



# **Market Operator Monthly Report**

## **August 2017**

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>4</b>
<b>MONTHLY STATISTICS .....</b>	<b>5</b>
<b>TRADING AND SETTLEMENT CODE BREACHES .....</b>	<b>5</b>
<b>JOINING AND TERMINATING PARTIES AND UNITS .....</b>	<b>6</b>
<b>SUSPENSION OF PARTICIPANTS.....</b>	<b>6</b>
<b>FINANCIAL STATISTICS .....</b>	<b>7</b>
<b>TOTAL PAYMENTS FOR EACH CURRENCY .....</b>	<b>8</b>
<b>TOTAL BALANCING COSTS.....</b>	<b>8</b>
<b>TOTAL CURRENCY COSTS.....</b>	<b>11</b>
<b>CUMULATIVE IMPERFECTIONS COSTS VS BUDGET .....</b>	<b>12</b>
<b>FINANCIAL CHANGES BETWEEN INITIAL SETTLEMENT AND SUBSEQUENT RERUNS.....</b>	<b>13</b>
3.1.1 <i>Energy Market.....</i>	13
3.1.2 <i>Capacity Market.....</i>	17
<b>HELPPESK CALL STATISTICS.....</b>	<b>21</b>
<b>DISPUTES AND QUERIES .....</b>	<b>22</b>
5.1.2 <i>Data Queries.....</i>	22
5.1.3 <i>Settlement Queries .....</i>	22
<b>CENTRAL SYSTEMS.....</b>	<b>23</b>
<b>6.1 PROPORTION OF DEFAULT DATA USED .....</b>	<b>23</b>
<b>6.2 PROPORTION OF ESTIMATED METER DATA USED IN INITIAL SETTLEMENT AND RESETTLEMENT .....</b>	<b>23</b>
<b>6.3 LIST OF SYSTEM ERRORS AND RE-RUNS.....</b>	<b>23</b>
6.3.1 <i>Re-Pricing / Resettlement Runs /MIUN Delays .....</i>	23
<i>There was a delay to the publication of EA2 MIUNs for Trading Day 17/08/2017 .....</i>	23
<i>There was a delay to the publication of WD1 MIUNs for Trading Day 20/08/2017.....</i>	23
<b>6.3.2 System Errors .....</b>	<b>23</b>
<b>6.4 OPERATIONAL TIMINGS.....</b>	<b>23</b>
1.4.1 <i>MSP Postings Aug 2017 .....</i>	24
6.4.2 <i>MSP Algorithms .....</i>	29
1.4.1 <i>Settlement Postings Aug 2017.....</i>	30
<b>6.5. – RCUC 3.7.3 WAS RELEASED ON 15/08/2017 .....</b>	<b>31</b>
<b>OCCASIONAL COMPONENTS.....</b>	<b>32</b>
<b>7.1 DISASTER RECOVERY/BUSINESS CONTINUITY TESTS .....</b>	<b>32</b>
<b>7.3 COMMUNICATIONS OR SYSTEMS FAILURES .....</b>	<b>32</b>
<b>7.4 DENIAL OF SERVICE ATTACKS.....</b>	<b>32</b>
<b>7.5 SUBMISSION OF PARAMETERS TO RAS FOR APPROVAL .....</b>	<b>32</b>
<b>APPENDIX A: DETAIL OF TRADING AND SETTLEMENT CODE BREACHES .....</b>	<b>33</b>
<b>DATA PROVIDER.....</b>	<b>33</b>
<b>MARKET PARTICIPANT.....</b>	<b>33</b>
<b>SEMO - PRICING AND SCHEDULING .....</b>	<b>34</b>
<b>SEMO – SETTLEMENTS.....</b>	<b>34</b>
<b>SEMO - FUNDS TRANSFER.....</b>	<b>34</b>
<b>SEMO - CREDIT MANAGEMENT .....</b>	<b>34</b>
<b>SEMO – OTHER.....</b>	<b>34</b>
<b>APPENDIX B: LIST OF QUERIES BY TYPE.....</b>	<b>35</b>
<b>APPENDIX C: LIST OF ALL SYSTEM ERRORS AND FAILURES.....</b>	<b>36</b>
<b>APPENDIX D: DETAILS OF OPERATIONAL TIMINGS.....</b>	<b>37</b>
<b>MARKET SCHEDULE AND PRICE RUNS.....</b>	<b>37</b>
<b>SETTLEMENT RUNS .....</b>	<b>38</b>

## Market Operator Monthly Report

---

APPENDIX E: IMPERFECTIONS CHARGE.....	39
APPENDIX F: DEFAULT COMMERCIAL OFFER DATA USED.....	56
APPENDIX G: TOTAL CHARGES AND PAYMENTS DATA.....	61
APPENDIX H: FULL BALANCING COSTS .....	63
TRADING MARKET .....	63
CAPACITY MARKET.....	64
APPENDIX I: MSP ALGORITHMS .....	66

### Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of August 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 August 2017, there was one late Settlement publication as per the Trading and Settlement code.

During the month of August 2017, there was no late Credit Report publication as per the Trading and Settlement code timelines. There was no Credit Cover Increase Notice defaults during August 2017 as per the Trading and Settlement code timelines.

There were 17 invoice defaults by Participants during August 2017. The largest of these was an Energy M+4 Invoice for €6088.25 which was remedied on the same day.

170 general queries were received in August 2017. During the same period 165 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		-	1
Market Participants	Pricing & Scheduling	-	-
	Settlement	-	2
	Funds Transfer	28	-
	Credit Risk Management	-	-
SEMO	Pricing & Scheduling	-	3
	Settlement	-	-
	Funds Transfer	-	-
	Credit Risk Management	-	-
	Other	-	-
<b>Total</b>		<b>28</b>	<b>6</b>

**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***

No parties joined the Market in August 2017

- PY\_000185 Rathmacan Trading Limited
- PY\_000186 Beal na mBlath Power Trading Limited
- PY\_000187 Centrica Energy Limited
- PY\_000188 Ballycumber Power Supply Limited
- PY\_000190 Plum Energy Supply Limited

There were no terminating parties in August 2017.

The following units went effective in the Market in August 2017

- PT\_400055 ESB Independent Energy - GU\_402150
- PT\_500050 Hunters Hill – GU\_501430
- PT\_400211 Just Energy Limited – SU\_400216

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

### ***Suspension of Participants***

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

Financial Statistics

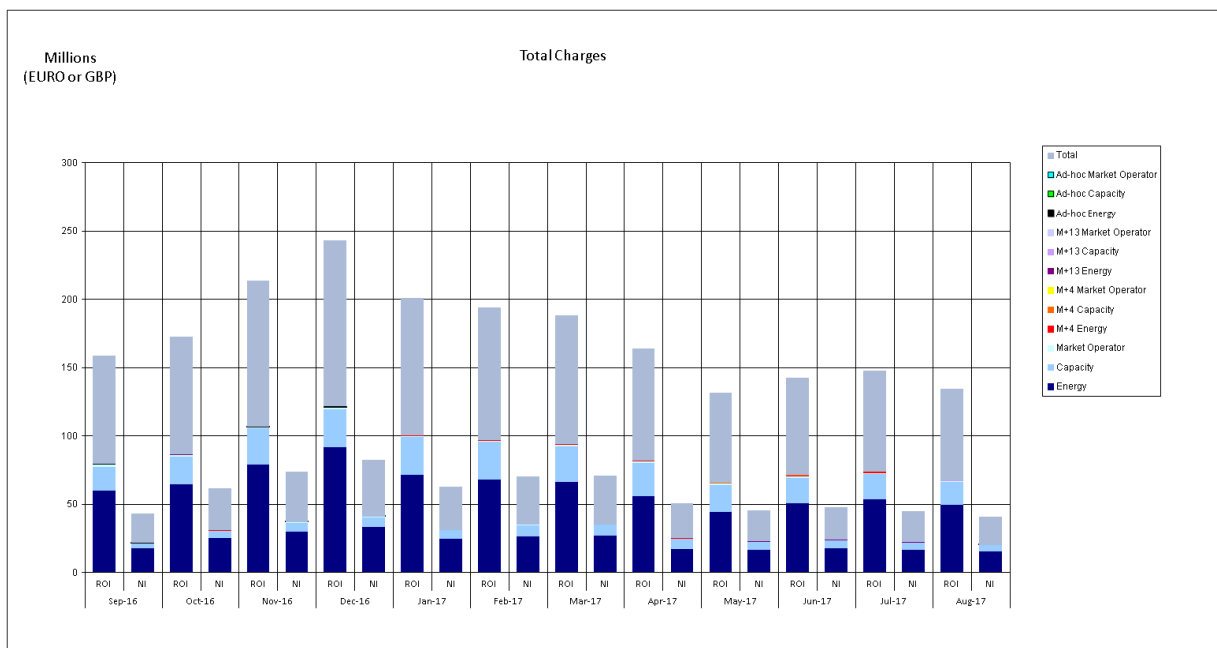


Figure 1 - Total Charges for Each Currency

Market	Aug-17	
	ROI	NI
Energy	€49,715,869	£15,604,259
Capacity	€16,597,662	£4,539,254
Market Operator	€670,888	£174,637
M+4 Energy	€189,568	£71,880
M+4 Capacity	€49,406	£24,102
M+4 Market Operator	€1,190	£515
M+13 Energy	€131,434	£11,674
M+13 Capacity	€36,136	£2,799
M+13 Market Operator	€1,706	£124
Ad-hoc Energy	€1	£53
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
<b>Total</b>	<b>€74,045,116</b>	<b>£22,416,436</b>

