM ERRORS AND RE-RUNS	23
6.3.1 <i>Re-Pricing / Resettlement Runs /MIUN Delays</i>	23
6.3.2 <i>System Errors</i>	23
6.4 OPERATIONAL TIMINGS	23
1.4.1 <i>MSP Postings October 2017</i>	24
6.4.2 <i>MSP Algorithms</i>	27
1.4.1 <i>Settlement Postings October 2017</i>	28
6.5. – NO UPDATE FOR OCTOBER 2017	29
OCCASIONAL COMPONENTS.....	30
7.1 DISASTER RECOVERY/BUSINESS CONTINUITY TESTS.....	30
7.3 COMMUNICATIONS OR SYSTEMS FAILURES.....	30
7.4 DENIAL OF SERVICE ATTACKS	30
7.5 SUBMISSION OF PARAMETERS TO RAS FOR APPROVAL	30
APPENDIX A: DETAIL OF TRADING AND SETTLEMENT CODE BREACHES	31
DATA PROVIDER	31
MARKET PARTICIPANT	31
SEMO - PRICING AND SCHEDULING.....	31
SEMO – SETTLEMENTS	31
SEMO - FUNDS TRANSFER	31
SEMO - CREDIT MANAGEMENT	32
SEMO – OTHER	32
APPENDIX B: LIST OF QUERIES BY TYPE.....	33
APPENDIX C: LIST OF ALL SYSTEM ERRORS AND FAILURES	34
APPENDIX D: DETAILS OF OPERATIONAL TIMINGS.....	35
MARKET SCHEDULE AND PRICE RUNS	35
SETTLEMENT RUNS.....	36
APPENDIX E: IMPERFECTIONS CHARGE	37

Market Operator Monthly Report

APPENDIX F: DEFAULT COMMERCIAL OFFER DATA USED.....	41
APPENDIX G: TOTAL CHARGES AND PAYMENTS DATA.....	46
APPENDIX H: FULL BALANCING COSTS	48
TRADING MARKET.....	48
CAPACITY MARKET	48
APPENDIX I: MSP ALGORITHMS	49

Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of October 2017 and is published in accordance with the Single Electricity Market (SEM) Committee decision and Clause 2.144 of the Trading and Settlement Code.

During the month of October 2017, there were no late Settlement publications as per the Trading and Settlement code.

During the month of October 2017, there was no late Credit Report publication as per the Trading and Settlement code timelines.

There were 15 defaults by Participants during October 2017. The largest of these was an Energy Week 38 2017 Initial invoice for €376,528.24 which was remedied on the same day.

There were no Credit Cover Increase defaults during October 2017 as per the Trading and Settlement code timelines.

145 general queries were received in October 2017. During the same period 151 general queries were resolved.

Formal queries continue to be answered well within the timelines stipulated in the Trading and Settlement Code.

Monthly Statistics

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		-	2
Market Participants	Pricing & Scheduling	-	-
	Settlement	-	-
	Funds Transfer	15	-
	Credit Risk Management	-	-
SEMO	Pricing & Scheduling	-	-
	Settlement	-	-
	Funds Transfer	-	-
	Credit Risk Management	-	-
	Other	-	-
Total		15	2

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 invoices, default notices issued for non-payment or similar.
- Minor Breach - deadlines not met, but no financial implication to Participants. This includes late posting of pricing and settlement runs.

Joining and Terminating Parties and Units

2 Parties joined the Market in October 2017.

- PY_000189 Energi Danmark A/S
- PY_000192 In-Commodities A/S

There were no terminating parties in October 2017.

The following units went effective in the Market in October 2017

- PT_400050_Viridian Energy Limited- GU_402200 Tullynamoyle 3 Windfarm
- PT_400146_Cnoc Energy Supply Limited- SU_400180 Cnoc Energy Supply Ltd

No units de-registered from the Market in October 2017.

Suspension of Participants

No Suspension Orders were issued by the Market Operator in October 2017.

Financial Statistics

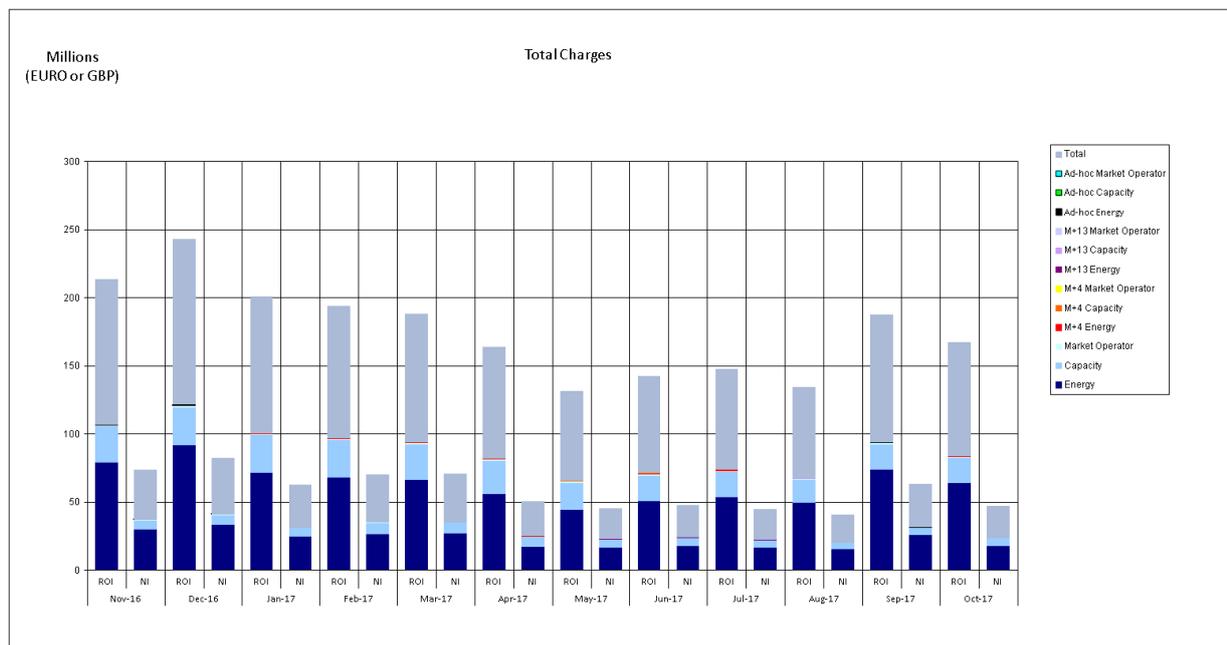


Figure 1 - Total Charges for Each Currency

Market	Oct 17	
	ROI	NI
Energy	€64,383,218	£18,177,387
Capacity	€18,184,491	£5,365,068
Market Operator	€721,054	£188,850
M+4 Energy	€289,078	£78,540
M+4 Capacity	€109,974	£23,504
M+4 Market Operator	€2,587	£651
M+13 Energy	€32,786	£10,932
M+13 Capacity	€11,167	£2,878
M+13 Market Operator	€448	£134
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
Total	€83,734,802	£23,847,943

Table 2 - Total Charges for Each Currency

Notes relating to Table 2 and 3:

- Month of inclusion based on Invoice Date.
- Amounts are after application of Settlement Reallocations.
- Previous month's data is available in [Appendix G](#).

Total Payments for Each Currency

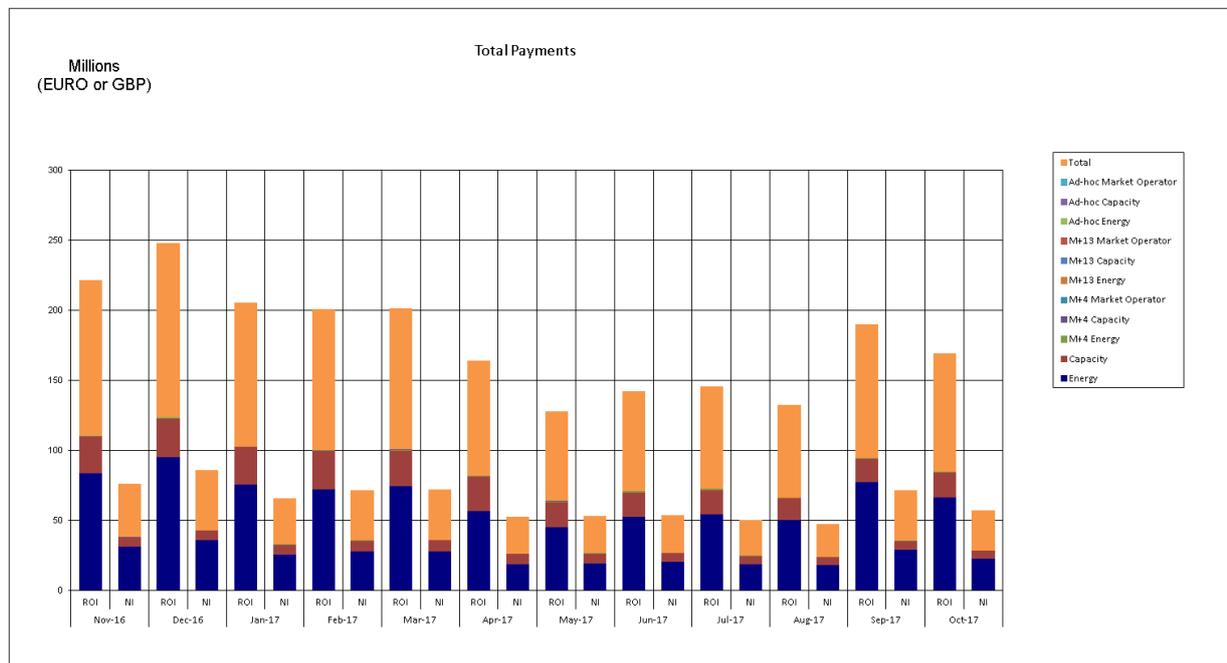


Figure 2 - Total Payments for Each Currency

Market	Oct 17	
	ROI	NI
Energy	€66,627,077	£22,549,010
Capacity	€17,573,435	£5,897,550
M+4 Energy	€379,168	£79,103
M+4 Capacity	€109,325	£24,197
M+4 Market Operator	€2,587	£648
M+13 Energy	€31,770	£10,936
M+13 Capacity	€11,103	£2,958
M+13 Market Operator	€435	£134
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
Total	€84,734,900	£28,564,536

Table 3 - Total Payments for Each Currency

Total Balancing Costs

Balancing Costs arise in the Energy and Capacity markets when the summed payments to the SEM from Participants in respect of their Supplier Units do not meet the summed payments to Participants from the SEM in respect of their Generator Units.

Although, it is intended the Energy Payments and Energy Charges should be balanced through the mechanism of the Error Supplier Unit in each jurisdiction, because Energy Payments are made against Market Schedule Quantities while the Error Supplier Unit volumes are calculated against Metered Generation, the different application of Loss Factors means that there is frequently an imbalance between the Energy Payments and Energy Charges.

With regard to the Energy Settlement, the Balancing Costs have been calculated as follows for the entire month:

October 2017	
Imbalance (Energy Only)	€-6,919,591.75

Table 4 - Balancing Costs for Energy Settlement

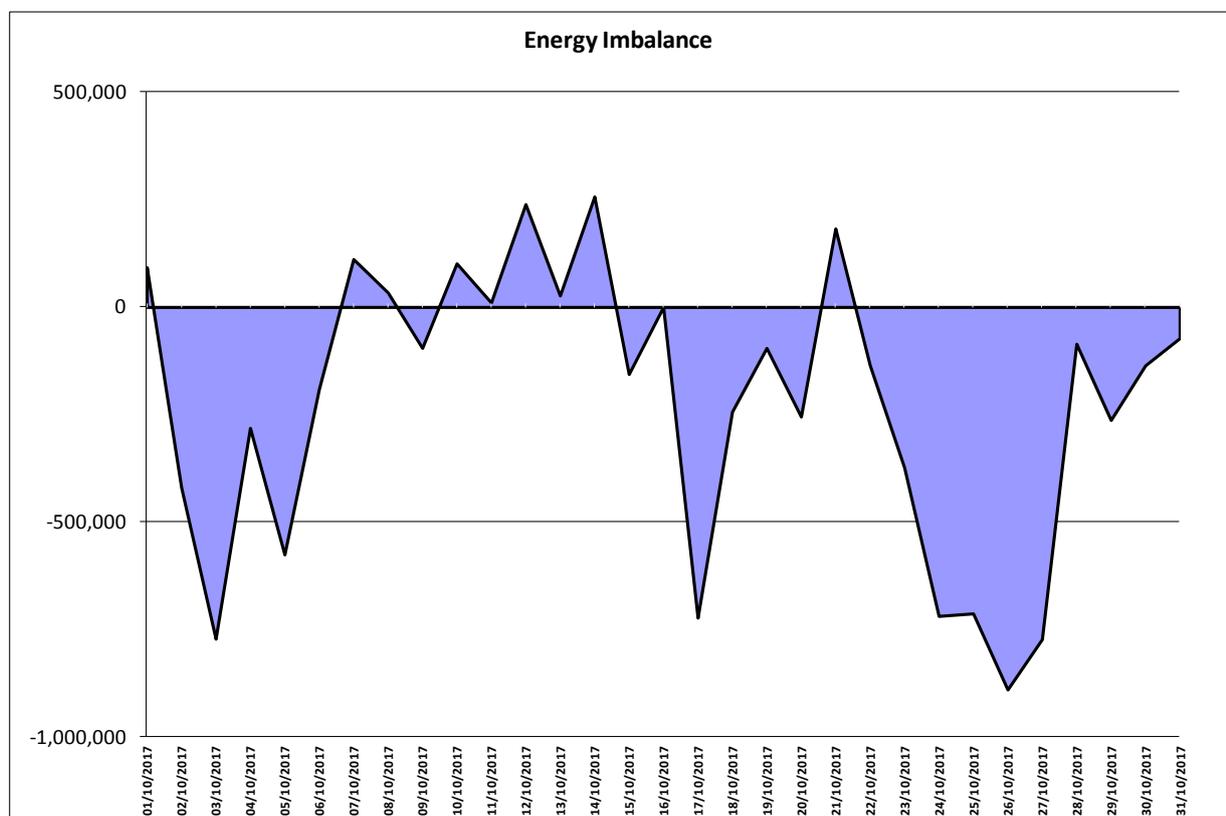


Figure 3 – Energy Imbalances

Market Operator Monthly Report

The full Balancing Cost of the SEM is determined by the summation of the daily payment amounts for Energy Imbalance, Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges combined with the weekly Make Whole Payments and Testing Charges.

Historical values for testing charges have been provided in [Appendix E](#) .

The figures for the full Balancing Cost of the SEM since the last Market Operator report are shown below, as well as the VAT Balancing Costs.

In tables 5 and 6 below:

- Positive values indicate Payments were greater than Charges.
- Negative values indicate Charges were greater than Payments.

Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
06/10/2017	39	€4,277,088.98	€0
13/10/2017	40	€2,482,838.95	€0
20/10/2017	41	€1,242,741.61	€0
27/10/2017	42	€2,017,373.96	€0

Table 5 - Balancing Costs for Trading Payments and Charges

SEM Balancing Costs are provided based on daily exchange rates, VAT Balancing Costs are based on the Invoicing day exchange rate. VAT Balancing costs exclude Currency Cost related VAT.

It is intended that the algorithms set out in the Trading and Settlement Code will lead to a balanced Capacity Market. However, rounding precisions within the systems may result in an imbalance being introduced into the equations. This imbalance may lead to funding requirements to ensure that all payments out are made as per the terms of the Trading and Settlement Code.

With regard to the Capacity Settlement, the Balancing Costs have been as follows:

October 2017	
Capacity Charges	€45,397,055.76
Capacity Payments	€45,396,770.69
Balancing Costs	-285.07
VAT	€0

Table 6 - Balancing Costs for Capacity Settlement

Historical figures, the current financial year full Balancing Costs for both Trading and Capacity are provided in [Appendix H](#). VAT Balancing costs exclude Currency Cost related VAT.

Total Currency Costs

Currency Costs in the SEM are calculated with respect to the difference in Exchange Rates due to two components:

- 1) Invoice Currency Costs: - in respect of the difference between the Trading Day Exchange Rate (and Annual Capacity Exchange Rate in respect of Capacity Settlement) and the Exchange Rate on the Date of Invoice (being the date of issue of the Invoice) for Trading Payments and Charges.
- 2) Payment Period Currency Costs: - in respect of the difference between the Exchange Rates between the Date of Invoice and the Date of Payment.

Although the Trading and Settlement Code uses the term Currency Cost, the currency differences may end up as a benefit or a cost to the Participant depending on how the Exchange Rate fluctuates between the Billing Period, Invoice Date and Payment Date. In the table below, where this value is positive this means there was an overall benefit to Participants, negative values mean there was an overall cost to Participants resulting from trading in two currencies. Figures are shown in Sterling (£).

Last Date Of Billing Period	Date Of Invoice	Week No	Currency Costs For Energy Settlement (Invoice and Payment)	Currency Cost Adjustment for Inter-jurisdictional SRAs	Total Currency Cost
30/09/2017	06/10/2017	39	-£7,687.87	£-	-£7,687.87
07/10/2017	13/10/2017	40	£54,311.29	£-	£54,311.29
14/10/2017	20/10/2017	41	£17,408.27	£-	£17,408.27
21/10/2017	27/10/2017	42	£2,755.77	£-	£2,755.77

Table 7 - Total Currency Costs for Trading Payments and Charges

Market Operator Monthly Report

The Total Currency Cost figures detailed above show the Currency Cost for each Billing Period including Invoice Currency Costs, Payment Period Currency Costs, and Inter-jurisdictional SRA Currency Costs.

Over the period of this report Currency Costs for each week represented a benefit to Participants of up to £54,311.29 and a loss of up to £7,687.87. Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

Settlement Reallocation Agreements between the two currency zones continue to present volatility in the Currency Costs that appear in the Energy market each week. The value of these adjustments is detailed separately above in each Billing Period.

The Currency Costs, for the current financial year, with respect to Initial Capacity Settlement are set out below. Figures are shown in Sterling (£).

Date Of Invoice	Capacity Month	Currency Costs For Capacity Settlement
10/10/2017	Sept 2017	£5,681.49

Table 8 - Total Currency Costs for Capacity Payments and Charges

Cumulative Imperfections Costs Vs Budget

The value of Cumulative Imperfections Costs Vs Budget is calculated as the sum of Total Constraint Payments, Total Uninstructed Imbalance Payments, Total Testing Charges and Total Make Whole Payments, as compared against the Total Imperfections Charges, being the weekly budget for these Imperfections Costs.