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

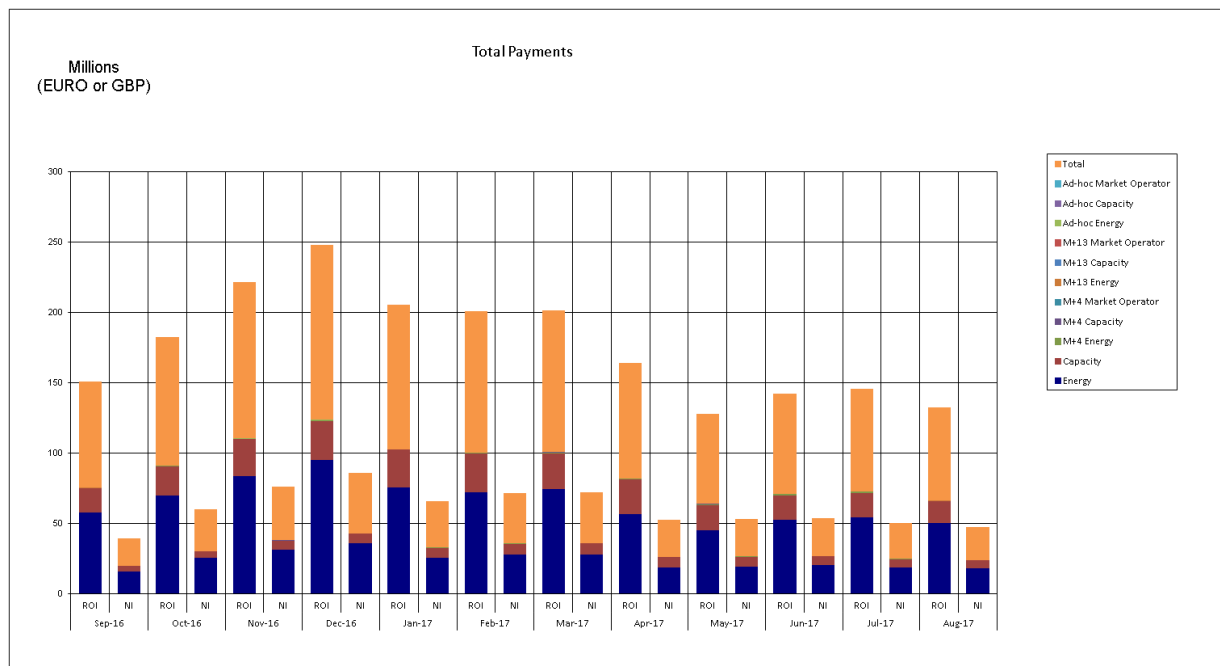


Figure 2 - Total Payments for Each Currency

Market	Aug-17	
	ROI	NI
Energy	€50,562,528	£18,103,577
Capacity	€15,345,662	£5,650,172
M+4 Energy	€190,290	£71,815
M+4 Capacity	€50,189	£23,380
M+4 Market Operator	€1,331	£512
M+13 Energy	€130,457	£11,510
M+13 Capacity	€35,704	£3,160
M+13 Market Operator	€1,694	£147
Ad-hoc Energy	€2	£46
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
<b>Total</b>	<b>€66,317,856</b>	<b>£23,864,318</b>

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.



## Market Operator Monthly Report

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:

August 2017	
Imbalance (Energy Only)	€810,832.64

Table 4 - Balancing Costs for Energy Settlement

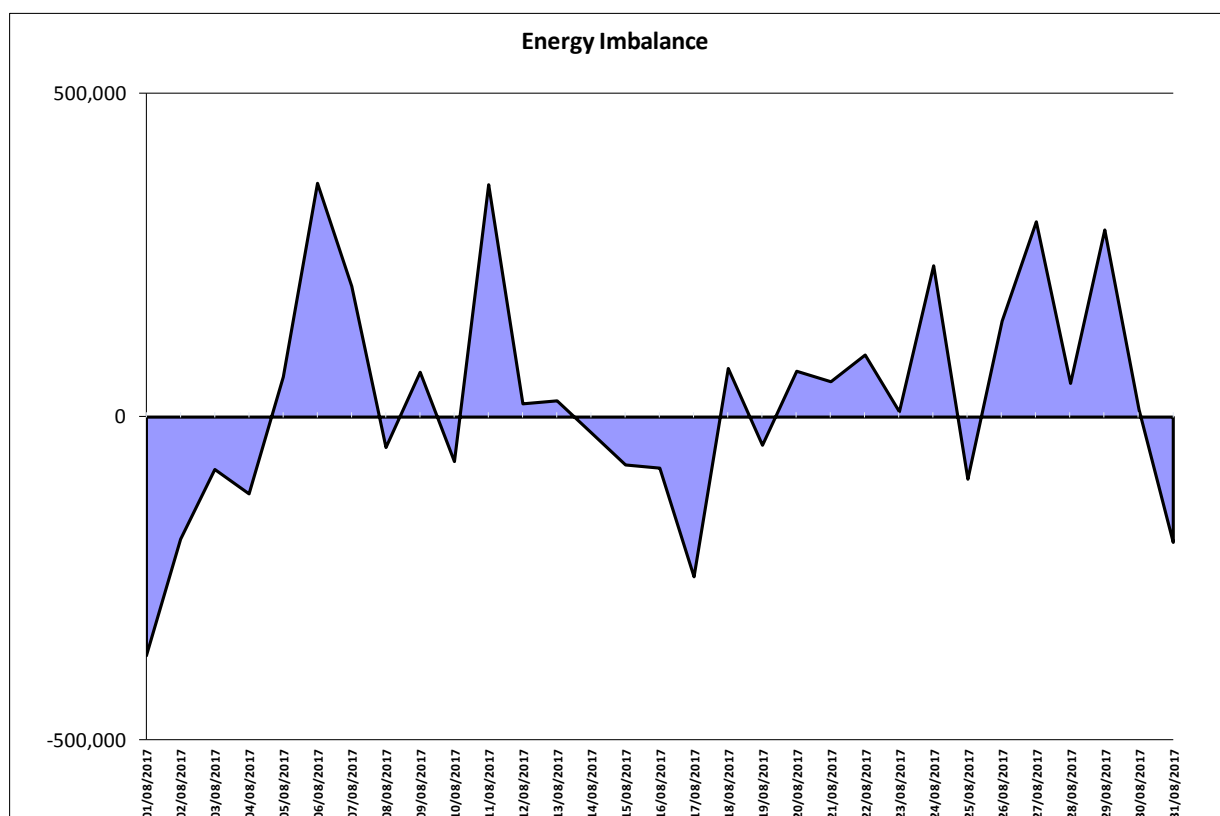


Figure 3 – Energy Imbalances

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,

## Market Operator Monthly Report

---

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
04/08/2017	30	€1,705,529.87	€0
11/08/2017	31	€2,031,766.74	€0
18/08/2017	32	€1,759,007.06	€0
25/08/2017	33	€1,798,951.38	€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:

August 2017	
Capacity Charges	€35,961,368.44
Capacity Payments	€35,961,193.77
Balancing Costs	-€174.67
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
29/07/2017	04/08/2017	30	£9,392.99	£-	£9,392.99
05/08/2017	11/08/2017	31	£4,708.13	£-	£4,708.13
12/08/2017	18/08/2017	32	£3,098.66	£-	£3,098.66
19/08/2017	25/08/2017	33	£31,409.12	£-	£31,409.12

Table 7 - Total Currency Costs for Trading Payments and Charges

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 £31,409.12. 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.

## Market Operator Monthly Report

---

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
10/08/2017	July-17	£32,172.44

**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 2016. The values expressed in Euros are as follows.

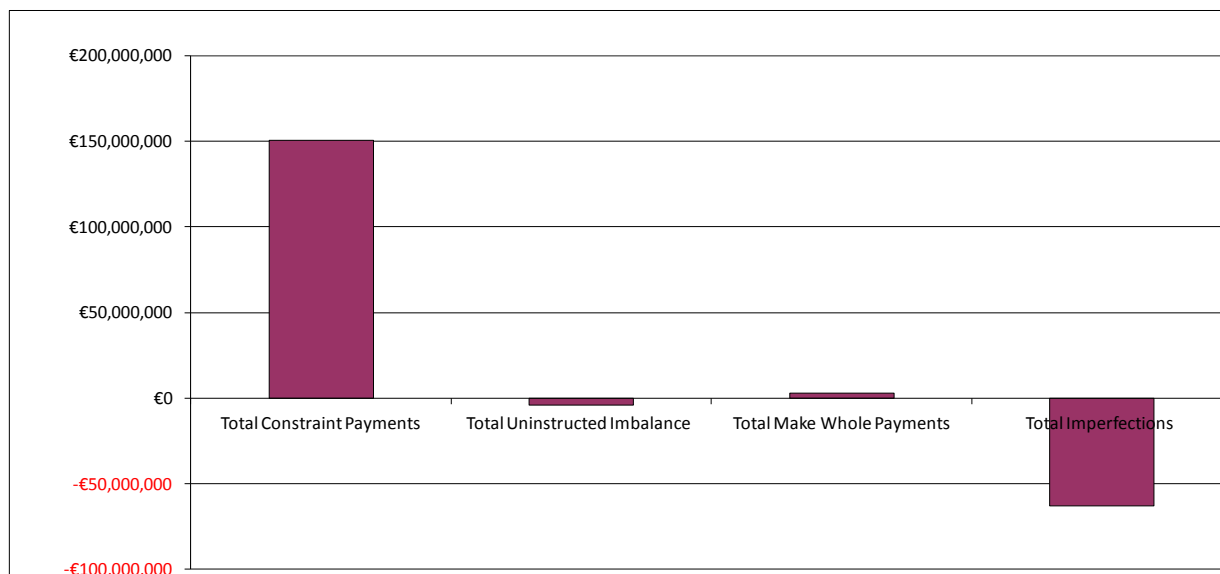
This table makes use of the values taken from the Initial Settlement Run of Trading payments and charges.

Total Constraint Payments	Total Uninstructed Imbalance	Total Make Whole Payments	Total Imperfections
€150,909,422.45	-€3,882,909.33	€3,136,248.42	-€62,952,494.18

**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 April 2017 and M+13 resettlement period of July 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

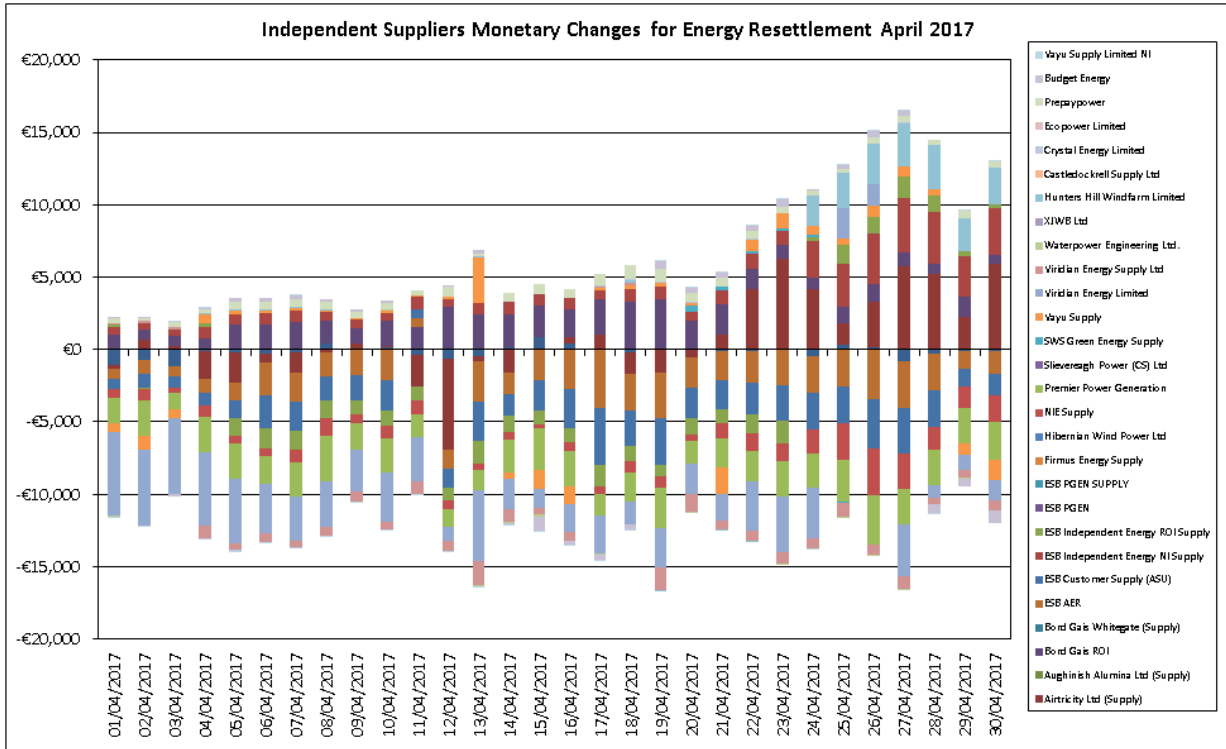


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – April 2017

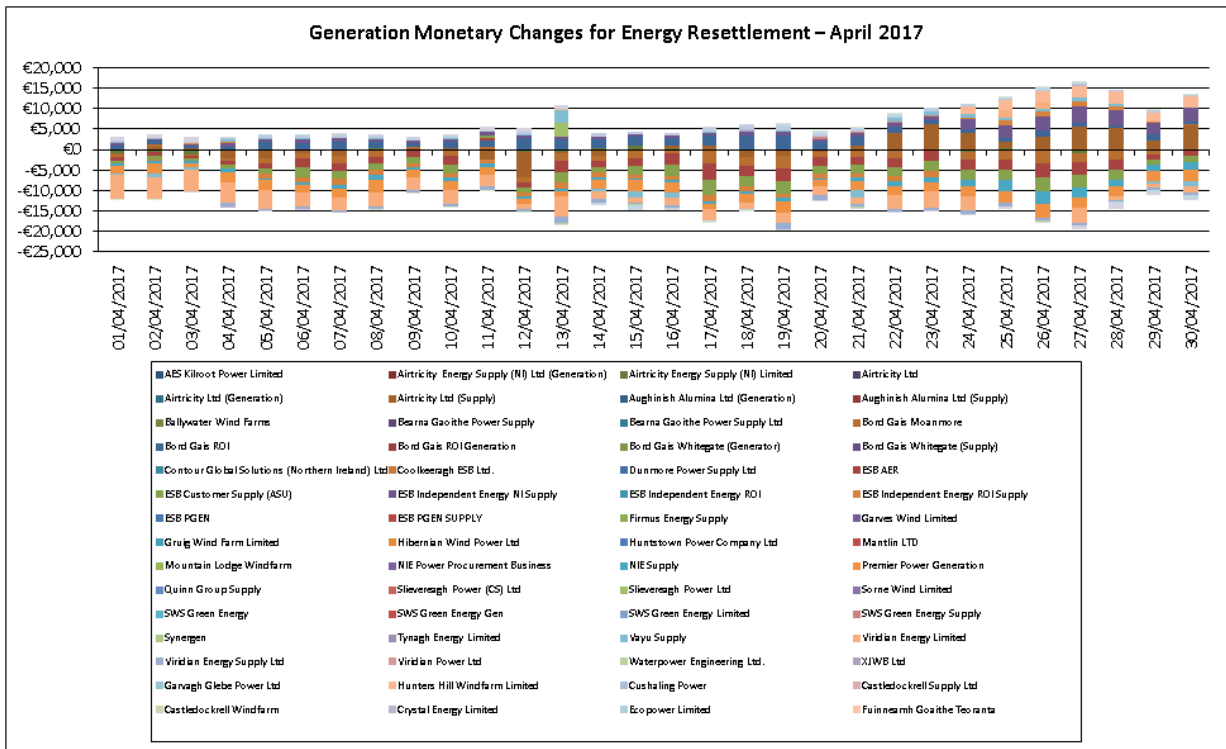


Figure 6 – Generation Monetary Changes for Energy Resettlement – April 2017

# Market Operator Monthly Report

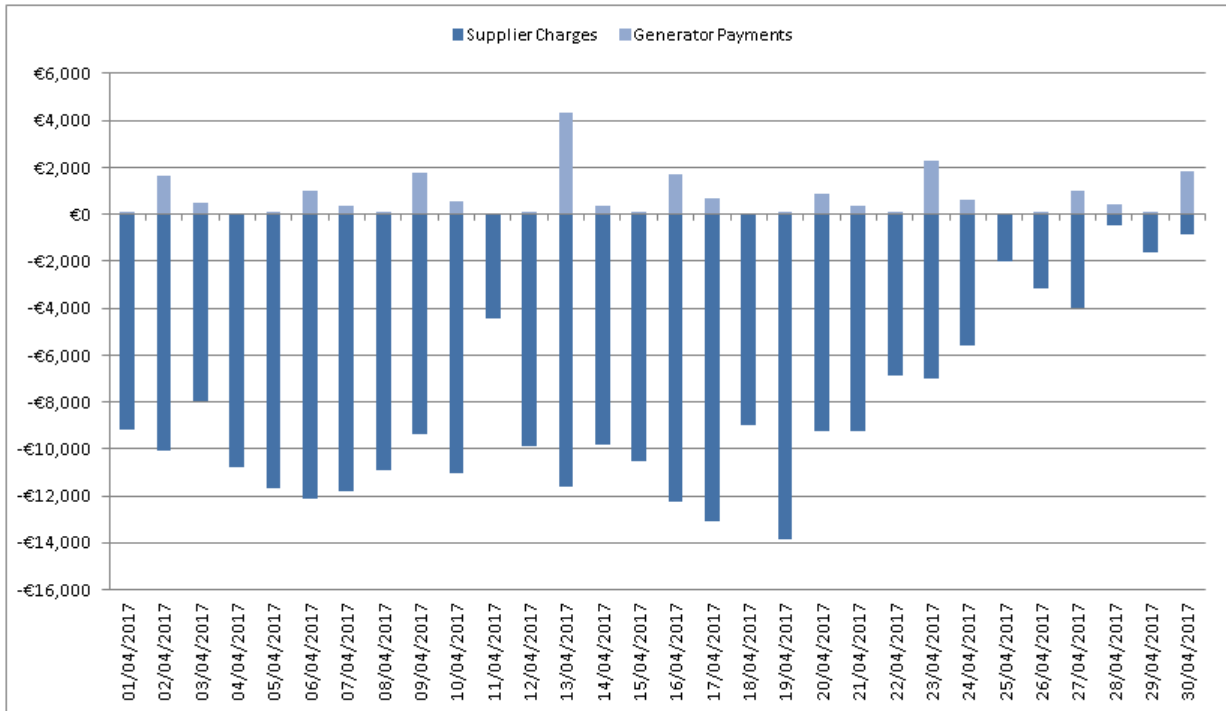


Figure 7 – Total Monetary Changes for Energy Resettlement – April 2017

## M+13 Resettlement

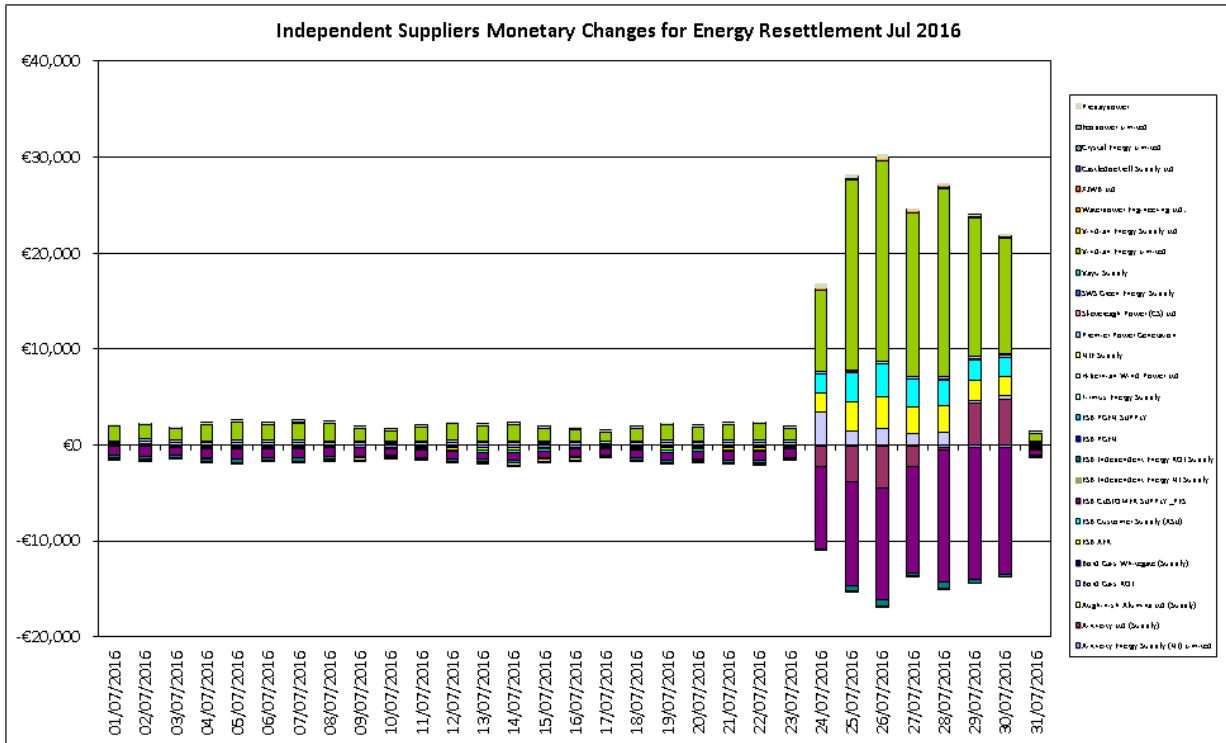


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – Jul 2016

# Market Operator Monthly Report

The above variances relates purely to rounding for Participants between M+4 and M+13 Resettlement. The increase in variance for Week 30 2016 (24<sup>th</sup> -30<sup>th</sup>) is due to revised metering being received.