These values have been collected across the months since the start of the new financial year, 1st October 2017. The values expressed in Euros are as follows.

This table makes use of the values taken from the Initial Settlement Run of Trading payments and charges.

Market Operator Monthly Report

Total Constraint Payments	Total Uninstructed Imbalance	Total Make Whole Payments	Total Imperfections
€21,824,558.41	-€96,950.12	€527,709.09	-€13,982,824.84

Table 9 – Cumulative Imperfections Costs Vs Budget

Note: The Total Constraints Payment figure above has been updated to contain Interconnector Unit Gate variables.

This is demonstrated in the figure below.

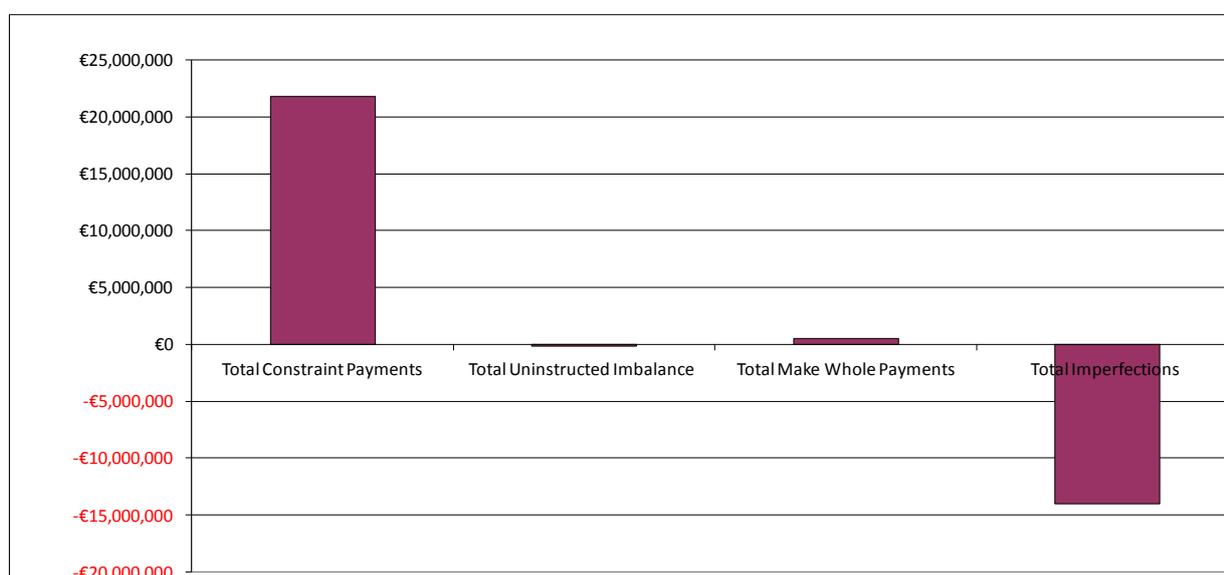


Figure 4 - Cumulative Imperfections Costs Vs Budget

The daily and weekly data that comprised these values is shown in [Appendix E](#).

Financial Changes between Initial Settlement and Subsequent Reruns

The following graphs provide a breakdown of resettlement amounts for the M+4 resettlement period of June 2017 and M+13 resettlement period of September 2016 for Energy and Capacity.

3.1.1 Energy Market

Note: - For Figure 6, 8, 9, net values are shown.

- Positive amounts indicate net additional payments by Participants (Charges).
- Negative amounts indicate net additional payment to be made to Participants (Payments).

The reverse is true for Figure 7 & 10

M+4 Resettlement

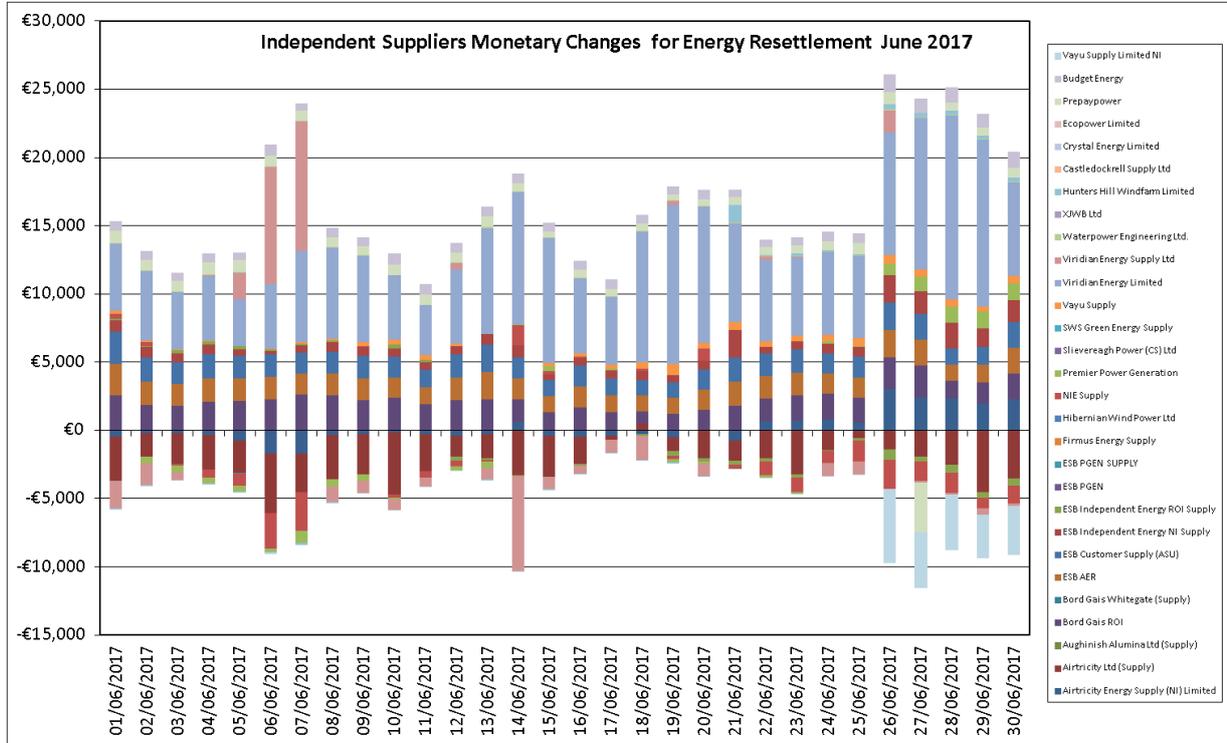


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – June 2017

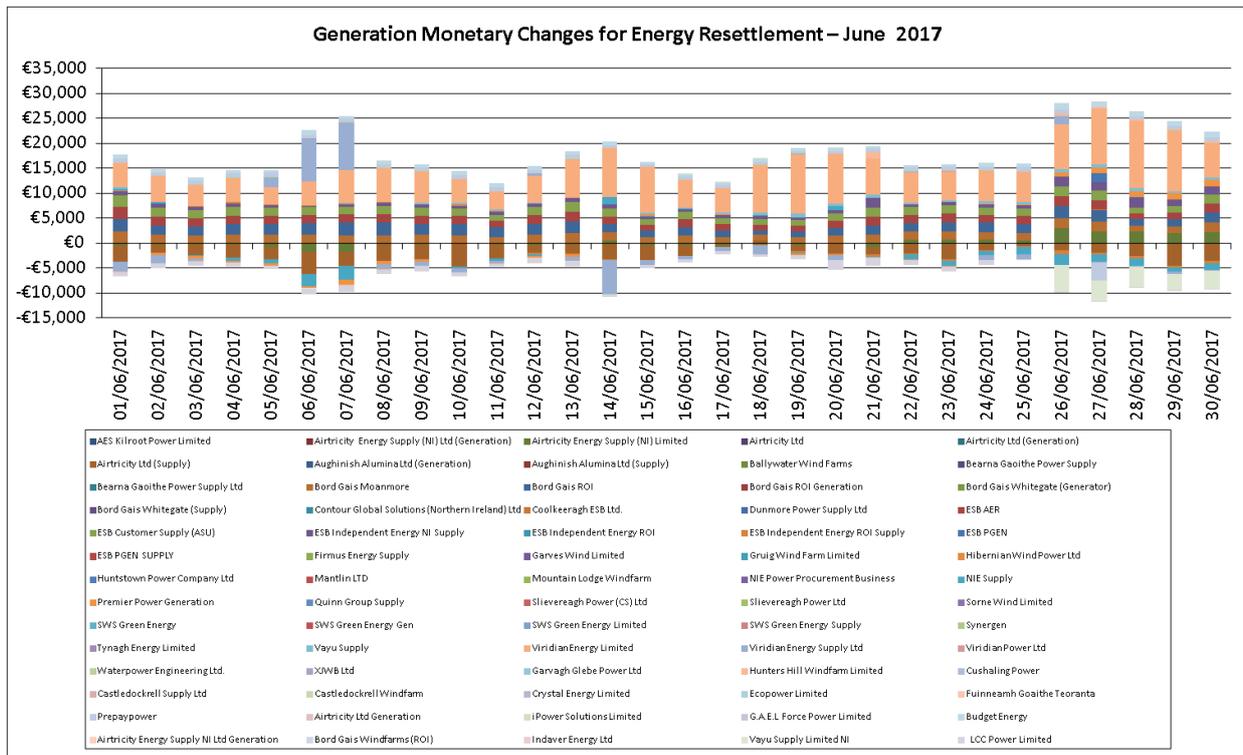


Figure 6 – Generation Monetary Changes for Energy Resettlement – June 2017

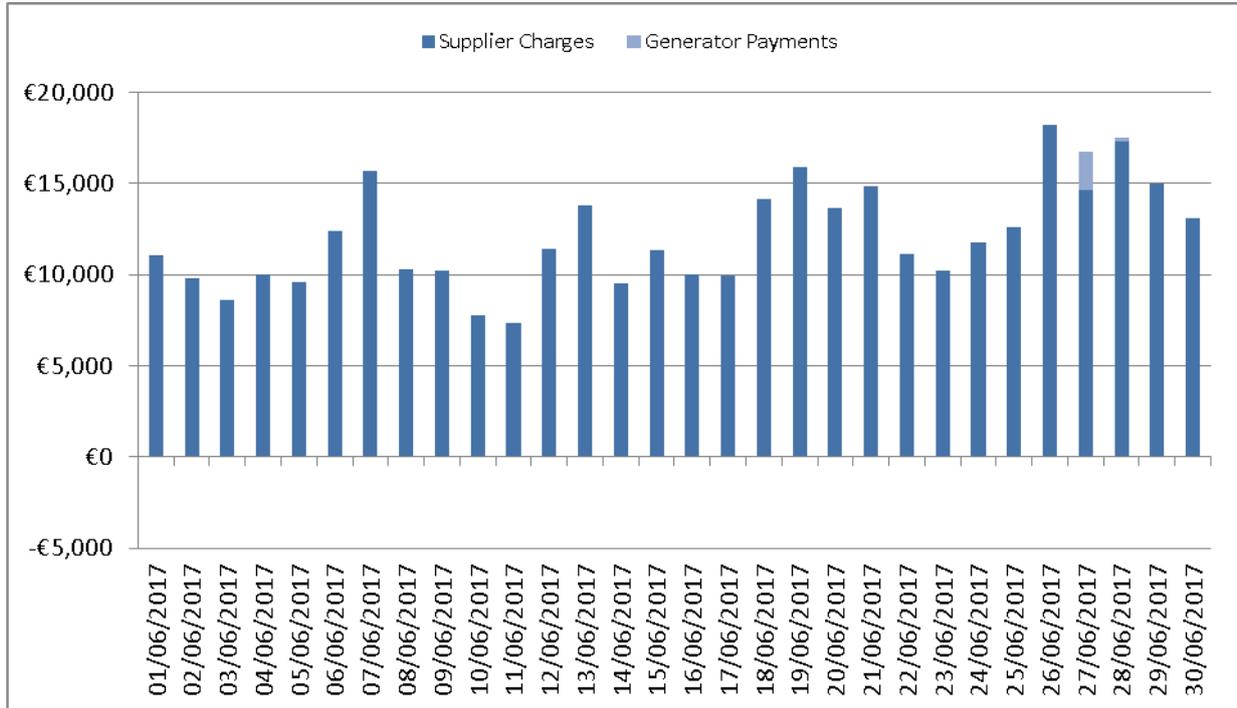


Figure 7 – Total Monetary Changes for Energy Resettlement – June 2017

M+13 Resettlement

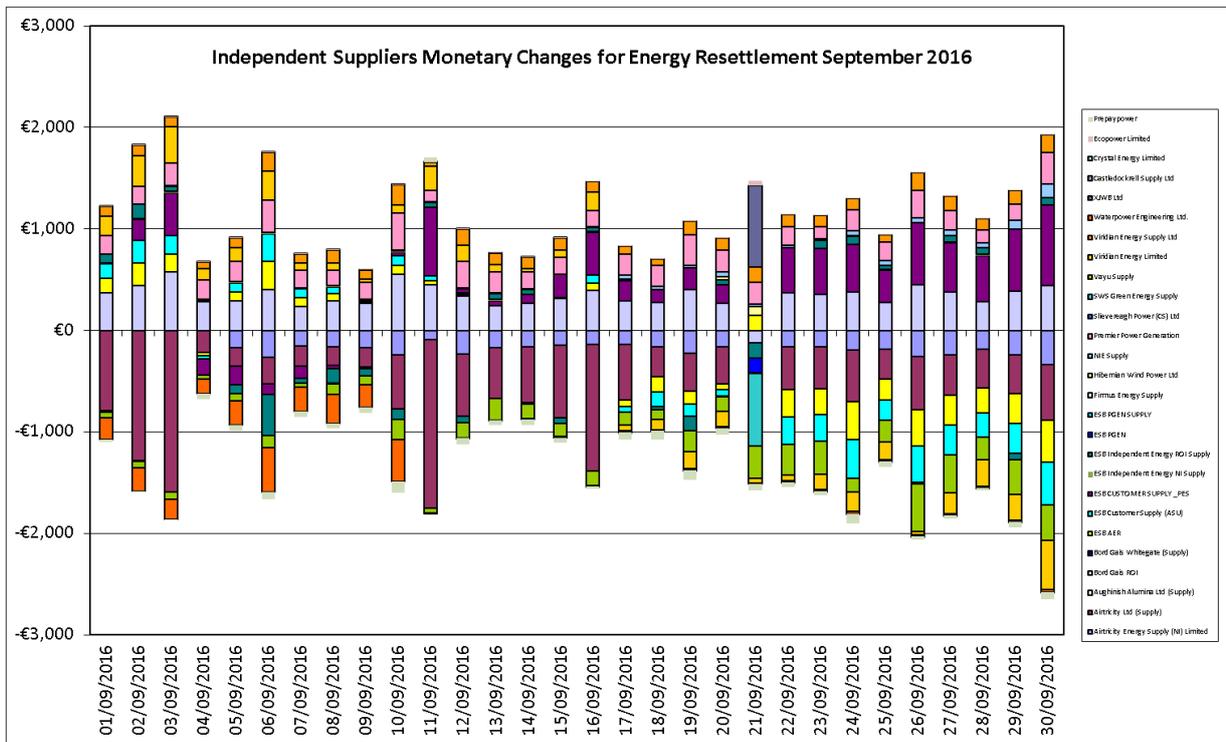


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – September 2016

Market Operator Monthly Report

The above variances relates purely to rounding for Participants between M+4 and M+13 Resettlement.