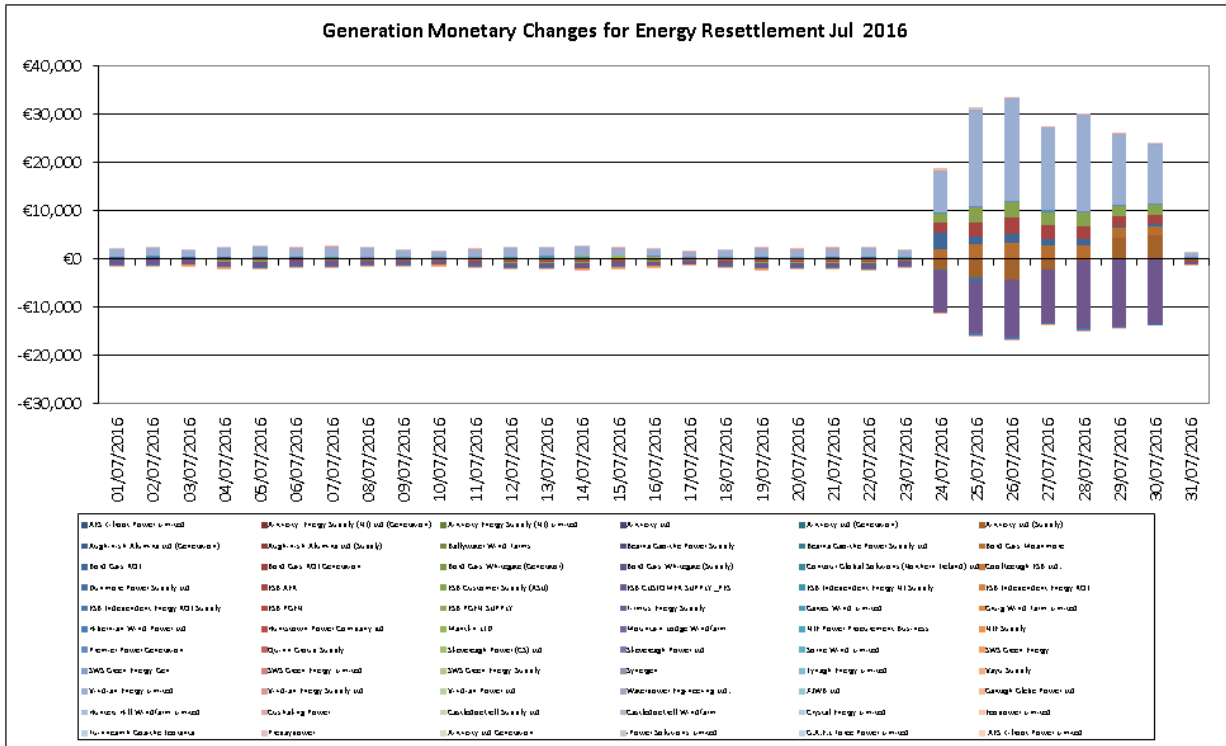


Figure 9 - Generation Monetary Changes for Energy Resettlement – Jul 2016

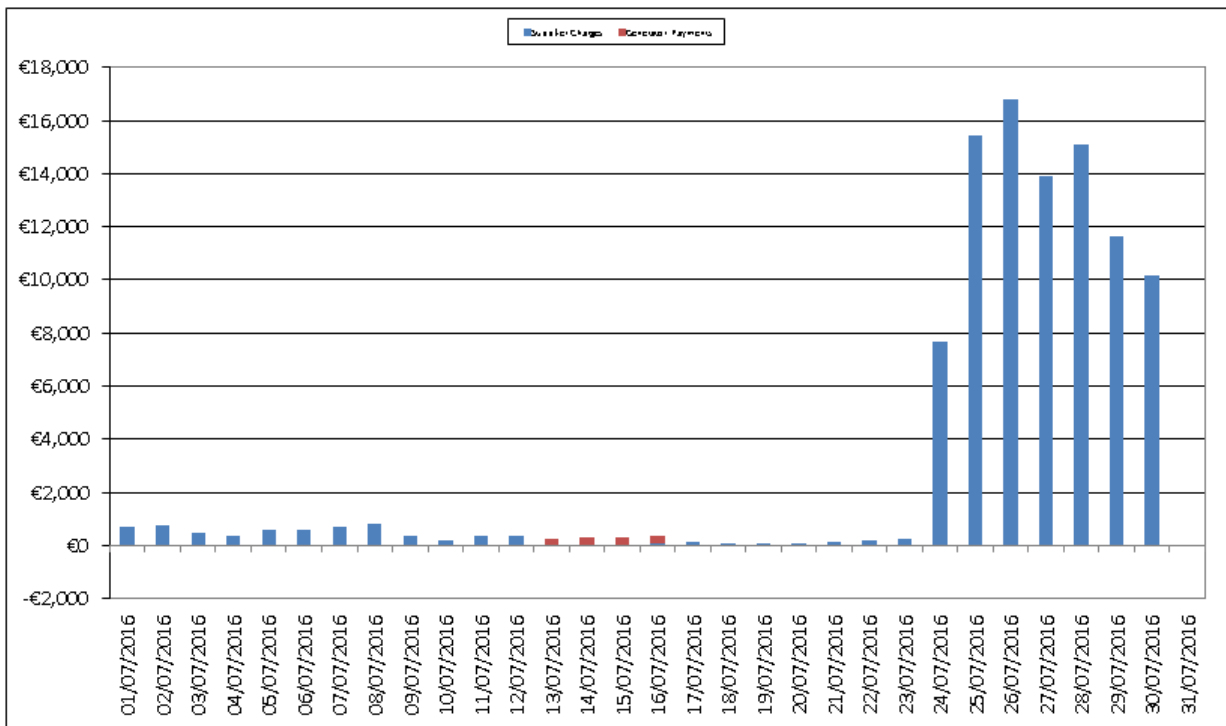


Figure 10 - Total Monetary Changes for Energy Resettlement – Jul 2016



### 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

Under resettlement, charges originally attributed to the Jurisdictional Error Supplier Units, have now been redistributed among Market Participants.

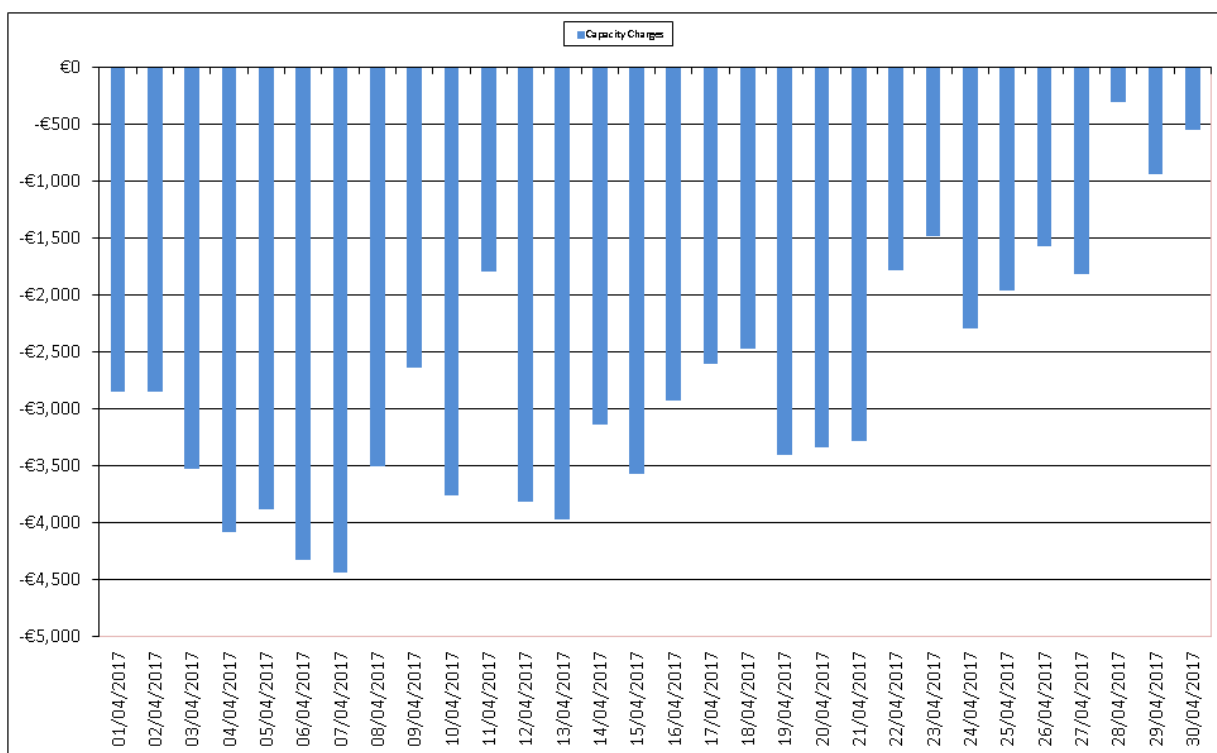


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – April 2017

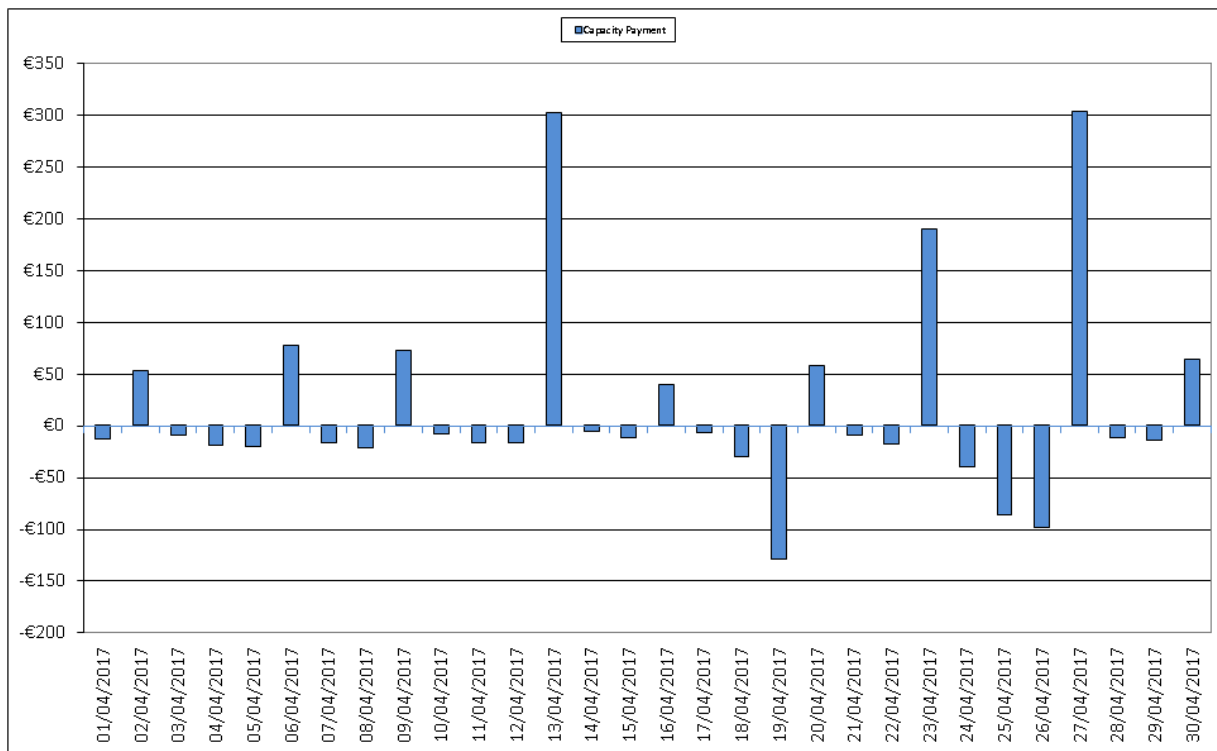


Figure 12 - All Generation Monetary Change for Capacity Resettlement – April 2017