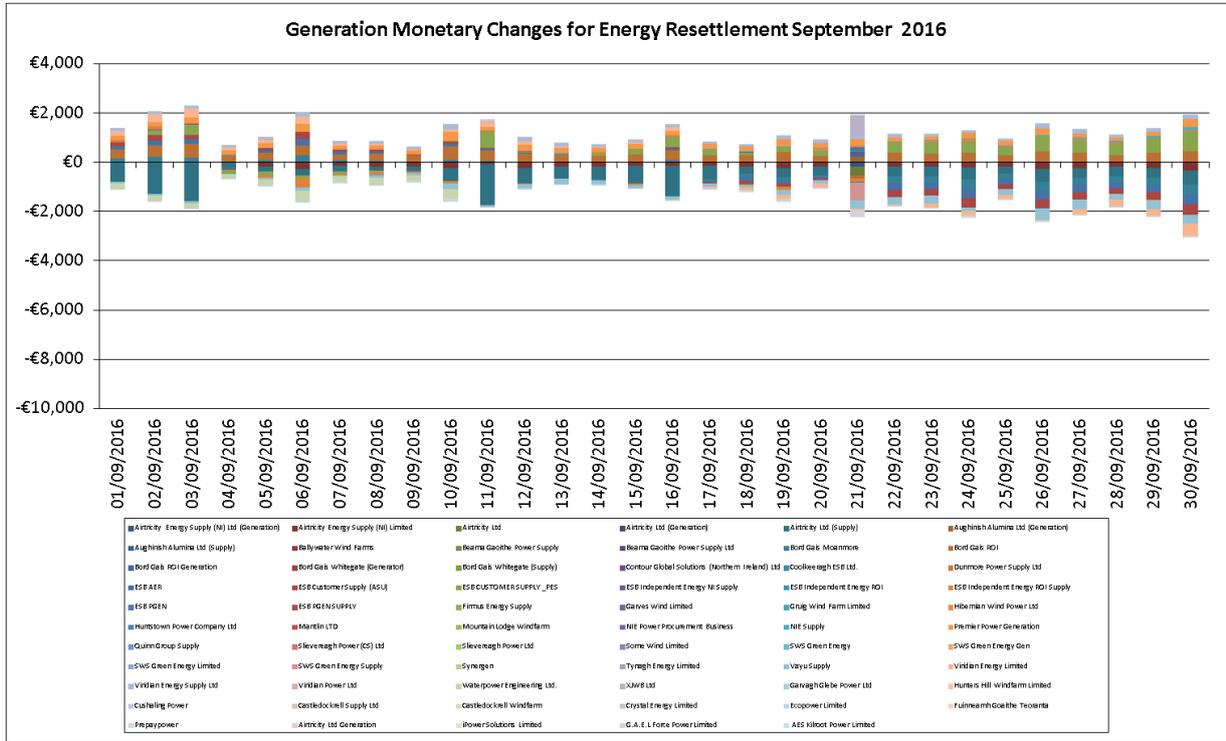


Figure 9 - Generation Monetary Changes for Energy Resettlement – September 2016

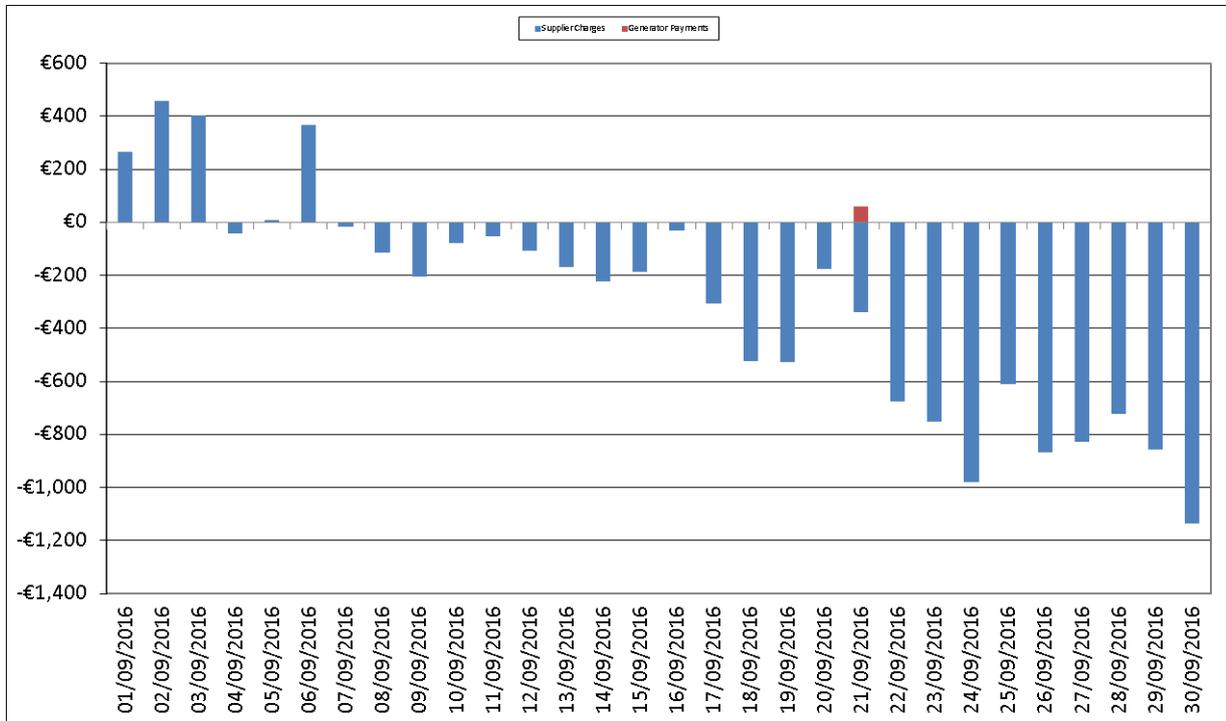


Figure 10 - Total Monetary Changes for Energy Resettlement – September 2016

3.1.2 Capacity Market

Note: - For Figure 12, 13 & 16 net values are shown.

- Positive amounts indicate net additional payments by Participants (Charges).
- Negative amounts indicate net additional payment to be made to Participants (Payments)

The reverse is true for Figure 14 & 22.

The changes in Capacity are graphed below showing the variance in monetary terms as opposed to percentage terms. As the Jurisdictional Error Supply Units can be significantly affected by resettlement, this is more reflective of the monetary redistribution in M+4 and M+13. Please also note that as of June 2011 the Jurisdictional Error Supply Unit (ROI) is now a Retail Supply unit. The Jurisdictional Error Supply Unit (NI) is unchanged.

M+4 Resettlement

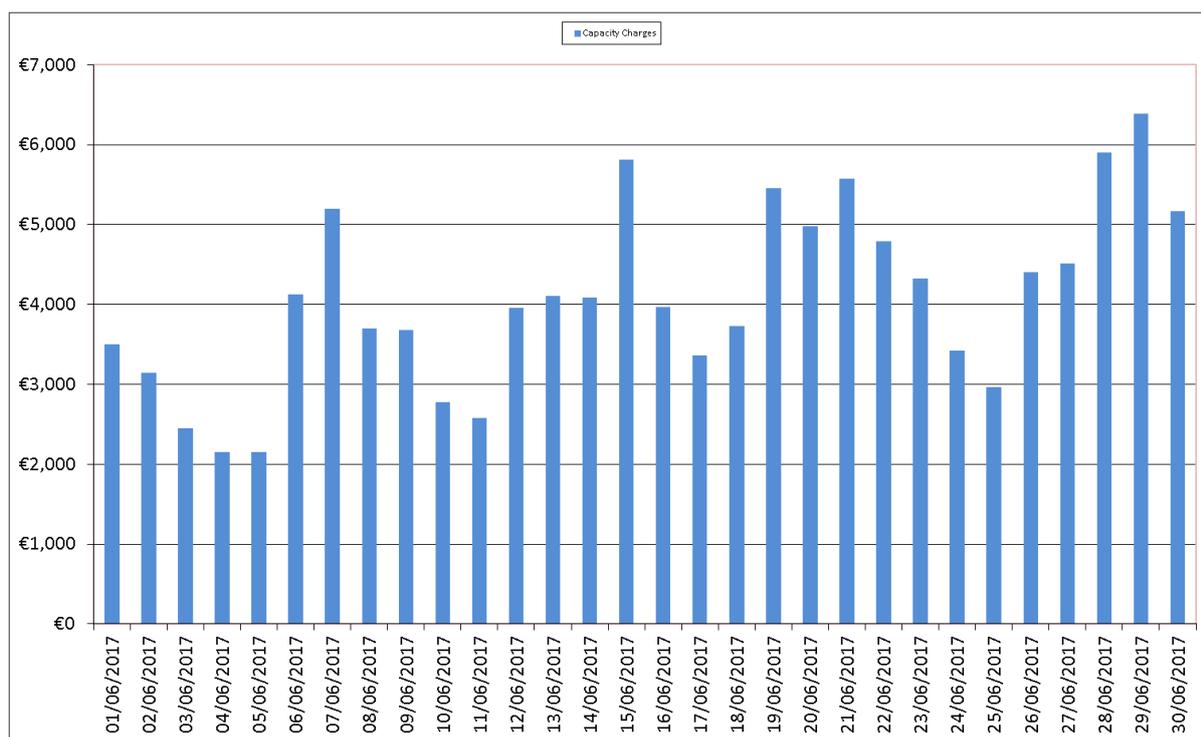


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – June 2017

Market Operator Monthly Report

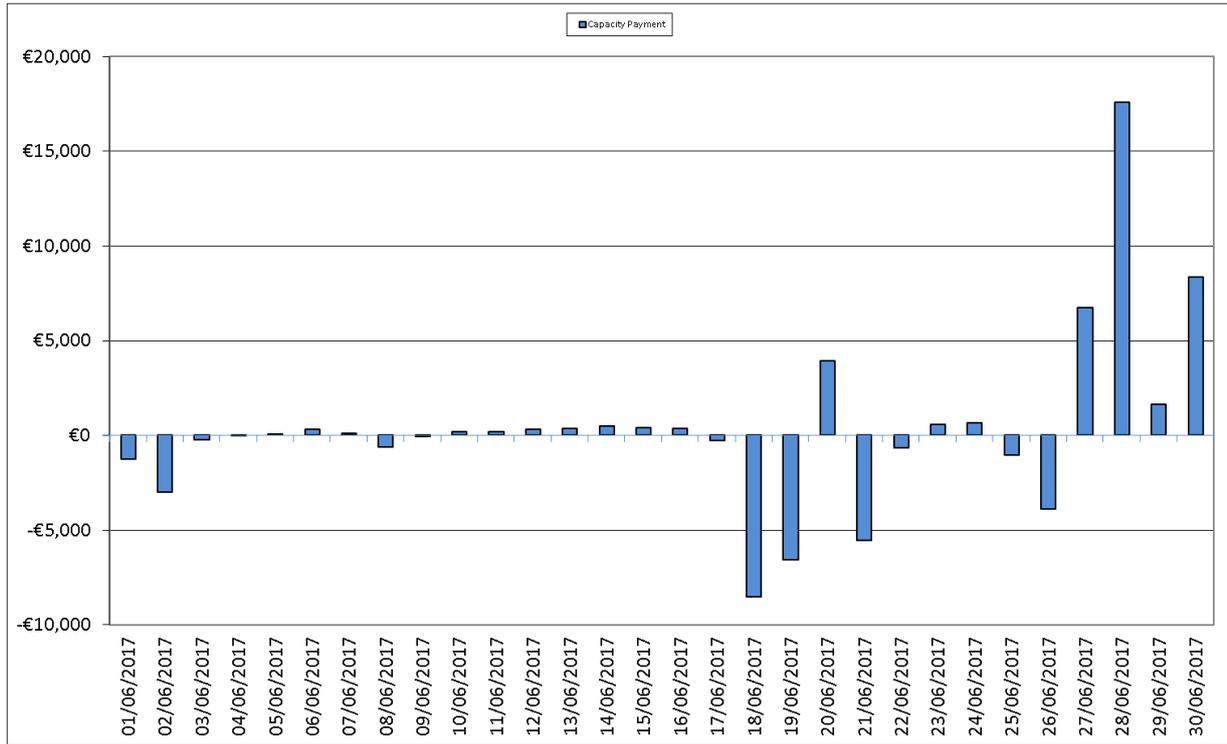


Figure 12 - All Generation Monetary Change for Capacity Resettlement – June 2017

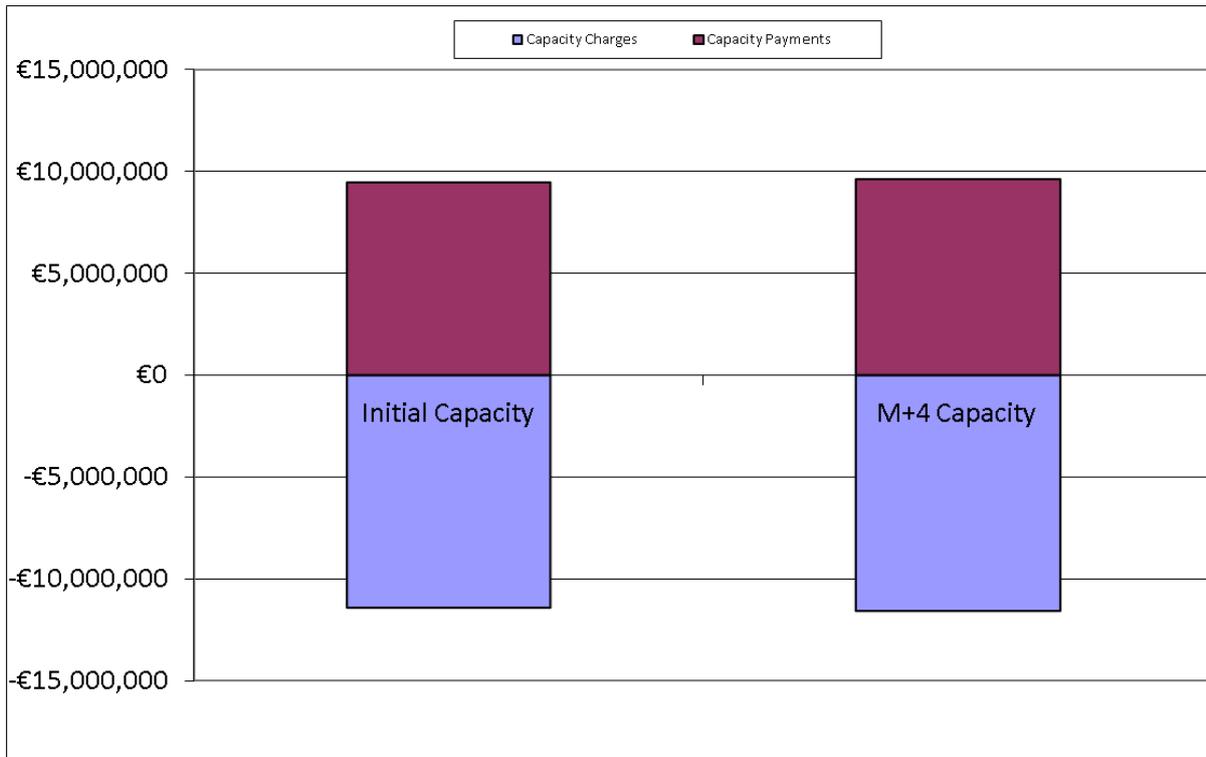


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement June 2017

Market Operator Monthly Report

The above graph demonstrates that due to all the individual changes to payment and charge amounts on a Supplier or Generator Unit basis, the overall Capacity Market resettlement Charge and Payment amounts have not changed due to resettlement.

M+13 Resettlement

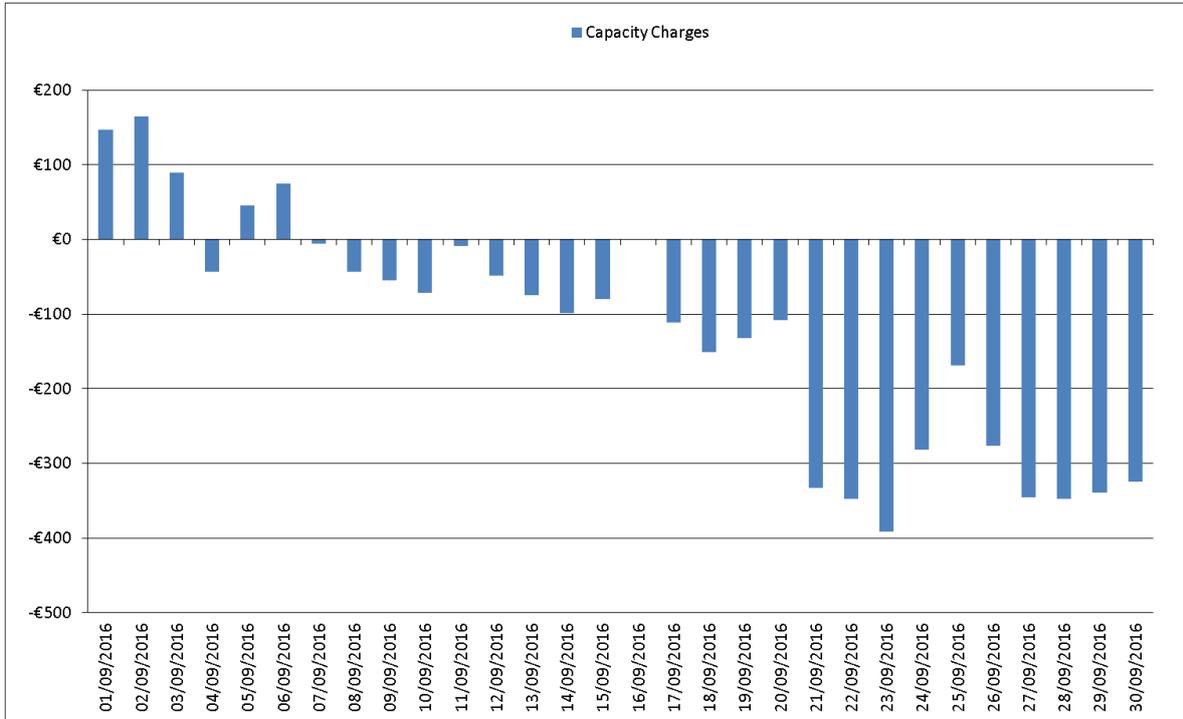


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – September 2016

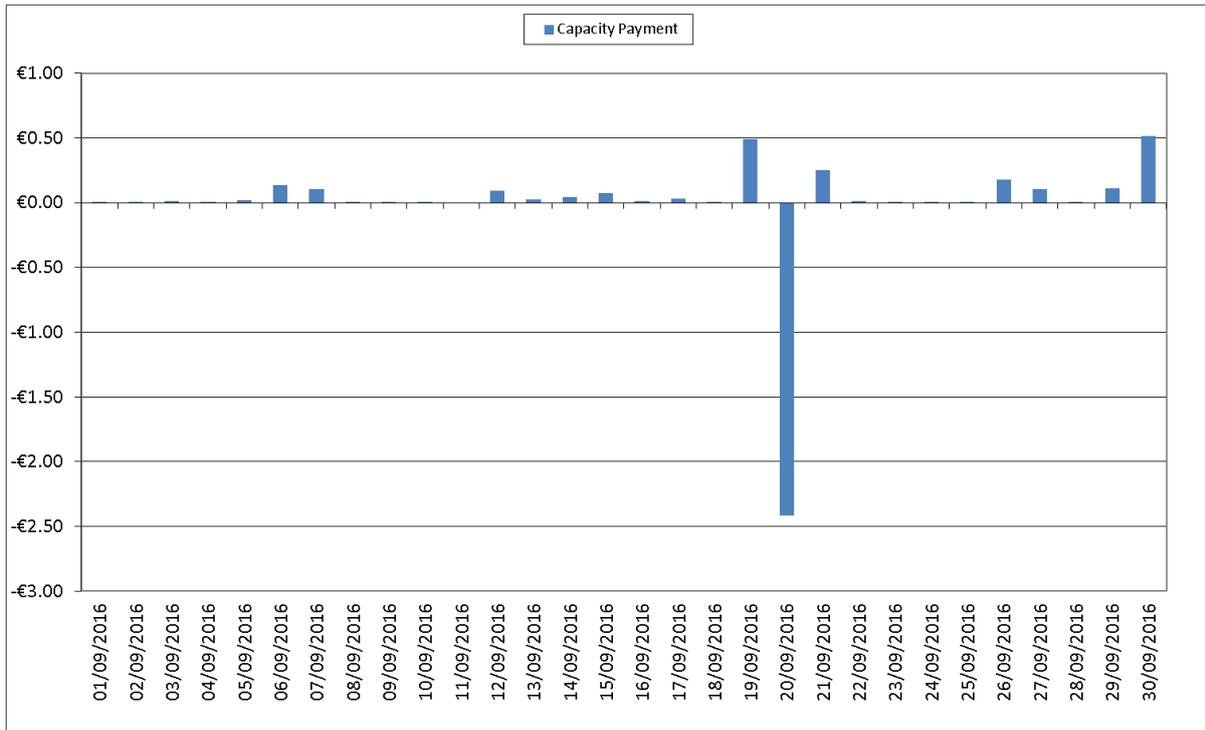


Figure 15 – All Generation Monetary Change for Capacity Resettlement – September 2016

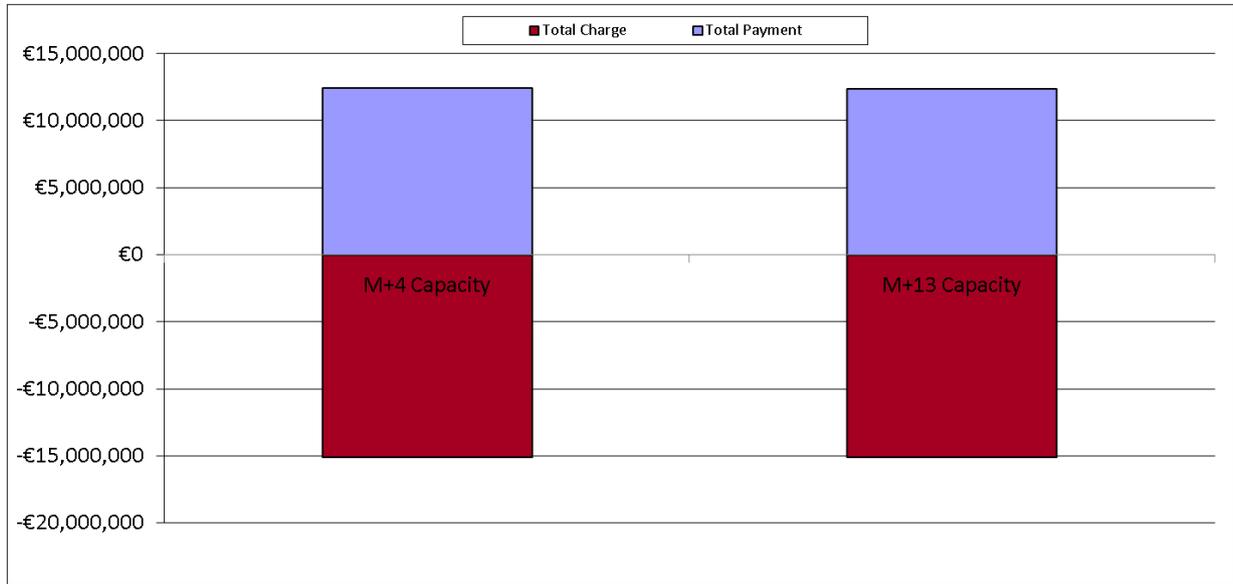


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – September 2016

Market Operator Monthly Report

Helpdesk Call Statistics

The statistics presented in Table 10 - Helpdesk Call Statistics covers the month of October 2017.

Market Helpdesk Report: 01/10/17 to 31/10/17

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	142	122	20	148	2.26	131
Important	3	3	0	3	3.13	1
Urgent	0	0	0	0	0.00	0
Settlement	4	3	1	3	1.35	3
Credit	0	0	0	0	0.00	0
Dispute	0	0	0	0	0.00	0
Data	0	0	0	0	0.00	0
Total/Average	149	128	21	154	1.35	135

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of October 2017.
- Resolved in the Period refers to queries resolved within October 2017, and includes queries raised before this time.
- Resolution Time (Working Days) refers to average time to resolve, in working days, for this category of query. It is calculated based on all queries for the category, not just October 2017.
- Not Resolved refers to queries raised but not resolved within October 2017.
- Urgent are general queries which may have an impact on market operations. SEMO has an internal objective to resolve these within 3 working days; however, this is not a mandated service level under the Trading and Settlement Code.
- Disputes are where a dispute has been raised over the outcome of a data or settlement query.

The average resolution time for General Queries has increased by 1.38 working days from 0.90 in September to 2.28 in October 2017. SEMO has a metric to resolve General Queries within 20 Working Days. These include queries received over the phone and e-mail.

Data and Settlement Queries generally continue to be responded to within the timelines required by the Trading and Settlement Code, i.e. one calendar month. No Formal Query timeline extensions were required during October 2017 with regard to formal Settlement Queries.

Disputes and Queries

5.1.1 Disputes

No disputes were raised during the month of October 2017.

Topic	Number Of Queries

Table 11– Upheld Dispute Queries by Topic

5.1.2 Data Queries

No formal data queries were raised during the month of October 2017.

Topic	Number Of Queries

Table 12– Upheld Data Queries by Topic

5.1.3 Settlement Queries

There were four formal Settlement queries raised in October 2017. All four queries were upheld and have since been resolved.

Topic	Number Of Queries
Meter Generation	2
Dispatch Instructions	1
Capacity	1

Table 13 – Upheld Settlement Queries by Topic

- Two queries relating to Meter Generation were raised. These are to be corrected within M+4 resettlement. The two queries were deemed to be of Low Materiality.
- One query relating to Dispatch Instructions was raised. These are to be corrected within An Ad-Hoc resettlement. The query was deemed to be of High Materiality.
- One query relating to Capacity was raised. These are to be corrected within An Ad-Hoc resettlement. The query was deemed to be of Low Materiality.

Unresolved Queries

There are no unresolved settlement queries as of the 15th October 2017

A full list of all the Data and Settlement queries raised is contained in [Appendix B](#).

Central Systems

6.1 Proportion of Default Data Used

On review of the Commercial Offer Data used in the MSP runs, 64.68% of data used was submitted by Participants through the normal Bid-Offer process. 35.32% of the data used was based on Standing Commercial Offer Data. 0.0% of the data used was based on adjusted offer data. None of the data used was based on Default Commercial Offer Data (Default differs from Standing in that it is based on the initial Default data submitted during registration process and not on more recent Standing Data submitted by the Participant through the Market Participant Interface). Details by unit are provided in [Appendix F](#).

6.2 Proportion of Estimated Meter Data used in Initial Settlement and Resettlement

This is not calculable presently.

6.3 List of System Errors and Re-runs

Details are provided in Appendix C: List of All Systems Errors and Failures

6.3.1 Re-Pricing / Resettlement Runs /MIUN Delays

There was 1 Re-Price carried out in October 2017 for Trade Date 27/06/2017.

There were no Ad hoc Re-Settlement runs carried out in October 2017.

6.3.2 System Errors

There were no Market Application defects found in October 2017.

Details are provided in Appendix C: List of All Systems Errors and Failures

6.4 Operational Timings

This section lists the operation timings of MSP software runs and Settlement runs.

There are five run types for MSP software,

- Ex-Ante 1 Indicative, run on Trading Day – 1 calendar day,
- Ex-Ante 2 Indicative, run on Trading Day – 1 calendar day,

Market Operator Monthly Report

- With In Day 1 Indicative, run on Trading Day,
- Ex-Post Indicative, run on Trading Day + 1 calendar day, and
- Ex-Post Initial, run on Trading Day + 4 calendar days.

The following tables and graphs provide details for the postings of the MSP for October 2017.

1.4.1 MSP Postings October 2017

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	30-30	0	0	0
Post EA1	29-30	0	1	0
Post EA2	29-30	0	0	1
Post WD1	30-30	0	0	0
Post EP1	30-30	0	0	0
Post EP2	30-30	0	0	0

Table 14 - Operational Timings

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	100%	0%	0%	0%
Post EA1	97%	0%	3%	0%
Post EA2	97%	0%	0%	3%
Post WD1	100%	0%	0%	0%
Post EP1	100%	0%	0%	0%
Post EP2	100%	0%	0%	0%

Table 15 - Operational Timings (% on time)