The changes above are driven by updated meter data for Autonomous Price Taker Generators.

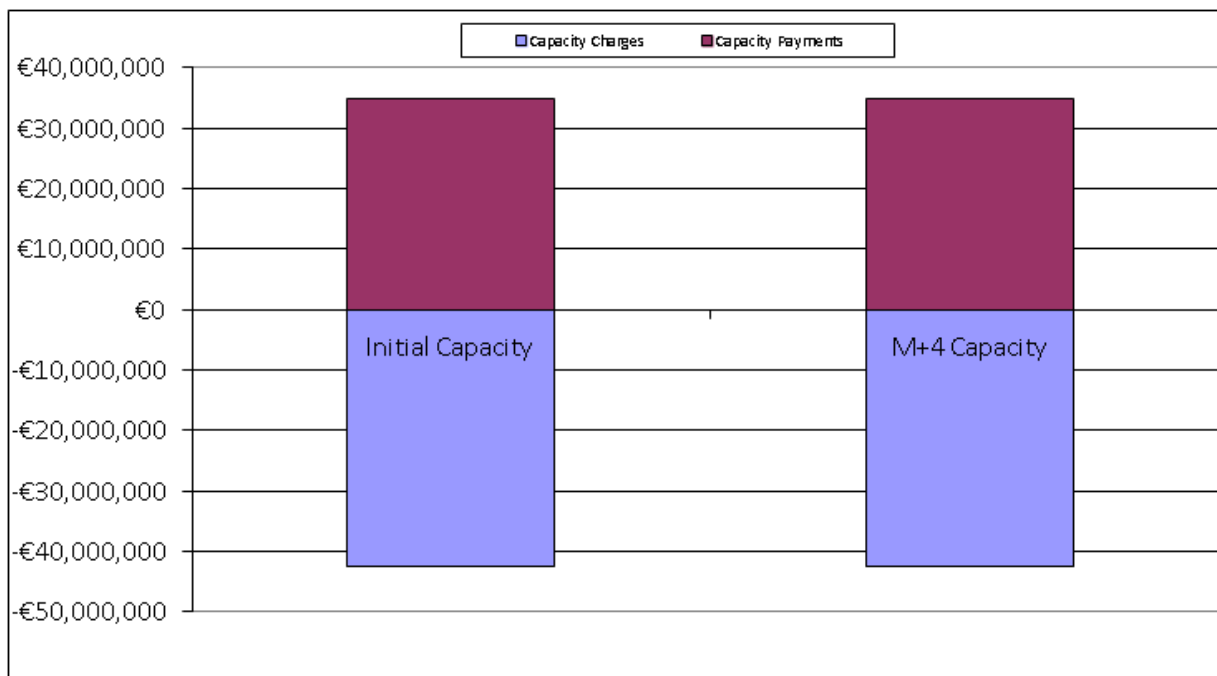


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement April 2017

## 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

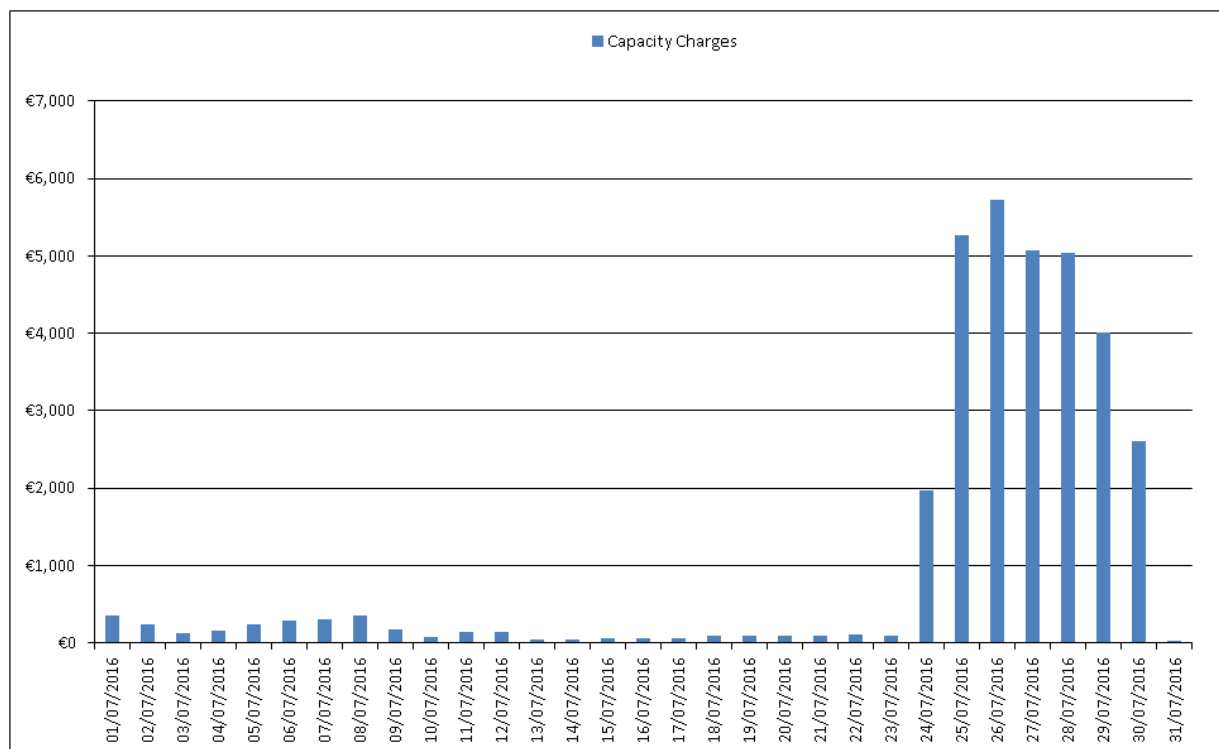


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – Jul 2016

# Market Operator Monthly Report

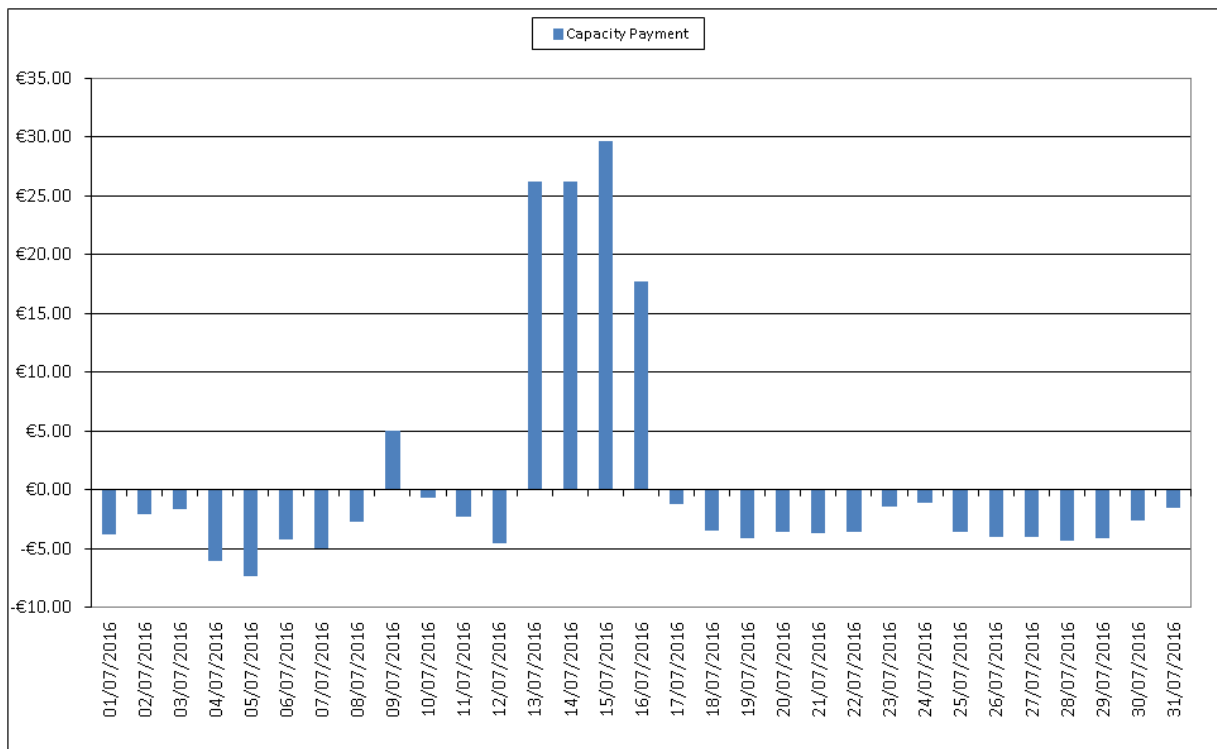


Figure 15 – All Generation Monetary Change for Capacity Resettlement – Jul 2016

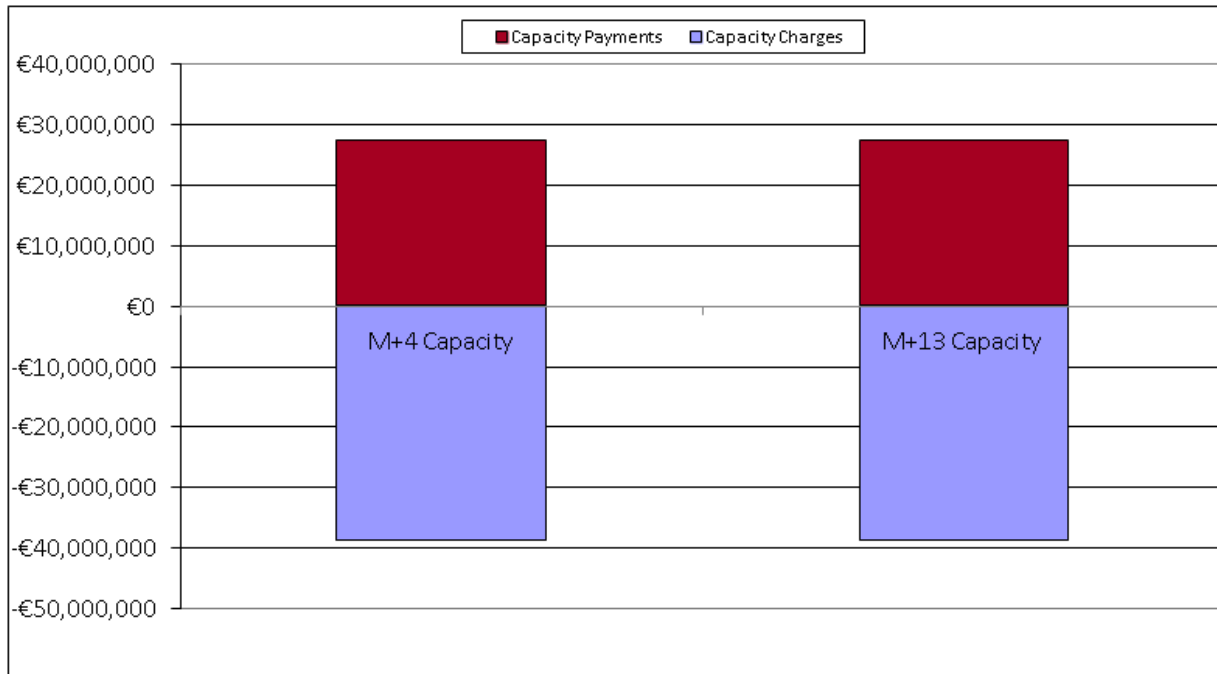


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – Jul 2016

### Helpdesk Call Statistics

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

<b>Market Helpdesk Report: 01/08/17 to 31/08/17</b>
-----------------------------------------------------

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	165	141	24	160	0.86	153
Important	4	4	0	4	2.67	3
Urgent	1	1	0	1	0.95	1
Settlement	7	2	5	5	4.62	5
Credit	0	0	0	0	0.00	0
Dispute	0	0	0	1	13.33	1
Data	0	0	0	2	0.00	2
<b>Total/Average</b>	<b>177</b>	<b>148</b>	<b>29</b>	<b>173</b>	<b>4.49</b>	<b>165</b>

**Table 10 – Helpdesk Statistics**

#### Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of August 2017.
- Resolved in the Period refers to queries resolved within August 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 August 2017.
- Not Resolved refers to queries raised but not resolved within August 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 0.19 working days from 0.71 in July 2017 to 0.90 working days in August 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 August 2017 with regard to formal Settlement Queries.

### Disputes and Queries

#### 5.1.1 Disputes

There were no disputes raised during the month of August 2017.

Topic	Number Of Queries
-	0

**Table 11– Upheld Dispute Queries by Topic**

#### 5.1.2 Data Queries

There were no formal data queries raised during the month of August 2017.

Topic	Number Of Queries
-	0

**Table 12– Upheld Data Queries by Topic**

#### 5.1.3 Settlement Queries

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

Topic	Number Of Queries
Dispatch Instructions	7

**Table 13 – Upheld Settlement Queries by Topic**

- Seven queries relating to Dispatch Instructions were raised. Six of the queries raised were related to the same issue identified by SEMO. Two of the seven queries were deemed to be of High Materiality. All six queries are to be corrected within an ad-hoc resettlement.
- One of the seven queries relating to Dispatch Instruction was deemed to be of Low Materiality. This is to be corrected within M+4 resettlement.

#### Unresolved Queries

There are two unresolved settlement queries as of the 15<sup>th</sup> September 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, 65.62% of data used was submitted by Participants through the normal Bid-Offer process. 34.38% 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 were two Ad hoc Re-Settlement runs carried out in Aug 2017.

There was a delay to the publication of EA2 MIUNs for Trading Day 17/08/2017

There was a delay to the publication of WD1 MIUNs for Trading Day 20/08/2017

##### 6.3.2 System Errors

There were no Market Application defects found in August 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.

## Market Operator Monthly Report

---

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,
- 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 August 2017.

### 1.4.1 MSP Postings Aug 2017

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	31-31	0	0	0
Post EA1	31-31	0	0	0
Post EA2	31-31	0	0	0
Post WD1	31-31	0	0	0
Post EP1	31-31	0	0	0
Post EP2	31-31	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	100%	0%	0%	0%
Post EA2	100%	0%	0%	0%
Post WD1	100%	0%	0%	0%
Post EP1	100%	0%	0%	0%
Post EP2	100%	0%	0%	0%

Table 15 - Operational Timings (% on time)