Market Operator Monthly Report

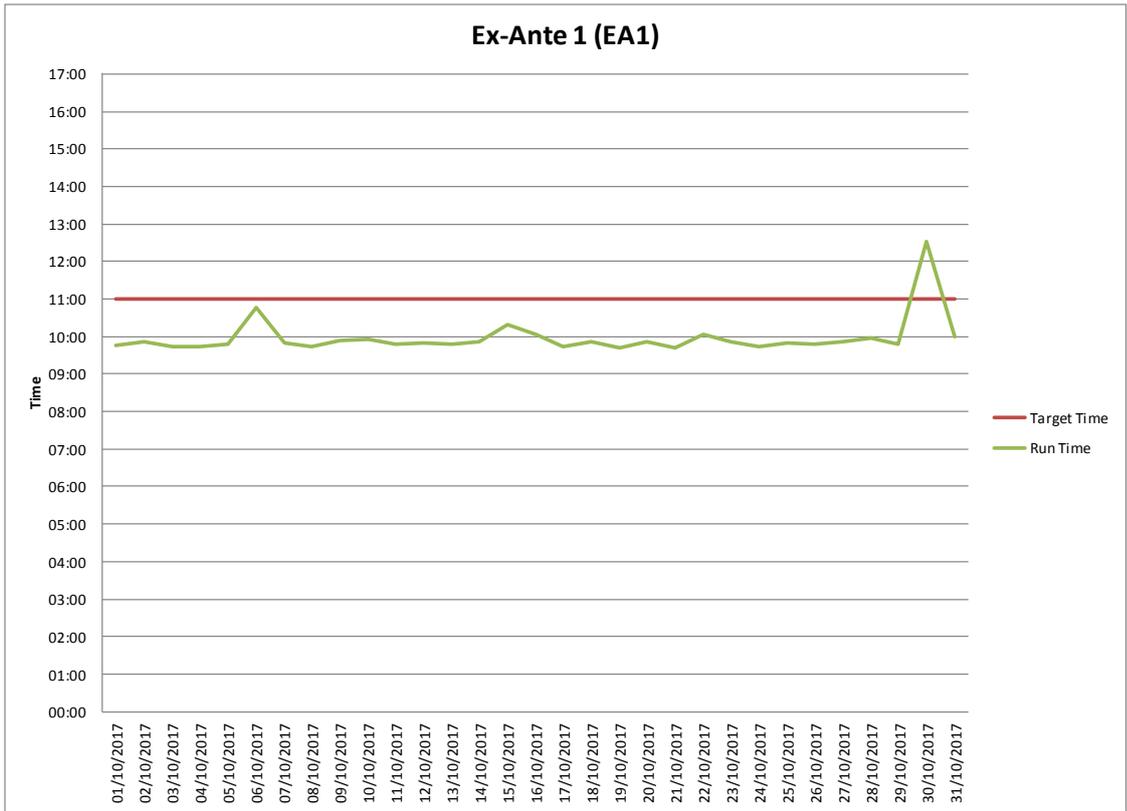


Figure 17 – Ex-Ante 1

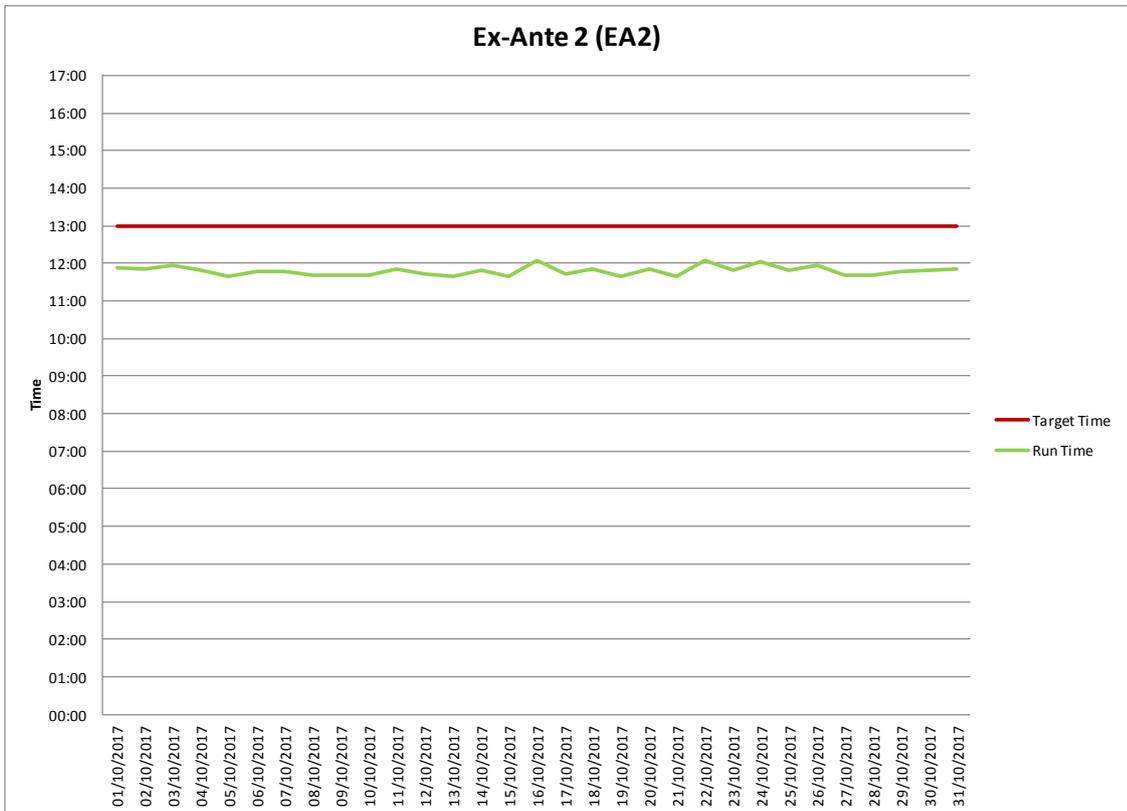


Figure 18 – Ex-Ante 2

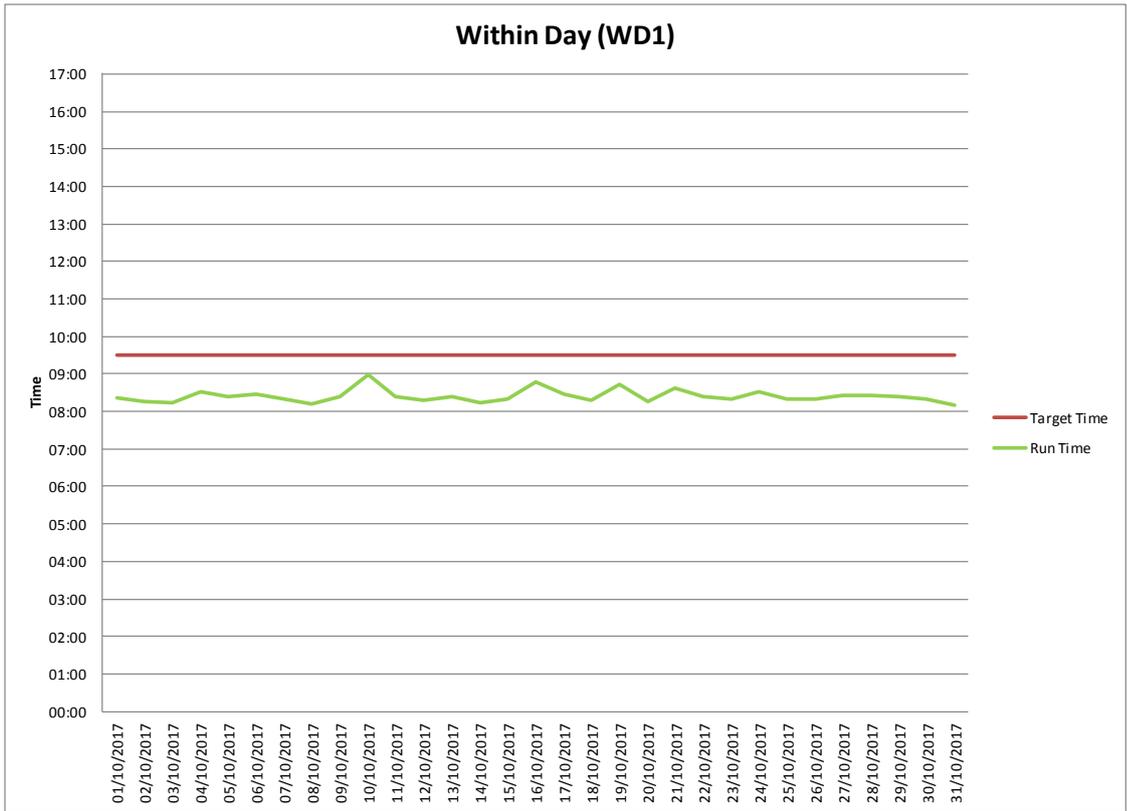


Figure 19 – Within Day 1

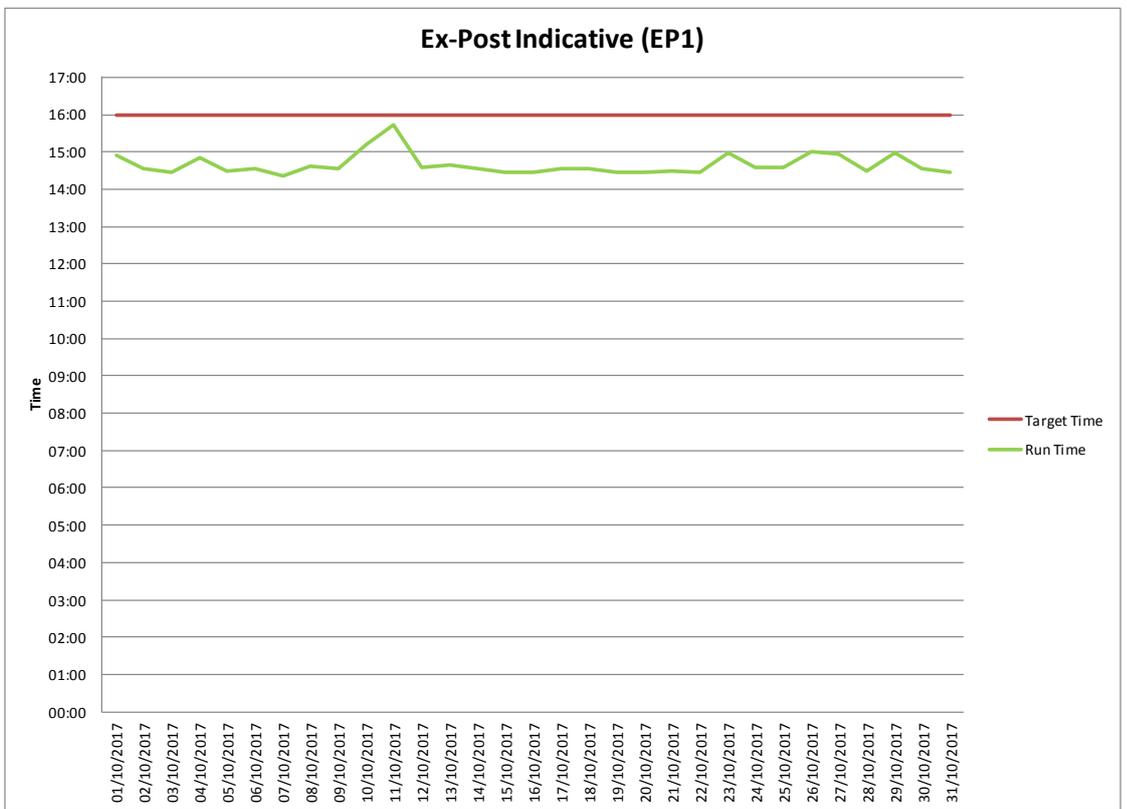


Figure 20 - Ex-Post Indicative

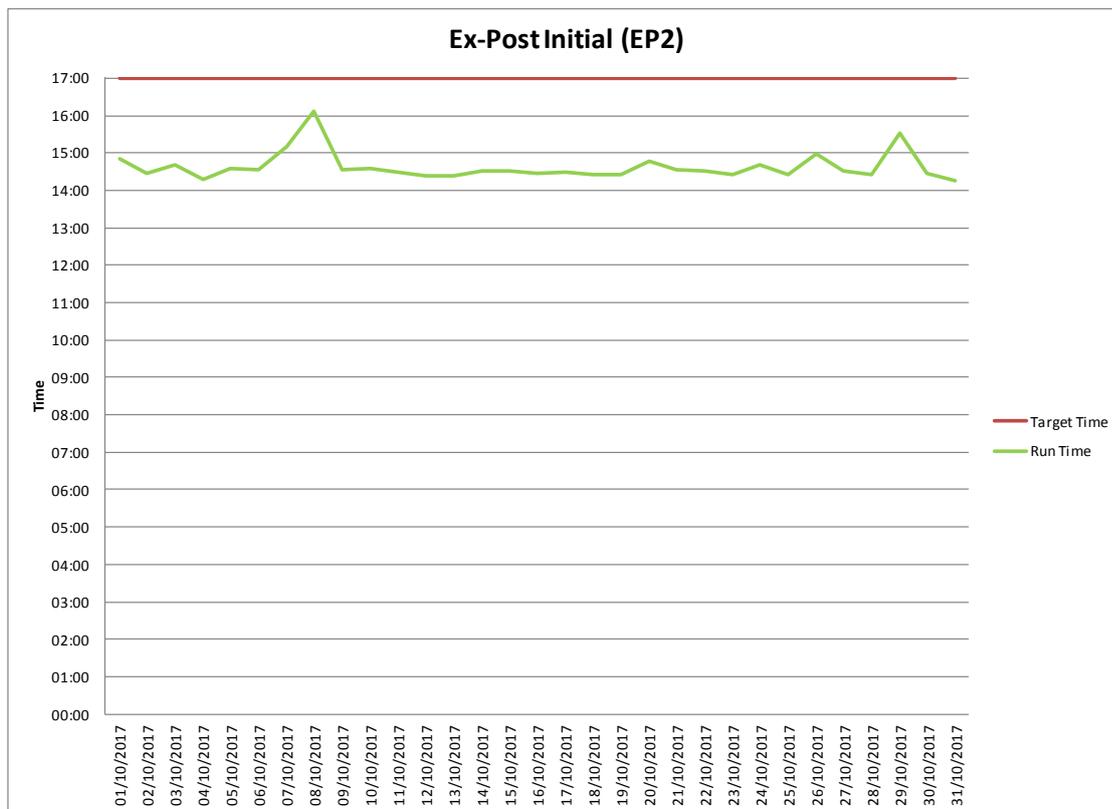


Figure 21 - Ex-Post Initial

Details of the operational timings of the Market System and Price (MSP) runs and Gate Closure are provided in [Appendix D](#).

6.4.2 MSP Algorithms

The Market Operator has two different certified solvers used to determine Unit Commitment. These solvers use the Lagrangian Relaxation (LR) and Mixed Integer Programming (MIP) methodologies.

The primary solver used in the SEM is Lagrangian Relaxation (LR). Under certain schedule outcomes where a significant pricing event is observed, the MSP software is re-run using the Mixed Integer Programming (MIP) solver. The outcomes of the two solvers are compared. Where solution determined using the MIP solver provides a better overall solution, this solution maybe selected for publishing. An updated policy document on the use of MIP has been published and is available on the SEMO website [here](#).

In October 2017, there were 12 instances of publishing with the MIP solver. A detail of historical runs and dates where the MIP algorithm has been used for published results is provided in [Appendix I](#).

1.4.1 Settlement Postings October 2017

The publication timings for Settlement runs are provided below.

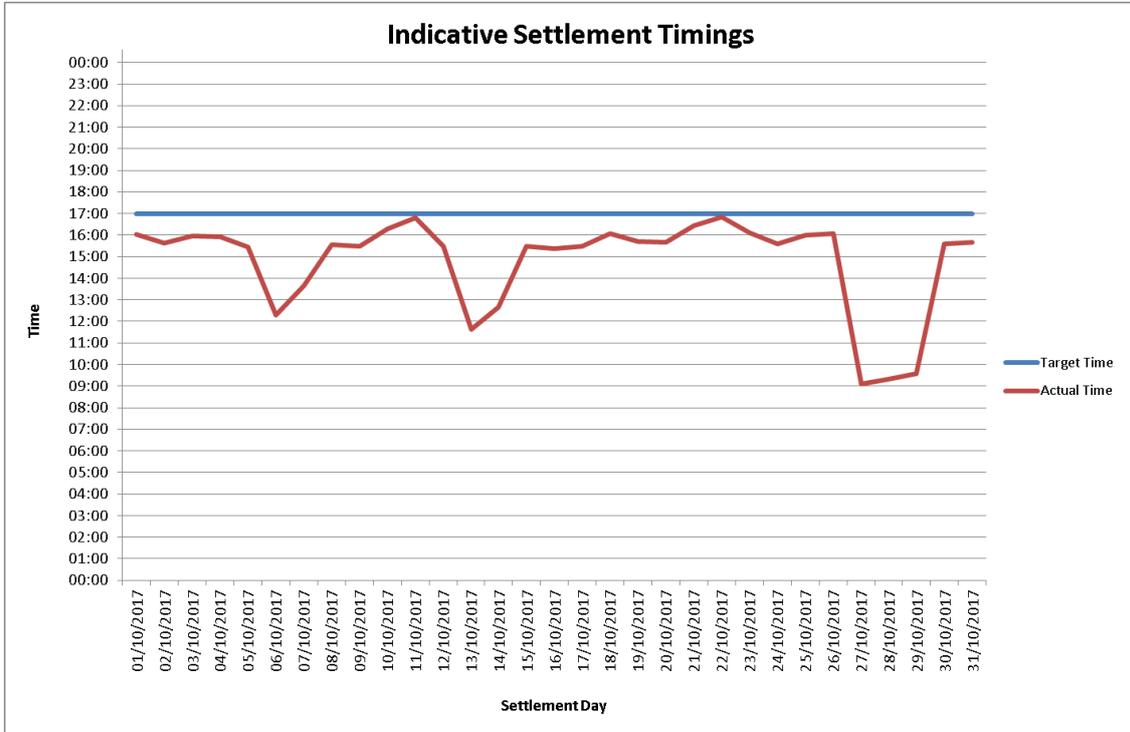


Figure 22 - Indicative Settlement Postings

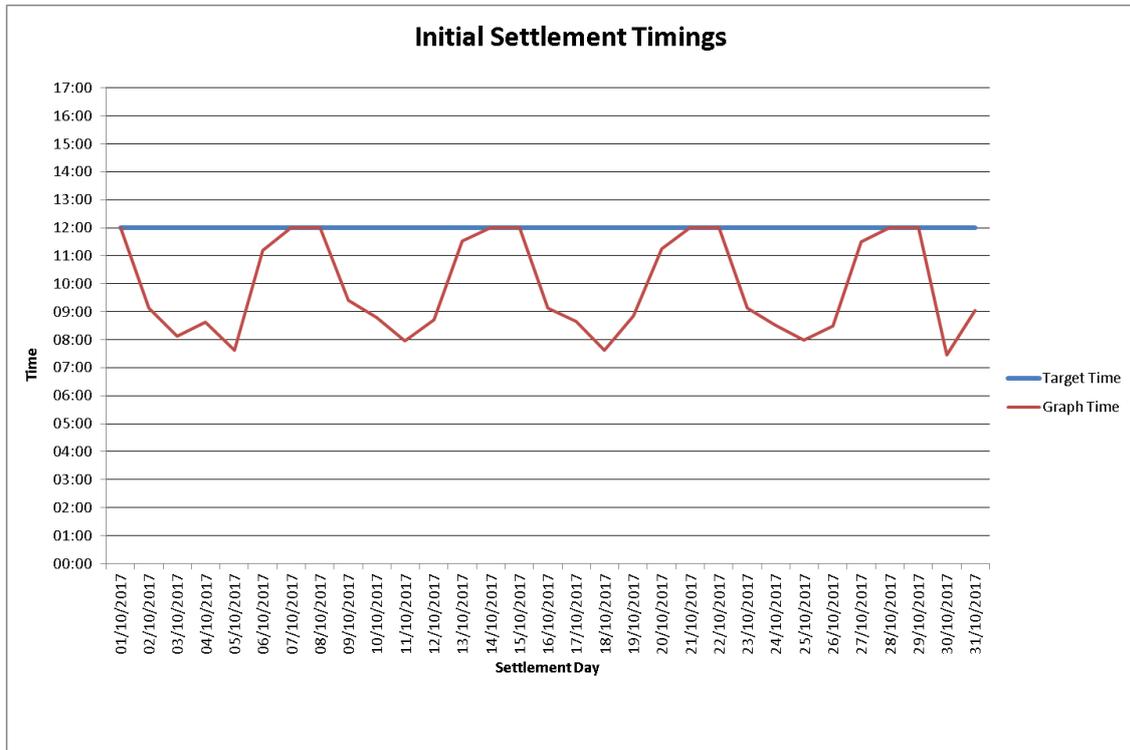


Figure 23 - Initial Settlement Postings

Further details of any delays noted above are provided in [Appendix A](#)

6.5. – No update for October 2017

Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

There were no scheduled Business Continuity tests performed during October 2017.

7.3 Communications or Systems Failures

There were no communication failures during October 2017.

7.4 Denial of Service Attacks

There was no Denial of Service Attacks during October 2017.

7.5 Submission of Parameters to RAs for Approval

There has been no requirement for submission of parameters in October 2017.

Appendix A: Detail of Trading and Settlement Code Breaches

Data Provider

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
11/10/2017	SE1	Timing	SONI MDP	File Submission	SONI resubmitted Price Effective Generation (PEG) and Non Price Effective Meter Generation (NPEG) after 14:00 on the first day (D+1). This metering is required for the Indicative Settlement run.	SONI submitted incorrect indicative metering.	PEG and NPEG Meter Generation was received at 14:17 on 11/10/2017.	Minor
12/10/2017	EP1	Timing	EirGrid TSO	File Submission	EirGrid TSO failed to submit the System Operator Dispatch Instructions (SO_DISPATCH_INSTRUCTIONS) files by 14:00 on 12/10/2017 for the Ex-Post Indicative (EP1) Pricing & Scheduling (P&S) run for 11/10/2017.	This was caused due to the Regular Gate being closed at 14:00 for Trading Day 11/10/2017 and no communication being received.	Gate was re-opened to allow for file submission and Ex-Post Indicative was published 15:58.	Minor

Table 16 – Trading and Settlement Code Breaches – Data Provider

Market Participant

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
04/10/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 35 2016 M+13.	Participant Error	A default letter was issued to the participant.	Major
04/10/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Capacity August 2016 M+13.	Participant Error	A default letter was issued to the participant.	Major
04/10/2017	Money In	Timing	Participant	Payment Default	Trailstone GMBH (PT_400188) defaulted on an Energy Week 38 2017 Initial.	Participant Error	A default letter was issued to the participant.	Major
04/10/2017	Money In	Timing	Participant	Payment Default	Gurteen Energy Supply (PT_400187) defaulted on an Energy Week 38 2017 Initial.	Participant Error	A default letter was issued to the participant.	Major
04/10/2017	Money In	Timing	Participant	Payment Default	Erova Energy Ltd (PT_500083) defaulted on an Energy Week 38 2017 Initial.	Participant Error	A default letter was issued to the participant.	Major
04/10/2017	Money In	Timing	Participant	Payment Default	Activation Energy DSU Ltd (PT_500098) defaulted on a Capacity May 2017 M+4.	Participant Error	A default letter was issued to the participant.	Major
06/10/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 35 2016 M+13.	Participant Error	A default letter was issued to the participant.	Major
11/10/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 36 2016 M+13.	Participant Error	A default letter was issued to the participant.	Major
13/10/2017	Money In	Timing	Participant	Payment Default	Quinn Windfarm Ltd (PT_400049) defaulted on an FMOC September 2017 invoice.	Participant Error	A default letter was issued to the participant.	Major
13/10/2017	Money In	Timing	Participant	Payment Default	Garves Wind Limited (PT_500044) defaulted on an FMOC September 2017 invoice.	Participant Error	A default letter was issued to the participant.	Major
13/10/2017	Money In	Timing	Participant	Payment Default	Trailstone GMBH (PT_400188) defaulted on a Capacity September 2017 Initial invoice.	Participant Error	A default letter was issued to the participant.	Major
18/10/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 37 2016 M+13.	Participant Error	A default letter was issued to the participant.	Major
20/10/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Week 37 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
25/10/2017	Money In	Timing	Participant	Payment Default	Just Energy Ireland (PT_400211) defaulted on an Energy Week 41 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
25/10/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on an Energy Week 41 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major

Table 17 – Trading and Settlement Code Breaches – Market Participants

SEMO - Pricing and Scheduling

There were no issues to report in October 2017.

SEMO – Settlements

There were no issues to report in October 2017.

SEMO - Funds Transfer

There were no issues to report in October 2017.

SEMO - Credit Management

There were no issues to report in October 2017.

SEMO – Other

There were no issues to report in October 2017.

Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Capacity	Invoice dated 29/09/2017 in respect of August 2016 shows charge_ID CPEX_N with net amount (initial) 20483.80 net amount (revised) 17997.72. difference = 2456.08 The capacity calculation is usually robust, please explain what factors resulted in a 12% revenue reduction for Aug 2016, and whether this could reoccur in future. See invoice 1000275736 and call F0074543.	F0074680	2017-10-09	2017-10-17	Settlement
Meter Generation	There was an issue with the metering at Brockaghboy wind farm from SEM effective date 12/09/17 SONI has recovered the data and submit it now as per T&SC AP16. 06:00 12/09/2017 (SEM effective time) to 00:00 19/09/2017. Meter data was restored from period ending 00:30 19/09/2017.	F0074695	2017-10-09	2017-10-10	Settlement
Dispatch Instructions	Mulreevy Windfarm, GU_401930, was outturn available from 29/09/2017. As part of this process wind forecast availabilities should have been sent as ACTA values and a LOCL put in place for the duration of the outage. This process was not executed correctly and as a result updated ACTAs and DIs are to be sent. See 'DF 036 Supporting Data'	F0074768	2017-10-11	2017-11-07	Settlement
Meter Generation	MSG for Windfarm was zero therefore no revenue was received. ESB networks have confirmed there were issues with their meter data that have been rectified.	F0074959	2017-10-23	2017-10-25	Settlement

Table 18- Formal Queries

Appendix C: List of All System Errors and Failures

The definitions of the statuses used for the List of All System Errors and Failures are:

- In Progress: Fix being identified and implemented.
- Resolved: Fix has been implemented, but reruns have not been performed.
- Closed: Required reruns have been performed and error-failure has been completely rectified.

Note: Items in the List of All System Errors and Failures that have status 'Closed' in this month's report will not appear in subsequent Monthly Market Operator Reports as they are no longer open issues.

There were no Market Application defects found in October 2017.

Issue No.	Description	Effect	Fixed from	Re-Pricing	Resettlement	Status
-	-	-	-	-	-	-

Table 19 - List of System Errors and Failures

Appendix D: Details of Operational Timings

Market Schedule and Price Runs

Operational Day	EA1 Postings		EA2 Postings		WD1 Postings		EP1 Postings		EP2 Postings	
	Target	Actual								
01/10/2017	11:00	09:46	13:00	11:53	09:30	08:21	16:00	14:55	17:00	14:51
02/10/2017	11:00	09:51	13:00	11:51	09:30	08:16	16:00	14:34	17:00	14:28
03/10/2017	11:00	09:43	13:00	11:56	09:30	08:14	16:00	14:28	17:00	14:41
04/10/2017	11:00	09:44	13:00	11:48	09:30	08:31	16:00	14:50	17:00	14:18
05/10/2017	11:00	09:48	13:00	11:39	09:30	08:24	16:00	14:29	17:00	14:35
06/10/2017	11:00	10:46	13:00	11:47	09:30	08:27	16:00	14:33	17:00	14:33
07/10/2017	11:00	09:49	13:00	11:47	09:30	08:19	16:00	14:21	17:00	15:11
08/10/2017	11:00	09:43	13:00	11:42	09:30	08:11	16:00	14:37	17:00	16:06
09/10/2017	11:00	09:53	13:00	11:42	09:30	08:23	16:00	14:34	17:00	14:33
10/10/2017	11:00	09:56	13:00	11:41	09:30	08:58	16:00	15:12	17:00	14:36
11/10/2017	11:00	09:47	13:00	11:50	09:30	08:23	16:00	15:43	17:00	14:30
12/10/2017	11:00	09:50	13:00	11:43	09:30	08:18	16:00	14:35	17:00	14:23
13/10/2017	11:00	09:48	13:00	11:39	09:30	08:24	16:00	14:38	17:00	14:24
14/10/2017	11:00	09:51	13:00	11:49	09:30	08:13	16:00	14:34	17:00	14:32
15/10/2017	11:00	10:19	13:00	11:40	09:30	08:19	16:00	14:28	17:00	14:31
16/10/2017	11:00	10:03	13:00	12:04	09:30	08:48	16:00	14:28	17:00	14:27
17/10/2017	11:00	09:44	13:00	11:43	09:30	08:27	16:00	14:34	17:00	14:29
18/10/2017	11:00	09:51	13:00	11:50	09:30	08:18	16:00	14:33	17:00	14:26
19/10/2017	11:00	09:42	13:00	11:40	09:30	08:44	16:00	14:28	17:00	14:26
20/10/2017	11:00	09:51	13:00	11:50	09:30	08:15	16:00	14:28	17:00	14:46
21/10/2017	11:00	09:41	13:00	11:40	09:30	08:37	16:00	14:30	17:00	14:34
22/10/2017	11:00	10:03	13:00	12:04	09:30	08:24	16:00	14:27	17:00	14:32
23/10/2017	11:00	09:52	13:00	11:49	09:30	08:19	16:00	14:58	17:00	14:25
24/10/2017	11:00	09:44	13:00	12:03	09:30	08:32	16:00	14:35	17:00	14:40
25/10/2017	11:00	09:49	13:00	11:48	09:30	08:20	16:00	14:35	17:00	14:25
26/10/2017	11:00	09:48	13:00	11:57	09:30	08:20	16:00	15:00	17:00	14:58
27/10/2017	11:00	09:51	13:00	11:42	09:30	08:25	16:00	14:57	17:00	14:31
28/10/2017	11:00	09:58	13:00	11:41	09:30	08:25	16:00	14:29	17:00	14:26
29/10/2017	11:00	09:48	13:00	11:46	09:30	08:23	16:00	14:58	17:00	15:31
30/10/2017	11:00	12:31	13:00	#N/A	09:30	08:20	16:00	14:33	17:00	14:27
31/10/2017	11:00	10:00	13:00	11:50	09:30	08:10	16:00	14:28	17:00	14:16