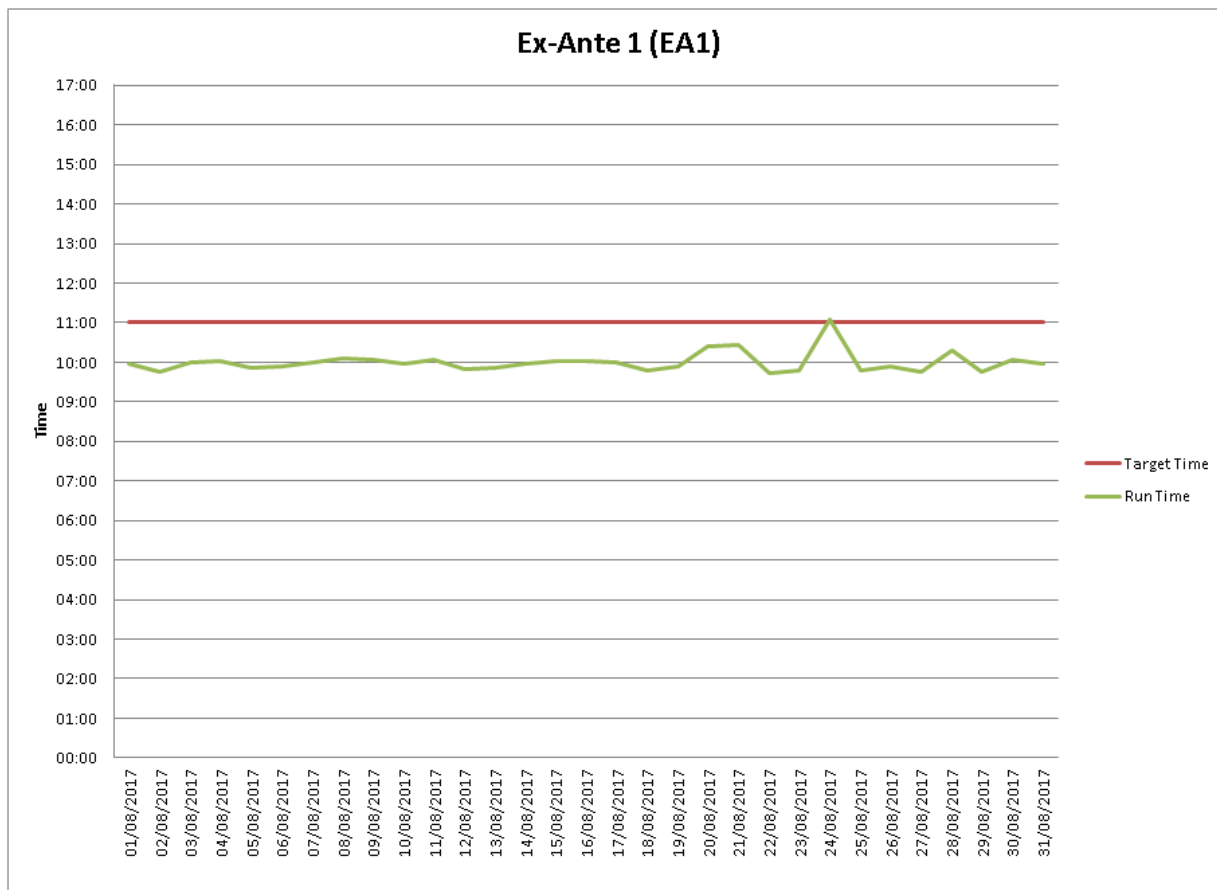


Figure 17 – Ex-Ante 1

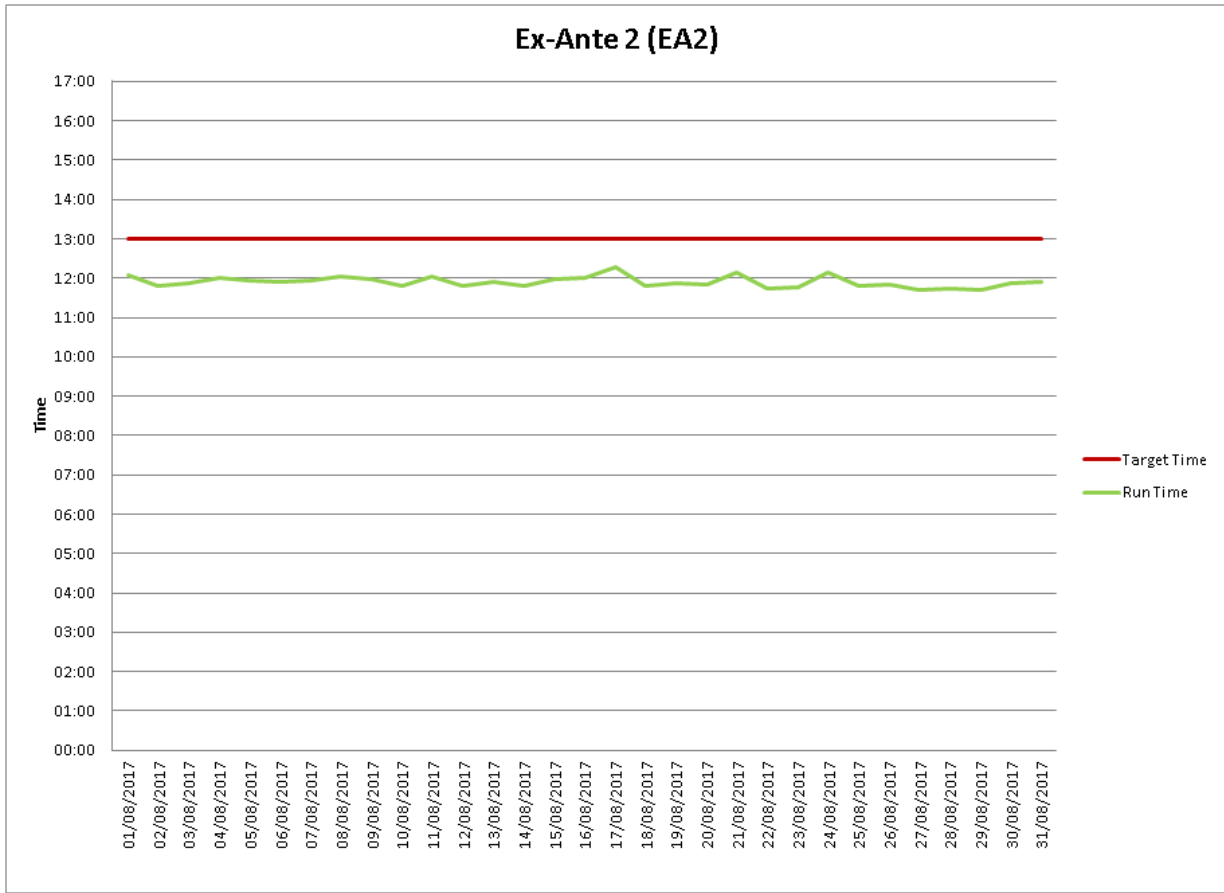


Figure 18 – Ex-Ante 2

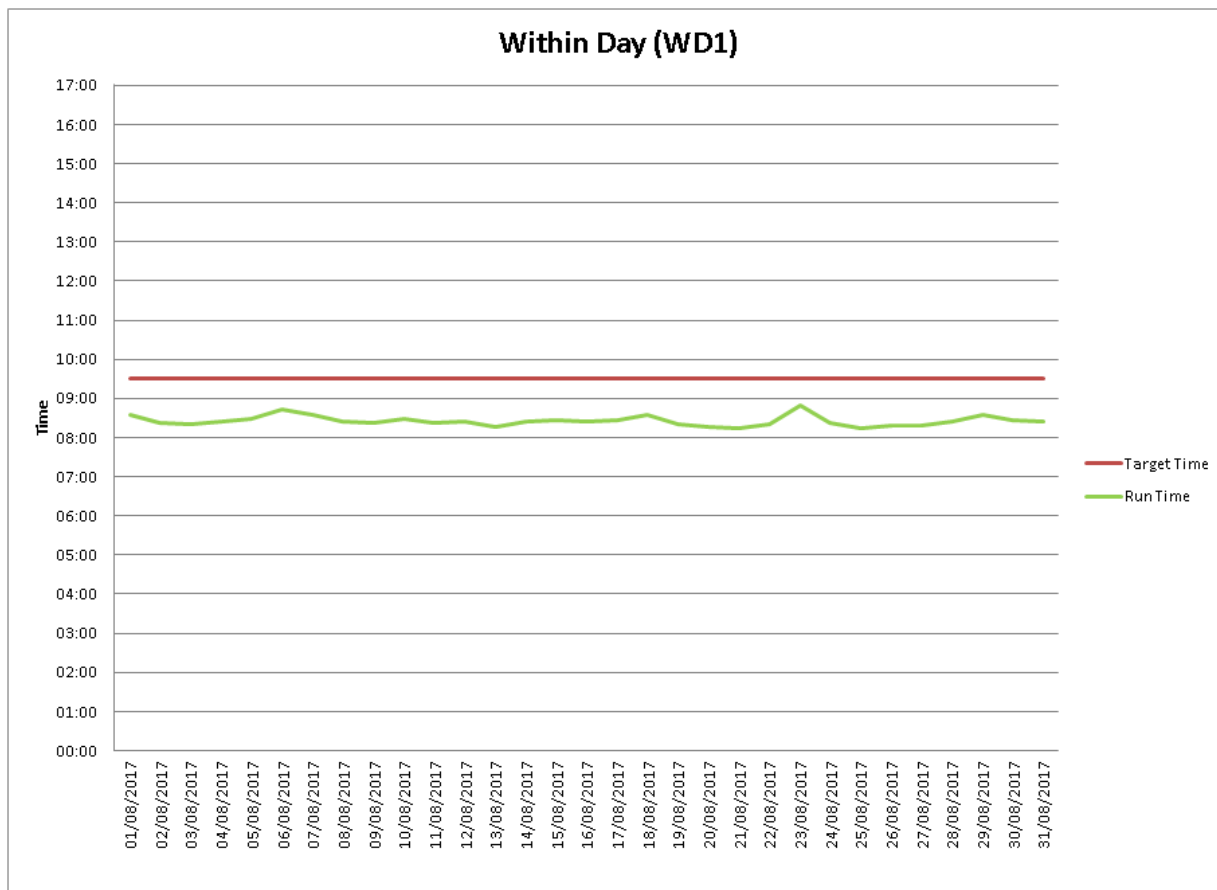


Figure 19 – Within Day 1

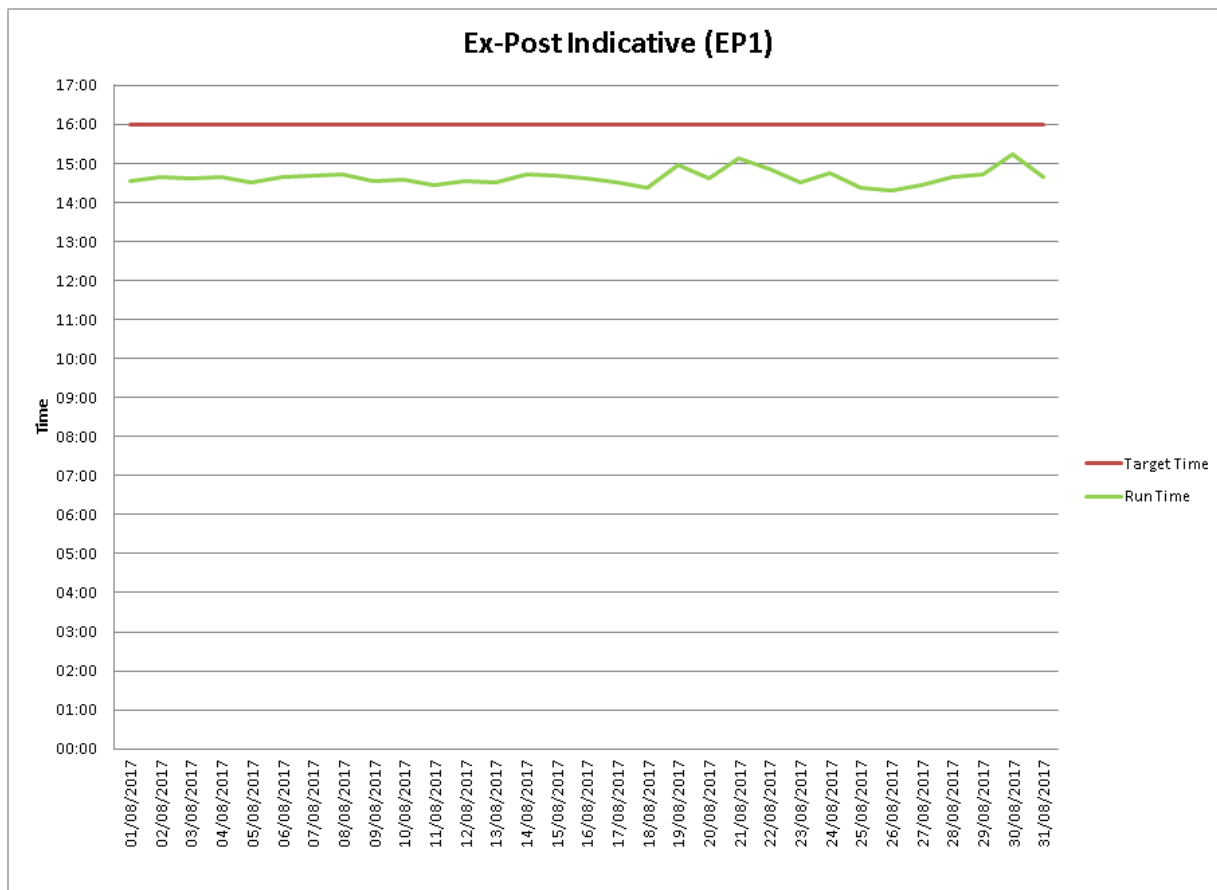


Figure 20 - Ex-Post Indicative

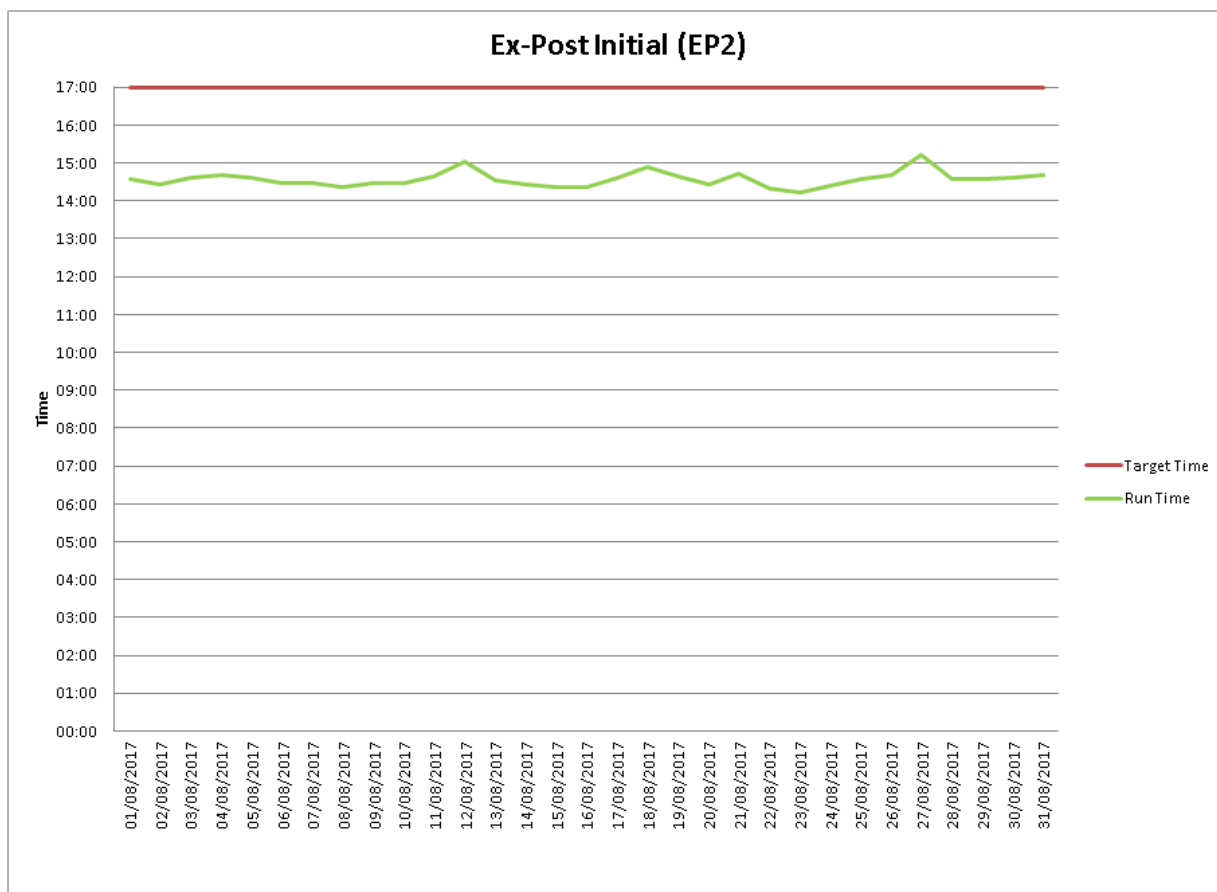


Figure 21 - Ex-Post Initial

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 August 2017, there were 4 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 Aug 2017

The publication timings for Settlement runs are provided below.

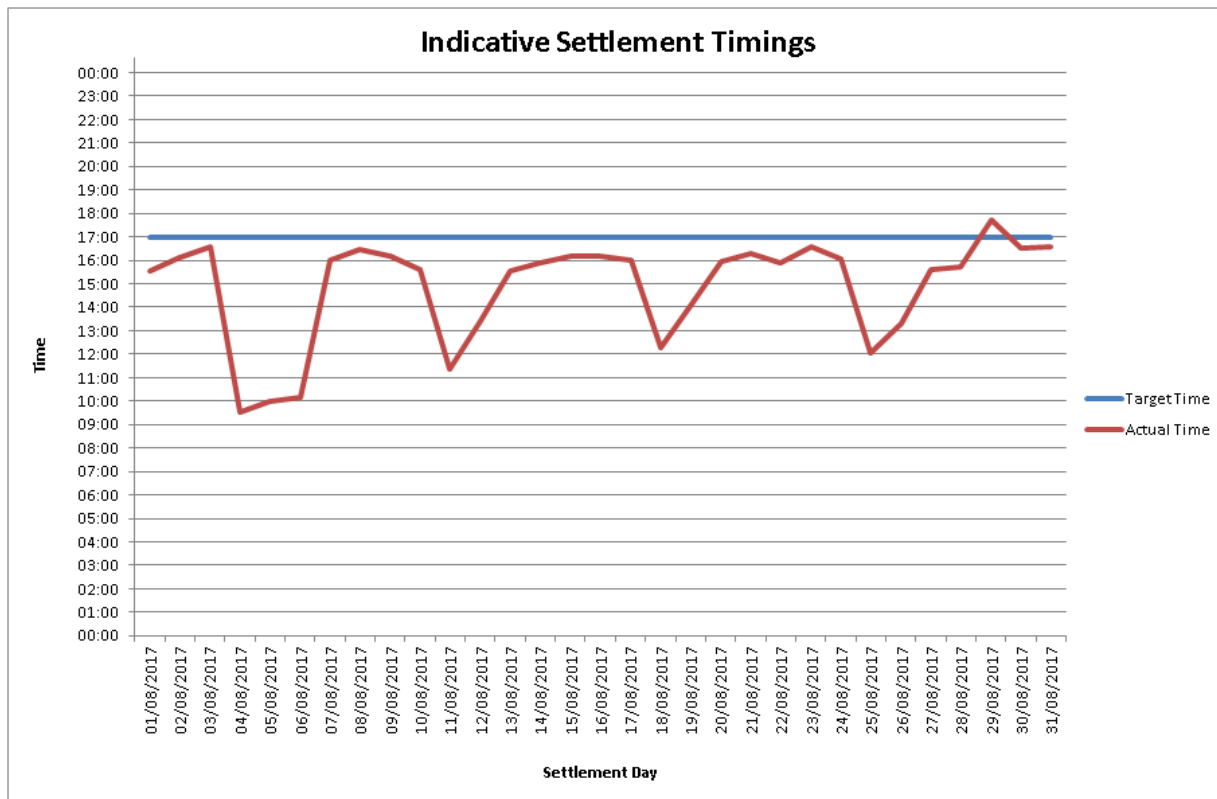


Figure 22 - Indicative Settlement Postings

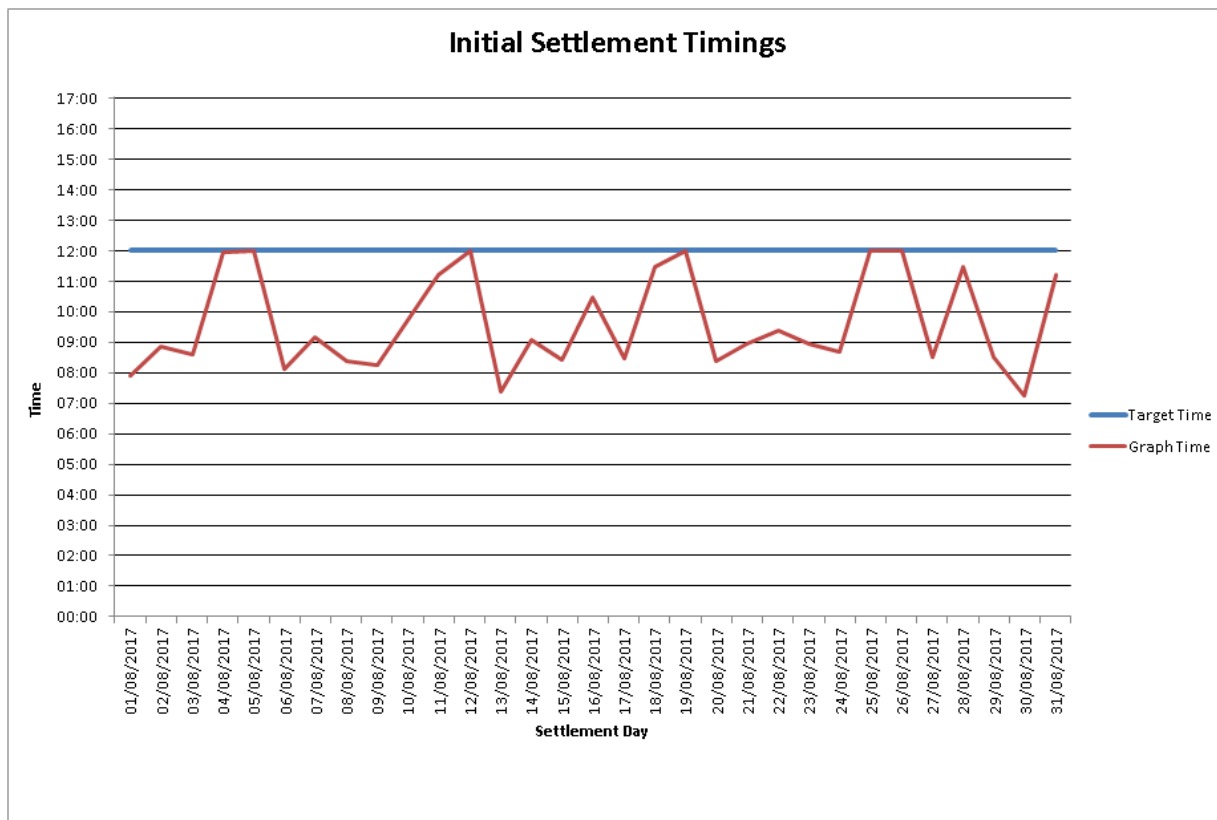


Figure 23 - Initial Settlement Postings

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

**6.5. – RCUC 3.7.3 was released on 15/08/2017**

### Occasional Components

#### 7.1 Disaster Recovery/Business Continuity Tests

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

#### 7.3 Communications or Systems Failures

There were no Communications Failures in August 2017