Table 20 – MSP Runs

Settlement Runs

Indicative				Initial			
Trading	Actual	Target	Actual	Trading	Actual	Target	Actual
Day	Date	Time	Time	Day	Date	Time	Time
01/10/2017	02/10/2017	17:00	16:02	01/10/2017	06/10/2017	12:00	12:00
02/10/2017	03/10/2017	17:00	15:38	02/10/2017	09/10/2017	12:00	09:08
03/10/2017	04/10/2017	17:00	15:57	03/10/2017	10/10/2017	12:00	08:08
04/10/2017	05/10/2017	17:00	15:56	04/10/2017	11/10/2017	12:00	08:37
05/10/2017	06/10/2017	17:00	15:27	05/10/2017	12/10/2017	12:00	07:37
06/10/2017	09/10/2017	17:00	12:17	06/10/2017	13/10/2017	12:00	11:11
07/10/2017	09/10/2017	17:00	13:39	07/10/2017	13/10/2017	12:00	12:00
08/10/2017	09/10/2017	17:00	15:34	08/10/2017	13/10/2017	12:00	12:00
09/10/2017	10/10/2017	17:00	15:29	09/10/2017	16/10/2017	12:00	09:24
10/10/2017	11/10/2017	17:00	16:18	10/10/2017	17/10/2017	12:00	08:48
11/10/2017	12/10/2017	17:00	16:48	11/10/2017	18/10/2017	12:00	07:58
12/10/2017	13/10/2017	17:00	15:28	12/10/2017	19/10/2017	12:00	08:42
13/10/2017	16/10/2017	17:00	11:37	13/10/2017	20/10/2017	12:00	11:32
14/10/2017	16/10/2017	17:00	12:40	14/10/2017	20/10/2017	12:00	12:00
15/10/2017	16/10/2017	17:00	15:29	15/10/2017	20/10/2017	12:00	12:00
16/10/2017	17/10/2017	17:00	15:23	16/10/2017	23/10/2017	12:00	09:08
17/10/2017	18/10/2017	17:00	15:29	17/10/2017	24/10/2017	12:00	08:40
18/10/2017	19/10/2017	17:00	16:04	18/10/2017	25/10/2017	12:00	07:38
19/10/2017	20/10/2017	17:00	15:42	19/10/2017	26/10/2017	12:00	08:51
20/10/2017	23/10/2017	17:00	15:39	20/10/2017	27/10/2017	12:00	11:15
21/10/2017	23/10/2017	17:00	16:27	21/10/2017	27/10/2017	12:00	12:00
22/10/2017	23/10/2017	17:00	16:51	22/10/2017	27/10/2017	12:00	12:00
23/10/2017	24/10/2017	17:00	16:07	23/10/2017	30/10/2017	12:00	09:08
24/10/2017	25/10/2017	17:00	15:36	24/10/2017	31/10/2017	12:00	08:31
25/10/2017	26/10/2017	17:00	16:00	25/10/2017	01/11/2017	12:00	08:00
26/10/2017	27/10/2017	17:00	16:05	26/10/2017	02/11/2017	12:00	08:29
27/10/2017	31/10/2017	17:00	09:07	27/10/2017	03/11/2017	12:00	11:30
28/10/2017	31/10/2017	17:00	09:20	28/10/2017	03/11/2017	12:00	12:00
29/10/2017	31/10/2017	17:00	09:35	29/10/2017	03/11/2017	12:00	12:00
30/10/2017	31/10/2017	17:00	15:36	30/10/2017	06/11/2017	12:00	07:28
31/10/2017	01/11/2017	17:00	15:39	31/10/2017	07/11/2017	12:00	09:02

Table 22 – Settlement Runs

Appendix E: Imperfections Charge

This appendix provides daily data for the Constraint Payments, Uninstructed Imbalance Payments and Imperfections Charges, and as well as the weekly values of Make Whole Payments and Testing Charges.

The following table is updated to take account of the values calculated in the Initial Settlement runs only.

Historical information will be shown in Appendix E until completion of the current financial year. Information prior to that can be found in previous Monthly Market Operator Reports.

Date	Constraint Payments	Uninstructed Imbalance Payments	Imperfections Charges
01/10/2017	€1,128,237.48	€1,576.89	-€378,357.91
02/10/2017	€753,728.56	-€6,605.15	-€425,189.34
03/10/2017	€675,919.11	-€28,147.68	-€459,383.40
04/10/2017	€790,094.79	-€12,276.51	-€454,836.20
05/10/2017	€598,243.60	€562.44	-€459,293.23
06/10/2017	€978,560.07	-€29,473.35	-€470,365.91
07/10/2017	€685,778.92	€16,406.92	-€422,341.15
08/10/2017	€606,589.61	-€1,693.38	-€428,179.56
09/10/2017	€628,023.58	-€25,009.27	-€472,072.33
10/10/2017	€661,294.91	-€12,088.17	-€459,471.05
11/10/2017	€856,913.05	€4,366.95	-€454,481.54
12/10/2017	€554,696.70	-€4,132.36	-€460,499.75
13/10/2017	€509,204.72	€8,000.04	-€455,413.62
14/10/2017	€589,155.41	€19,834.27	-€422,296.60
15/10/2017	€532,349.25	-€2,895.36	-€408,090.08
16/10/2017	€1,576,989.30	€5,893.68	-€398,171.53
17/10/2017	€321,452.97	-€16,920.37	-€449,831.94
18/10/2017	€534,843.18	-€15,961.49	-€477,249.12
19/10/2017	€697,291.71	-€10,288.42	-€473,258.23
20/10/2017	€604,918.01	-€16,853.47	-€470,091.71

21/10/2017	€910,633.73	-€6,523.05	-€420,863.08
22/10/2017	€746,292.37	-€6,931.78	-€410,457.17
23/10/2017	€583,009.53	€33,581.90	-€477,473.82
24/10/2017	€609,201.47	-€5,455.37	-€486,607.12
25/10/2017	€747,119.39	€5,407.90	-€487,567.97
26/10/2017	€724,380.32	-€9,639.67	-€513,633.27
27/10/2017	€741,948.87	-€21,049.38	-€501,594.81
28/10/2017	€638,373.17	€16,917.71	-€429,220.57
29/10/2017	€504,486.15	€11,661.56	-€430,541.95
30/10/2017	€560,302.03	€18,097.04	-€450,579.60
31/10/2017	€774,526.45	-€7,313.17	-€475,411.26

Table 22 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

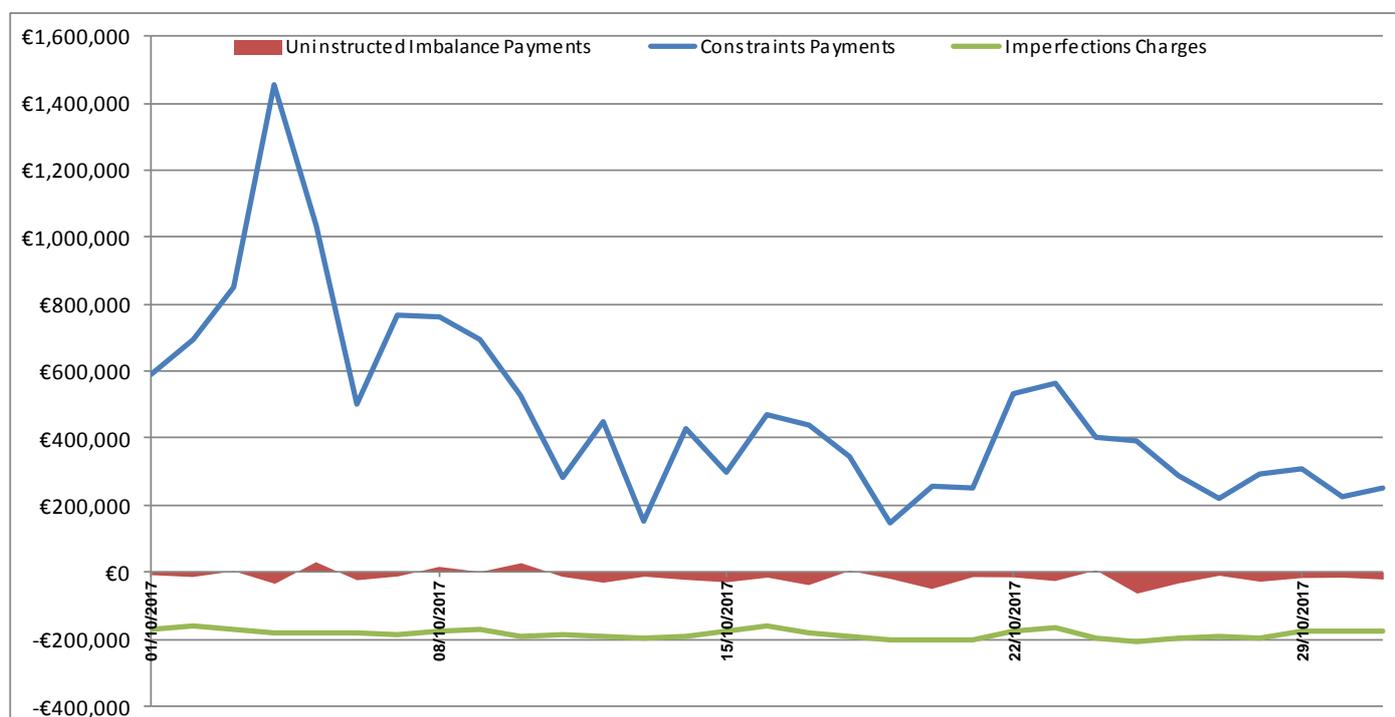


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
40	€250,374.71
41	€83,919.38
42	€25,546.52
43	€167,868.48

Table 23 - Make Whole Payments

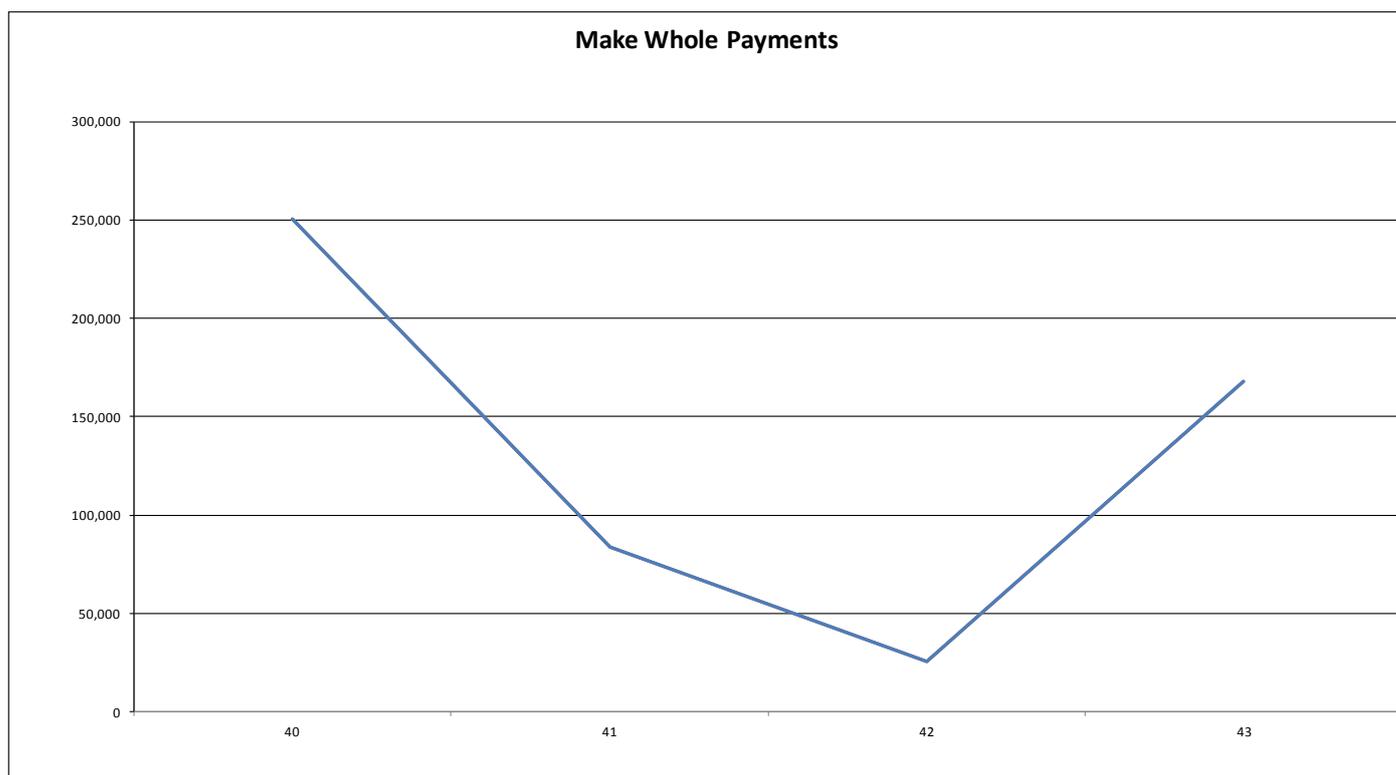


Figure 25 - Make Whole Payments

Week No	Testing Charges
40	-€47,420.09
41	-€31,943.73
42	-€37,408.75
43	-€44,370.66

Table 24 - Testing Charges



Figure 26 - Testing Charges

Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during October 2017 where the Commercial Offer Data was based on a Participant submission within the Market window, or based on Standing Data or Default Data submitted.

PNAME	RNAME	Manual	Adjusted	Standing	COUNT
PT_400090	DSU_401610	30			30
PT_400138	DSU_401590	31			31
PT_400090	DSU_401620	30			30
PT_400133	DSU_401910	8			8
PT_500067	DSU_501380	17			17
PT_400090	DSU_401270	30			30
PT_400106	DSU_401330	35			35
PT_400111	DSU_401390	10			10
PT_400138	DSU_402040	31			31
PT_500105	DSU_501510	29			29
PT_400124	DSU_401490	30			30
PT_400021	GU_401990	22			22
PT_400024	GU_400120	31			31
PT_400024	GU_400121	31			31
PT_400030	GU_400180	35			35
PT_400030	GU_400181	35			35
PT_400030	GU_400182	35			35
PT_400030	GU_400183	35			35
PT_400030	GU_400200	35			35
PT_400030	GU_400201	35			35
PT_400030	GU_400202	35			35
PT_400030	GU_400203	35			35
PT_400030	GU_400210	35			35
PT_400030	GU_400211	35			35
PT_400030	GU_400220	35			35
PT_400030	GU_400221	35			35
PT_400030	GU_400240	35			35
PT_400030	GU_400250	35			35
PT_400030	GU_400251	35			35
PT_400030	GU_400252	35			35
PT_400030	GU_400260	35			35
PT_400030	GU_400270	35			35
PT_400030	GU_400271	35			35
PT_400030	GU_400272	35			35
PT_400030	GU_400280	35			35
PT_400030	GU_400281	35			35
PT_400030	GU_400290	35			35
PT_400030	GU_400300	35			35
PT_400030	GU_400311	35			35
PT_400030	GU_400324	36			36
PT_400030	GU_400325	36			36
PT_400030	GU_400360	36			36
PT_400030	GU_400361	36			36
PT_400030	GU_400362	36			36

Market Operator Monthly Report

PT_400030	GU_400363	36		36
PT_400030	GU_400370	35		35
PT_400030	GU_400850	35		35
PT_400032	GU_400430	31		31
PT_400034	GU_400940	30		30
PT_400034	GU_401090	31		31
PT_400034	GU_401440	31		31
PT_400034	GU_401680	31		31
PT_400035	GU_400480	52		52
PT_400037	GU_400500	31		31
PT_400041	GU_400530	62		62
PT_400044	GU_400540	52		52
PT_400054	GU_400620	31		31
PT_400055	GU_400630	31		31
PT_400064	GU_400750	31		31
PT_400064	GU_400751	31		31
PT_400064	GU_400752	31		31
PT_400064	GU_400753	31		31
PT_400064	GU_400762	31		31
PT_400064	GU_400770	31		31
PT_400064	GU_400771	31		31
PT_400064	GU_400780	31		31
PT_400064	GU_400781	31		31
PT_400075	GU_400930	44		44
PT_400077	GU_400950	31		31
PT_400078	GU_401010	31		31
PT_400078	GU_401011	31		31
PT_400165	GU_401840	31		31
PT_400172	GU_401860	31		31
PT_400198	GU_402030	32		32
PT_500021	GU_501620	22		22
PT_500021	GU_501630	22		22
PT_500024	GU_500040	37		37
PT_500024	GU_500041	30		30
PT_500027	GU_500130	91		91
PT_500027	GU_500131	91		91
PT_500027	GU_500140	91		91
PT_500034	GU_501350	31		31
PT_500040	GU_500281	62		62
PT_500040	GU_500282	61		61
PT_500040	GU_500283	31		31
PT_500040	GU_500284	31		31
PT_500045	GU_500820	31		31
PT_500045	GU_500821	31		31
PT_500045	GU_500822	31		31
PT_500045	GU_500823	31		31
PT_500045	GU_500824	31		31
PT_500045	GU_500825	31		31
PT_500048	GU_500904	48		48
PT_500050	GU_501040	31		31
PT_500050	GU_501050	31		31
PT_500050	GU_501150	31		31
PT_500050	GU_501190	31		31

Market Operator Monthly Report

PT_500050	GU_501440	31		31
PT_500053	GU_501130	31		31
PT_500066	GU_501210	31		31
PT_500083	I_NIMOYLE	91		91
PT_400201	I_ROIEWIC	31		31
PT_500075	I_NIMOYLE	92		92
PT_500024	I_NIMOYLE	31		31
PT_400163	I_ROIEWIC	91		91
PT_500069	I_NIMOYLE	92		92
PT_400157	I_ROIEWIC	55		55
PT_500031	I_NIMOYLE	31		31
PT_400096	I_ROIEWIC	91		91
PT_500037	I_NIMOYLE	5		5
PT_400136	I_ROIEWIC	92		92
PT_400168	I_ROIEWIC	77		77
PT_500081	I_NIMOYLE	55		55
PT_400115	I_ROIEWIC	31		31
PT_400188	I_ROIEWIC	9		9
PT_500107	I_NIMOYLE	8		8
PT_500070	I_NIMOYLE	63		63
PT_500120	I_NIMOYLE	30		30
PT_400164	I_ROIEWIC	50		50
PT_400108	I_ROIEWIC	65		65
PT_400170	I_ROIEWIC	39		39
PT_400171	I_ROIEWIC	55		55
PT_500088	I_NIMOYLE	36		36
PT_500085	I_NIMOYLE	50		50
PT_400099	I_ROIEWIC	39		39
PT_400030	I_ROIEWIC	30		30
PT_500092	I_NIMOYLE	52		52
PT_400116	DSU_401400		31	31
PT_400116	DSU_402120		31	31
PT_400144	DSU_401660		31	31
PT_400090	DSU_401620		1	1
PT_400124	DSU_401490		1	1
PT_400090	DSU_401800		31	31
PT_400090	DSU_401850		31	31
PT_500064	DSU_501200		31	31
PT_500078	DSU_501330		31	31
PT_500099	DSU_501460		31	31
PT_500105	DSU_501510		2	2
PT_400090	DSU_401270		1	1
PT_400090	DSU_401610		1	1
PT_400111	DSU_401390		21	21
PT_500067	DSU_501380		14	14
PT_400116	DSU_402100		31	31
PT_400133	DSU_401910		24	24
PT_400116	DSU_401870		31	31
PT_400124	DSU_401880		31	31
PT_400133	DSU_401530		31	31
PT_500098	DSU_501450		31	31
PT_500108	DSU_501560		31	31
PT_400116	DSU_402090		31	31

Market Operator Monthly Report

PT_400021	GU_400021			31	31
PT_400021	GU_400050			31	31
PT_400021	GU_400060			31	31
PT_400021	GU_400070			31	31
PT_400021	GU_400080			31	31
PT_400021	GU_400591			31	31
PT_400021	GU_400600			31	31
PT_400021	GU_400910			31	31
PT_400021	GU_400920			31	31
PT_400021	GU_401080			31	31
PT_400021	GU_401380			31	31
PT_400021	GU_401640			31	31
PT_400021	GU_401960			31	31
PT_400025	GU_400130			31	31
PT_400034	GU_400940			1	1
PT_400038	GU_400550			31	31
PT_400050	GU_400650			31	31
PT_400050	GU_400660			31	31
PT_400050	GU_401000			31	31
PT_400050	GU_401060			31	31
PT_400050	GU_401150			31	31
PT_400050	GU_401240			31	31
PT_400050	GU_401250			31	31
PT_400050	GU_401280			31	31
PT_400050	GU_401290			31	31
PT_400050	GU_401360			31	31
PT_400050	GU_401790			31	31
PT_400050	GU_401920			31	31
PT_400050	GU_401930			31	31
PT_400050	GU_402010			31	31
PT_400062	GU_400730			31	31
PT_400062	GU_400731			31	31
PT_400062	GU_400840			31	31
PT_400066	GU_401540			31	31
PT_400066	GU_401820			31	31
PT_400082	GU_401100			31	31
PT_400087	GU_401230			31	31
PT_400148	GU_401690			31	31
PT_400150	GU_401700			31	31
PT_400151	GU_401770			31	31
PT_400151	GU_401780			31	31
PT_400152	GU_401710			31	31
PT_400152	GU_401720			31	31
PT_400152	GU_401730			31	31
PT_400152	GU_401740			31	31
PT_400152	GU_401750			31	31
PT_400152	GU_401760			31	31
PT_400162	GU_401830			31	31
PT_400178	GU_401900			31	31
PT_400197	GU_402020			31	31
PT_500021	GU_500010			31	31
PT_500021	GU_500740			31	31
PT_500021	GU_501160			31	31

Market Operator Monthly Report

PT_500021	GU_501500			31	31
PT_500021	GU_501520			31	31
PT_500024	GU_500041			1	1
PT_500032	GU_500211			31	31
PT_500032	GU_501120			31	31
PT_500032	GU_501280			31	31
PT_500032	GU_501290			31	31
PT_500032	GU_501300			31	31
PT_500032	GU_501400			31	31
PT_500032	GU_501530			31	31
PT_500032	GU_501540			31	31
PT_500032	GU_501570			31	31
PT_500039	GU_500270			31	31
PT_500044	GU_500720			31	31
PT_500047	GU_500790			31	31
PT_500061	GU_501170			31	31
PT_500062	GU_501180			31	31
PT_500073	GU_501230			31	31
PT_500074	GU_501250			31	31
PT_500089	GU_501360			31	31
	Total	4891	0	2671	7562
	Percentage	64.68%	0.00%	35.32%	100.00%

Table 25 – Commercial Offer Data Used

Appendix G: Total Charges and Payments Data

The tables below list historical values for Total Charges and Total Payments in the SEM by month and currency since start of the SEM.

- Month of inclusion based on invoice date.
- Amounts are after application of Settlement Reallocation.

Market		Energy	Capacity	Market Operator	M+4 Energy	M+4 Capacity	M+4 Market Operator	M+13 Energy	M+13 Capacity	M+13 Market Operator	Ad-hoc Energy	Ad-hoc Capacity	Ad-hoc Market Operator	Total
Apr-16	ROI	£49,184,916.98	£15,501,521.21	£1,127,381.20	£270,121.81	£95,679.82	£3,486.64	£68,851.15	£18,608.43	£470.47	£0.00	£0.00	£0.00	66,271,037.71
	NI	£17,362,464.69	£4,104,501.10	£265,764.31	£105,262.33	£39,607.51	£1,261.76	£60,590.82	£22,415.09	£387.37	£0.00	£0.00	£0.00	21,962,254.98
May-16	ROI	£49,184,916.98	£15,501,521.21	£1,127,381.20	£270,121.81	£95,679.82	£3,486.64	£68,851.15	£18,608.43	£470.47	£0.00	£0.00	£0.00	66,271,037.71
	NI	£17,362,464.69	£4,104,501.10	£265,764.31	£105,262.33	£39,607.51	£1,261.76	£60,590.82	£22,415.09	£387.37	£0.00	£0.00	£0.00	21,962,254.98
Jun-16	ROI	£68,417,749.71	£27,553,403.45	£786,234.64	£143,736.91	£161,777.77	£822.69	£56,371.33	£22,936.28	£671.74	£0.00	£0.00	£0.00	97,143,704.52
	NI	£26,623,159.66	£8,331,870.29	£208,457.12	£84,873.05	£12,963.18	£479.73	£65,781.22	£10,545.70	£290.27	£0.00	£0.00	£0.00	35,338,320.22
Jul-16	ROI	£57,935,825.17	£17,094,463.29	£1,471,499.46	£416,561.74	£228,953.88	£5,030.22	£478,630.27	£28,077.61	£475.98	£105,568.09	£0.00	£0.00	77,765,085.71
	NI	£21,413,999.73	£4,706,369.93	£356,309.07	£111,802.15	£87,327.04	£1,297.05	£47,648.29	£20,761.72	£299.44	£20,454.46	£0.00	£0.00	26,766,268.88
Aug-16	ROI	£53,990,805.17	£17,305,691.08	£1,082,679.75	£206,642.80	£45,575.08	£1,900.74	£45,391.41	£12,311.23	£322.89	£0.00	£0.00	£0.00	72,691,320.15
	NI	£13,463,141.18	£3,676,029.87	£272,060.88	£22,683.94	£6,912.45	£294.54	£2,906.60	£2,273.87	£18.25	£0.00	£0.00	£0.00	17,446,321.58
Sep-16	ROI	£60,365,808.65	£17,305,691.08	£1,381,850.46	£313,754.10	£83,238.29	£3,816.76	£47,911.41	£8,968.97	£354.53	£0.00	£2,861.23	£0.00	79,514,255.48
	NI	£17,693,943.87	£3,676,029.87	£349,566.95	£32,666.66	£7,720.07	£412.92	£4,847.16	£1,188.42	£33.50	£0.00	£532.20	£0.00	21,766,941.62
Oct-16	ROI	£64,937,764.02	£20,215,673.79	£813,429.31	£334,853.66	£96,213.40	£3,776.71	£47,334.32	£14,216.75	£359.61	£0.00	£0.00	£0.00	86,463,621.57
	NI	£25,730,620.36	£4,935,559.58	£220,252.61	£81,663.62	£17,690.00	£978.05	£11,878.35	£2,104.44	£85.45	£0.00	£0.00	£0.00	31,000,832.46
Nov-16	ROI	£79,083,041.86	£26,426,844.27	£746,953.39	£256,783.77	£17,150.99	£3,451.80	£35,169.15	£97,643.02	£618.36	£325,964.05	£0.00	£0.00	107,053,620.66
	NI	£30,128,694.39	£6,448,578.49	£206,907.51	£173,676.38	£60,271.90	£2,148.44	£42,708.63	£23,836.40	£422.17	£834.57	£0.00	£0.00	37,088,078.88
Dec-16	ROI	£91,892,862.67	£27,754,182.60	£986,254.46	£431,619.50	£110,272.39	£6,055.55	£98,070.16	£32,223.23	£1,076.34	£505,299.63	£0.00	£0.00	121,817,916.53
	NI	£33,787,693.11	£6,963,652.60	£260,893.62	£238,761.61	£53,464.74	£2,658.52	£27,575.46	£53,836.78	£304.21	£775.23	£0.00	£0.00	41,348,615.88
Jan-17	ROI	£71,678,885.81	£27,768,345.87	£756,389.76	£157,498.92	£96,027.36	£2,212.62	£63,104.42	£38,920.56	£719.17	£0.00	£0.00	£0.00	100,562,104.49
	NI	£24,623,245.15	£6,418,062.31	£203,136.05	£105,611.21	£32,330.86	£1,272.30	£50,004.40	£12,723.31	£166.24	£0.00	£0.00	£0.00	31,446,551.83
Feb-17	ROI	£68,417,749.71	£27,553,403.45	£786,234.64	£143,736.91	£161,777.77	£822.69	£56,371.33	£22,936.28	£671.74	£0.00	£0.00	£0.00	97,143,704.52
	NI	£26,623,159.66	£8,331,870.29	£208,457.12	£84,873.05	£12,963.18	£479.73	£65,781.22	£10,545.70	£290.27	£0.00	£0.00	£0.00	35,338,320.22
Mar-17	ROI	£66,590,904.20	£25,999,739.73	£896,638.56	£530,904.65	£113,905.95	£3,188.17	£40,679.29	£13,853.63	£638.11	£0.00	£0.00	£0.00	94,190,452.29
	NI	£27,088,752.15	£8,001,218.02	£232,052.21	£72,287.75	£14,630.37	£409.39	£46,677.74	£14,276.96	£577.22	£0.00	£0.00	£0.00	35,470,881.81
Apr-17	ROI	£56,165,195.56	£24,426,665.10	£727,000.54	£536,698.08	£142,324.28	£3,531.15	£45,125.24	£18,620.07	£596.12	£0.00	£0.00	£0.00	82,065,756.14
	NI	£17,358,282.80	£7,584,088.13	£179,414.93	£127,102.29	£27,651.79	£859.38	£60,044.36	£25,589.38	£801.90	£0.00	£0.00	£0.00	25,363,834.96
May-17	ROI	£44,648,195.71	£19,781,317.86	£700,841.87	£489,950.65	£142,425.65	£2,974.84	£51,455.64	£17,883.26	£699.50	£0.00	£0.00	£0.00	65,835,744.98
	NI	£16,964,613.24	£5,548,133.24	£169,862.58	£108,402.43	£29,733.84	£622.87	£88,001.70	£33,781.45	£1,179.59	£0.00	£0.00	£0.00	22,944,330.94
Jun-17	ROI	£50,996,714.24	£18,508,982.13	£841,895.70	£869,713.90	£198,750.84	£4,934.88	£65,063.85	£16,276.93	£866.44	£0.00	£0.00	£0.00	71,503,198.91
	NI	£18,134,740.54	£5,385,407.39	£213,872.53	£138,837.43	£30,982.10	£823.10	£148,093.71	£42,384.03	£1,836.46	£0.00	£0.00	£0.00	24,096,977.29
Jul-17	ROI	£53,839,556.76	£18,469,543.17	£689,850.17	£859,675.25	£105,231.46	£1,843.13	£47,200.17	£31,615.25	£600.31	£0.00	£0.00	£0.00	74,045,115.67
	NI	£16,871,524.38	£4,970,215.26	£169,319.17	£206,699.63	£26,416.99	£609.40	£122,939.50	£47,342.00	£1,369.62	£0.00	£0.00	£0.00	22,416,435.95
Aug-17	ROI	£49,715,868.99	£16,597,661.81	£670,887.89	£49,405.94	£1,189.91	£131,434.13	£36,135.62	£1,706.37	£1.41	£0.00	£0.00	£0.00	67,393,859.84
	NI	£15,604,259.43	£4,539,253.85	£174,636.65	£71,879.64	£24,102.39	£515.19	£11,674.35	£2,799.04	£123.94	£52.50	£0.00	£0.00	20,429,296.98
Sep-17	ROI	£74,262,007.43	£18,246,287.18	£871,978.12	£297,529.91	£58,164.04	£2,322.12	£47,978.01	£13,495.87	£504.35	£163,227.43	£0.00	£0.00	93,963,494.46
	NI	£26,213,019.19	£5,128,326.58	£230,350.58	£81,360.23	£23,139.40	£499.97	£13,331.20	£6,511.87	£297.83	£140,679.45	£0.00	£0.00	31,837,516.30
Oct-17	ROI	£64,383,218.39	£18,184,490.56	£721,054.00	£289,078.01	£109,973.68	£2,586.90	£32,785.64	£11,166.82	£447.56	£0.00	£0.00	£0.00	83,734,801.56
	NI	£18,177,387.18	£5,365,068.45	£188,849.52	£78,539.81	£23,503.63	£650.99	£10,931.60	£2,877.72	£134.29	£0.00	£0.00	£0.00	23,847,943.19

Table 26 – Total Charges by Month

Market Operator Monthly Report

Market		Energy	Capacity	M+4 Energy	M+4 Capacity	M+4 Market Operator	M+13 Energy	M+13 Capacity	M+13 Market Operator	Ad-hoc Energy	Ad-hoc Capacity	Ad-hoc Market Operator	Total
Apr-16	ROI	€42,783,609.22	€14,666,602.66	€270,868.61	€95,779.49	€3,486.64	€70,280.71	€18,875.44	€440.06	€0.00	€0.00	€0.00	€57,909,942.83
	NI	€17,390,686.96	€4,751,740.09	€105,176.58	€39,633.85	€1,261.80	€59,561.31	€22,324.84	€380.36	€0.00	€0.00	€0.00	€22,370,765.79
May-16	ROI	€42,783,609.22	€14,666,602.66	€270,868.61	€95,779.49	€3,486.64	€70,280.71	€18,875.44	€440.06	€0.00	€0.00	€0.00	€57,909,942.83
	NI	€17,390,686.96	€4,751,740.09	€105,176.58	€39,633.85	€1,261.80	€59,561.31	€22,324.84	€380.36	€0.00	€0.00	€0.00	€22,370,765.79
Jun-16	ROI	€66,627,076.69	€17,573,435.30	€379,168.29	€109,325.13	€2,586.81	€31,769.76	€11,103.25	€435.24	€0.00	€0.00	€0.00	€84,734,900.47
	NI	€22,549,009.87	€5,897,549.80	€79,103.03	€24,197.26	€648.45	€10,935.82	€2,957.83	€134.12	€0.00	€0.00	€0.00	€28,564,536.18
Jul-16	ROI	€53,840,170.28	€17,104,842.75	€415,112.37	€247,294.27	€5,027.94	€81,626.06	€27,799.39	€410.18	€208,424.28	€0.00	€0.00	€71,930,707.52
	NI	€20,282,958.20	€4,658,773.71	€111,871.11	€72,753.11	€1,297.25	€52,180.96	€20,969.56	€283.82	€27,450.94	€0.00	€0.00	€25,228,538.66
Aug-16	ROI	€47,925,137.80	€17,191,335.52	€205,102.11	€45,376.26	€1,900.83	€46,132.09	€12,064.34	€323.09	€0.00	€0.00	€0.00	€65,427,371.95
	NI	€13,904,887.07	€3,784,287.20	€26,983.41	€6,959.89	€294.55	€2,874.89	€2,261.38	€18.45	€0.00	€0.00	€0.00	€17,728,566.84
Sep-16	ROI	€57,725,046.88	€17,191,335.52	€316,785.33	€82,962.59	€4,207.29	€47,913.59	€8,957.12	€354.44	€0.00	€295.52	€0.00	€75,377,858.28
	NI	€15,918,157.70	€3,784,287.20	€32,790.23	€7,927.66	€416.78	€4,847.59	€1,185.01	€33.38	€0.00	€2,875.40	€0.00	€19,752,520.95
Oct-16	ROI	€69,972,953.07	€20,863,182.68	€338,586.57	€95,502.31	€4,333.45	€87,892.25	€14,736.13	€359.59	€0.00	€0.00	€0.00	€91,377,546.05
	NI	€25,586,214.40	€4,376,394.83	€77,787.35	€18,365.43	€977.30	€11,874.98	€1,647.25	€85.65	€0.00	€0.00	€0.00	€30,073,347.19
Nov-16	ROI	€83,487,123.38	€26,395,539.72	€257,668.44	€80,165.18	€3,418.32	€94,355.82	€39,305.46	€618.26	€301,690.28	€0.00	€72.04	€110,659,956.90
	NI	€31,306,401.54	€6,468,679.78	€173,737.66	€74,786.08	€2,148.38	€43,017.39	€20,271.13	€422.26	€832.79	€0.00	€0.00	€38,090,297.01
Dec-16	ROI	€95,266,581.65	€27,572,460.28	€447,482.30	€114,736.82	€6,025.28	€97,017.33	€32,733.66	€1,076.70	€496,715.14	€0.00	€1,512.38	€124,036,341.54
	NI	€35,841,749.90	€6,989,191.13	€197,537.73	€49,301.94	€2,219.49	€25,889.47	€12,309.63	€304.11	€87.68	€0.00	€0.00	€43,118,591.08
Jan-17	ROI	€75,626,838.95	€26,766,502.24	€158,454.05	€90,014.92	€2,220.87	€57,510.67	€43,928.85	€718.84	€0.00	€0.00	€0.00	€102,746,189.39
	NI	€25,518,177.37	€7,218,837.74	€105,159.01	€37,420.47	€1,201.46	€13,624.71	€8,406.28	€166.14	€0.00	€0.00	€0.00	€32,902,993.18
Feb-17	ROI	€72,035,479.90	€27,979,553.27	€155,130.29	€146,308.11	€822.54	€52,898.05	€23,287.43	€672.03	€0.00	€0.00	€0.00	€100,394,151.62
	NI	€27,677,996.42	€8,012,556.21	€84,963.22	€26,404.97	€479.76	€26,710.73	€10,373.95	€304.45	€0.00	€0.00	€0.00	€35,839,789.71
Mar-17	ROI	€74,265,958.01	€25,788,084.66	€532,016.14	€116,104.70	€3,141.82	€39,271.10	€13,708.08	€638.20	€0.00	€0.00	€0.00	€100,758,922.71
	NI	€27,816,469.38	€8,149,368.84	€76,024.05	€12,908.20	€406.88	€32,923.50	€14,410.91	€582.61	€0.00	€0.00	€0.00	€36,103,094.37
Apr-17	ROI	€56,718,380.85	€24,463,279.10	€537,285.75	€147,053.40	€3,530.38	€45,104.86	€18,331.73	€596.32	€0.00	€0.00	€0.00	€81,933,562.39
	NI	€18,526,297.40	€7,555,445.88	€125,968.13	€23,710.00	€645.79	€59,866.13	€25,832.73	€810.81	€0.00	€0.00	€0.00	€26,318,576.87
May-17	ROI	€45,161,376.39	€18,086,733.29	€488,856.77	€139,195.42	€2,589.27	€62,916.83	€17,794.83	€699.70	€0.00	€0.00	€0.00	€63,960,162.50
	NI	€19,510,303.26	€6,964,363.87	€107,751.82	€32,525.65	€619.02	€88,078.61	€33,838.58	€1,182.28	€0.00	€0.00	€0.00	€26,738,663.09
Jun-17	ROI	€52,758,496.23	€17,355,294.13	€882,852.53	€191,441.91	€3,661.42	€65,347.10	€16,420.10	€869.48	€0.00	€0.00	€0.00	€71,274,382.90
	NI	€20,252,622.96	€6,380,475.07	€138,076.17	€37,695.41	€816.77	€148,166.13	€42,425.33	€1,836.50	€0.00	€0.00	€0.00	€27,002,114.34
Jul-17	ROI	€54,277,998.32	€17,477,373.72	€846,835.48	€102,146.67	€1,651.30	€47,723.87	€34,509.09	€601.00	€0.00	€0.00	€0.00	€72,788,839.45
	NI	€18,773,354.99	€5,850,870.07	€230,926.67	€29,088.46	€609.37	€122,267.41	€44,738.41	€1,404.46	€0.00	€0.00	€0.00	€25,053,259.84
Aug-17	ROI	€50,562,528.38	€15,345,661.50	€190,289.53	€50,188.86	€1,330.67	€130,457.46	€35,704.06	€1,694.02	€2.00	€0.00	€0.00	€66,317,856.48
	NI	€18,103,577.29	€5,650,171.54	€71,815.23	€23,380.11	€512.28	€11,510.00	€3,159.55	€146.77	€45.51	€0.00	€0.00	€23,864,318.28
Sep-17	ROI	€77,198,039.75	€16,935,824.39	€297,316.08	€58,064.10	€2,315.75	€36,227.08	€14,579.25	€480.13	€329,748.86	€0.00	€736.80	€94,873,332.19
	NI	€29,090,989.44	€6,342,522.98	€81,307.50	€23,116.39	€615.25	€24,625.76	€5,539.12	€177.97	€254,051.02	€0.00	€4.28	€35,822,949.71
Oct-17	ROI	€66,627,076.69	€17,573,435.30	€379,168.29	€109,325.13	€2,586.81	€31,769.76	€11,103.25	€435.24	€0.00	€0.00	€0.00	€84,734,900.47
	NI	€22,549,009.87	€5,897,549.80	€79,103.03	€24,197.26	€648.45	€10,935.82	€2,957.83	€134.12	€0.00	€0.00	€0.00	€28,564,536.18

Table 27 - Total Payments by Month

Appendix H: Full Balancing Costs

Historical figures for full Balancing Costs of both the Trading and Capacity Markets, for the current financial year (October to September), are provided below. Information related to periods before this is available in previous Monthly Market Operator Reports.

- Positive values indicate Payments were greater than Charges.
- Negative values indicate Charges were greater than Payments.

Trading Market

Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
06/10/2017	39	€4,277,088.98	€0
13/10/2017	40	€2,482,838.95	€0
20/10/2017	41	€1,242,741.61	€0
27/10/2017	42	€2,017,373.96	€0

Table 28 – Full Balancing Costs for Trading Charges and Payments

Note: SEM Balancing Costs are provided based on daily exchange rates; VAT Balancing Costs are based on the Invoicing Date Trading Day exchange rate. VAT Balancing costs exclude Currency Cost related VAT.

Capacity Market

Invoice Month	SEM Balancing Costs	VAT Balancing Costs
Sept-17	-285.07	€0

Table 29 - Balancing Costs for Capacity Settlement

Note: SEM Capacity Balancing Costs and VAT Balancing Costs are provided based on Annual Capacity exchange rate. VAT Balancing costs exclude Currency Cost related VAT.

Appendix I: MSP Algorithms

The Market Operator has two different certified solvers used to determine Unit Commitment. These solvers use the Lagrangian Relaxation (LR) and Mixed Integer Programming (MIP) methodologies.

The primary algorithm used in the SEM is Lagrangian Relaxation (LR). Under certain schedule outcomes this solution is compared to results achieved using MIP. The SEMO policy on the use of MIP has been updated and is available from the SEMO website [here](#).

Historical information on runs and dates where the MIP algorithm has been used for published results is provided below.

Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>Oct 2016</u>	-	<u>03/10/2016</u> <u>26/10/2016</u>	<u>02/10/2016</u> <u>12/10/2016</u> <u>24/10/2016</u> <u>28/10/2016</u>	<u>04/10/2016</u> <u>07/10/2016</u> <u>08/10/2016</u> <u>24/10/2016</u> <u>25/10/2016</u>	<u>01/10/2016</u> <u>25/10/2016</u> <u>26/10/2016</u> <u>28/10/2016</u>
<u>Nov 2016</u>	-	<u>25/11/2016</u>	-	<u>01/11/2016</u> <u>17/11/2016</u>	<u>10/11/2016</u> <u>23/11/2016</u> <u>29/11/2016</u> <u>30/11/2016</u>
<u>Dec 2016</u>	<u>08/12/2016</u>	<u>06/12/2016</u> <u>08/12/2016</u> <u>13/12/2016</u> <u>15/12/2016</u> <u>21/12/2016</u>	<u>01/12/2016</u> <u>12/12/2016</u> <u>15/12/2016</u> <u>15/12/2016</u>	<u>04/12/2016</u> <u>16/12/2016</u> <u>18/12/2016</u> <u>20/12/2016</u> <u>22/12/2016</u>	<u>08/12/2016</u> <u>09/12/2016</u>

Market Operator Monthly Report

Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>Jan 2017</u>	<u>29/01/2017</u> <u>31/01/2017</u>	<u>03/01/2017</u> <u>26/01/2017</u> <u>29/01/2017</u> <u>31/01/2017</u>		<u>01/01/2017</u> <u>23/01/2017</u> <u>28/01/2017</u> <u>30/01/2017</u>	<u>12/01/2017</u> <u>31/01/2017</u>
<u>Feb 2017</u>		<u>06/02/2017</u> <u>13/02/2017</u> <u>19/02/2017</u>	<u>04/02/2017</u> <u>08/02/2017</u> <u>17/02/2017</u> <u>28/02/2017</u>	<u>01/02/2017</u> <u>05/02/2017</u> <u>08/02/2017</u> <u>11/02/2017</u>	<u>04/02/2017</u> <u>07/02/2017</u> <u>20/02/2017</u> <u>25/02/2017</u>
<u>Mar 2017</u>	=	<u>09/03/2017</u>	<u>19/03/2017</u> <u>24/03/2017</u>	<u>08/03/2017</u> <u>18/03/2017</u> <u>24/03/2017</u>	<u>20/03/2017</u> <u>21/03/2017</u>
<u>Apr 2017</u>	=	=	<u>17/04/2017</u> <u>28/04/2017</u>	<u>03/04/2017</u> <u>06/04/2017</u> <u>26/04/2017</u>	<u>04/04/2017</u>
<u>May 2017</u>	<u>15/05/2017</u>	=	=	=	<u>05/05/2017</u> <u>14/05/2017</u>
<u>Jun 2017</u>		<u>02/06/2017</u> <u>29/06/2017</u>			<u>11/06/2017</u>
<u>July 2017</u>	<u>19/07/2017</u>	<u>01/08/2017</u>			
<u>August 2017</u>		<u>17/08/2017</u>	<u>30/08/2017</u>	<u>18/08/2017</u>	<u>01/08/2017</u>

Market Operator Monthly Report

Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>September 2017</u>	<u>26/09/2017</u>		<u>04/09/2017</u> <u>18/09/2017</u> <u>20/09/2017</u>	<u>18/09/2017</u>	
<u>October 2017</u>	<u>15/10/2017</u>	<u>03/10/2017</u> <u>24/10/2017</u> <u>26/10/2017</u>	<u>04/10/2017</u> <u>06/10/2017</u> <u>26/10/2017</u>	<u>20/10/2017</u> <u>24/10/2017</u> <u>26/10/2017</u>	<u>10/10/2017</u> <u>16/10/2017</u>

Table 30 - MIP Algorithms

Operational Date	Trade Date	Run Type	LR Peak SMP	MIP Peak SMP	Published
01/10/2016	01/10/2016	WD1	€629.67	€174.47	MIP
02/10/2016	03/10/2016	EA2	(€100)	€213.50	MIP
03/10/2016	02/10/2016	EP1	(€100)	€67.66	MIP
08/10/2016	04/10/2016	EP2	€670.56	€530.47	MIP
11/10/2016	07/10/2016	EP2	€779.29	€279.06	MIP
12/10/2016	08/10/2016	EP2	€761.10	€271.73	MIP
13/10/2016	12/10/2016	EP1	€536.13	€536.13	MIP
25/10/2016	26/10/2016	EA2	€1,000	€176.89	MIP
25/10/2016	24/10/2016	EP1	€778.40	€542.17	MIP
25/10/2016	25/10/2016	WD1	€780.67	€184.41	MIP
26/10/2016	26/10/2016	WD1	€520.07	€520.07	MIP
28/10/2016	24/10/2016	EP2	€778.25	€542.17	MIP
28/10/2016	28/10/2016	WD1	€523.46	€185.11	MIP

Market Operator Monthly Report

29/10/2016	28/10/2016	EP1	€514.56	€226.86	MIP
29/10/2016	25/10/2016	EP2	€780.46	€436.68	MIP
05/11/2016	01/11/2016	EP2	€512.48	€218.59	MIP
10/11/2016	10/11/2016	WD1	€536.74	€190.70	MIP
21/11/2016	17/11/2016	EP2	€531.95	€227.60	MIP
23/11/2016	23/11/2016	WD1	€536.74	€228.93	MIP
24/11/2016	23/11/2016	EA2	€1,000	€373.29	MIP
29/11/2016	29/11/2016	WD1	€541.87	€541.87	MIP
30/11/2016	29/11/2016	EA2	€552.76	€181.28	MIP
30/11/2016	29/11/2016	EP1	€541.87	€270.18	MIP
01/12/2016	30/11/2016	EP1	€541.59	€207.75	MIP
04/12/2016	30/11/2016	EP2	€541.59	€207.75	MIP
06/12/2016	07/12/2016	EA1	€1,000	€111.24	MIP
08/12/2016	08/12/2016	WD1	(€100)	€191.23	MIP
08/12/2016	09/12/2016	EA1	€940.08	€213.49	MIP
08/12/2016	09/12/2016	EA2	€1,000	€227.15	MIP
09/12/2016	09/12/2016	WD1	€544.89	€226.90	MIP
12/12/2016	13/12/2016	EP1	€550.08	€550.08	MIP
13/12/2016	14/12/2016	EA2	€1,000	€221.53	MIP
15/12/2016	16/12/2016	EA2	€1,000	€97.99	MIP
15/12/2016	14/12/2016	EP1	€551.72	€257.90	MIP
15/12/2016	14/12/2016	EP1	€577.68	€557.94	MIP
16/12/2016	12/12/2016	EP2	€564.56	€550.08	MIP
18/12/2016	14/12/2016	EP2	€551.72	€551.72	MIP

Market Operator Monthly Report

20/12/2016	16/12/2016	EP2	€1,000	€551.25	MIP
21/12/2016	22/12/2016	EA2	€1,000	€188.21	MIP
22/12/2016	18/12/2016	EP2	€552.30	€375.21	MIP
01/01/2017	31/12/2016	EP1	€581.16	€238.04	MIP
03/01/2017	04/01/2017	EA2	€1,000	€250.11	MIP
12/01/2017	08/01/2017	EP2	€-100	€-100	MIP
19/01/2017	18/01/2017	EA2	€1,000	€187.49	MIP
23/01/2017	22/01/2017	EP1	€546.36	€111.81	MIP
26/01/2017	27/01/2017	EA2	€1000	€225.25	MIP
26/01/2017	22/01/2017	EP2	€546.36	€101.73	MIP
28/01/2017	27/01/2017	EP1	€544.22	€544.22	MIP
30/01/2017	31/01/2017	EA2	€1000	€236.42	MIP
30/01/2017	29/01/2017	EP1	€553.05	€553.05	MIP
31/01/2017	31/01/2017	WD1	€554.03	€554.03	MIP
31/01/2017	27/01/2017	EP2	€544.22	€544.22	MIP
01/02/2017	28/01/2017	EP2	€553.13	€553.38	MIP
04/02/2017	04/02/2017	WD1	€582.64	€553.37	MIP
04/02/2017	03/02/2017	EP1	€533.92	€547.30	MIP
05/02/2017	04/02/2017	EP1	€564.61	€553.37	MIP
06/02/2017	07/02/2017	EA2	€1,000	€122.43	MIP
07/02/2017	07/02/2017	WD1	€552.98	€205.26	MIP
08/02/2017	07/02/2017	EP1	€552.98	€552.98	MIP
08/02/2017	04/02/2017	EP2	€553.37	€553.37	MIP
11/02/2017	07/02/2017	EP2	€552.98	€552.98	MIP

Market Operator Monthly Report

13/02/2017	14/02/2017	EA2	€1,000	€264.26	MIP
17/02/2017	16/02/2017	EP1	€542.10	€542.10	MIP
20/02/2017	20/02/2017	WD1	€1,000	€239.91	MIP
19/02/2017	20/02/2017	EA2	€1,000	€103.71	MIP
25/02/2017	25/02/2017	WD1	€543.19	€219.91	MIP
28/02/2017	27/02/2017	EP1	€596.85	€328.07	MIP
12/03/2017	08/03/2017	EP2	€1,000	€183.28	MIP
08/03/2017	09/03/2017	EA2	€1,000	€203.40	MIP
20/03/2017	20/03/2017	WD1	€1,000	€146.90	MIP
20/03/2017	19/03/2017	EP1	€531.42	€420.26	MIP
21/03/2017	21/03/2017	WD1	€559.20	€193.39	MIP
22/03/2017	18/03/2017	EP2	€-100	€69.40	MIP
25/03/2017	24/03/2017	EP1	€531.39	€221.11	MIP
28/03/2017	24/03/2017	EP2	€531.39	€227.68	MIP
07/04/2017	03/04/2017	EP2	€1,000	€112.04	MIP
04/04/2017	04/04/2017	WD1	€534.37	€94.60	MIP
13/04/2017	06/04/2017	EP2	€534.89	€118.83	MIP
18/04/2017	17/04/2017	EP1	€1,000	€72.21	MIP
29/04/2017	28/04/2017	EP1	€1,000	€97.01	MIP
30/04/2017	26/04/2017	EP2	€1,000	€74.49	MIP
05/05/2017	05/05/2017	WD1	€-100	€46.01	MIP
14/05/2017	14/05/2017	WD1	€-100	€538.89	MIP
14/05/2017	15/05/2017	EA1	€-79.01	€58.58	MIP
01/06/2017	02/06/2017	EA2	€1,000	€84.36	MIP

Market Operator Monthly Report

11/06/2017	11/06/2017	WD1	€-100	€87.76	MIP
28/06/2017	29/06/2017	EA2	€-100	€40.73	MIP
18/07/2017	19/07/2017	EA1	€911.60	€74.59	MIP
31/07/2017	01/08/2017	EA2	€1,000	€217.58	MIP
01/08/2017	01/08/2017	WD1	€1,000	€182.44	MIP
16/08/2017	17/08/2017	EA2	€1,000	€1000	MIP
22/08/2017	18/08/2017	EP2	€757.68	€89.98	MIP
31/08/2017	30/08/2017	EP1	€1,000	€71.67	MIP
05/09/2017	04/09/2017	EP1	€1,000	€267.27	MIP
19/09/2017	18/09/2017	EP1	€1,000	€1000	MIP
21/09/2017	20/09/2017	EP1	€1,000	€206.19	MIP
22/09/2017	18/09/2017	EP2	€1,000	€285.75	MIP
25/09/2017	26/09/2017	EA1	€800	€283.57	MIP
02/10/2017	03/10/2017	EA2	€1,000	€217.09	MIP
05/10/2017	04/10/2017	EP1	€1,000	€90.22	MIP
07/10/2017	06/10/2017	EP1	€1,000	€281.63	MIP
10/10/2017	10/10/2017	WD1	€-1,000	€279.20	MIP
14/10/2017	15/10/2017	EA1	€800	€283.57	MIP
16/10/2017	16/10/2017	WD1	€-100	€61.23	MIP
23/10/2017	24/10/2017	EA2	€1,000	€278.95	MIP
24/10/2017	20/10/2017	EP2	€1,000	€280.03	MIP
25/10/2017	26/10/2017	EA2	€1,000	€233.58	MIP
27/10/2017	26/10/2017	EP1	€1,000	€180.39	MIP
28/10/2017	24/10/2017	EP2	€1,000	€278.95	MIP

Market Operator Monthly Report

30/10/2017	26/10/2017	EP2	€1,000	€180.41	MIP
------------	------------	-----	--------	---------	-----

Table 31 - MIP Vs LR Peak Price Comparison