#### 7.4 Denial of Service Attacks

There was no Denial of Service Attacks during August 2017.

#### 7.5 Submission of Parameters to RAs for Approval

The below Parameter reports were submitted to the Regulatory Authorities in August 2017.

TSC Parameter Reports - 2018

- SEM MSP Operational Parameters Report
- SEM Credit Cover Parameters Report
- SEMO Tariffs and Imperfections Costs Report - 2018



## 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
30/08/2017	SE1	Timing	EirGrid MDP	File Submission	The MRSO failed to submit the Non Price Effective Meter Generation (NPEG) file by on the next Week Day (D+1).	This was caused as MRSO did not issue any communication as to why the file was not received	Contacted MRSO to submit the NPEG metering file.	Minor

**Table 17 – 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
02/08/2017	Money In	Timing	Participant	Payment Default	Arden Energy Ltd (PT_400149) defaulted on an Energy Week 29 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
02/08/2017	Money In	Timing	Participant	Payment Default	Electricity Exchange Limited (PT_400116) defaulted on a Capacity June 2016 M+13 and on a March 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
02/08/2017	Money In	Timing	Participant	Payment Default	G.A.E.L Force Power Ltd (PT_400069) defaulted on an Energy Week 26 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
02/08/2017	Money In	Timing	Participant	Payment	Open Electric Ireland (PT_500082) defaulted on a Capacity June 2016 M+13 and on an Energy Week 29 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
02/08/2017	Money In	Timing	Participant	Payment Default	ACTIVATION ENERGY DSU LTD (PT_500098) defaulted on a Capacity March 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
02/08/2017	Money In	Timing	Participant	Payment Default	AC Automation (UK) Ltd. (PT_500064) defaulted on a Capacity March 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
04/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 26 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
10/08/2017	Money In	Timing	Participant	Payment Default	Arden Energy Limited (PT_400149) defaulted on an Energy Week 30 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
10/08/2017	Money In	Timing	Participant	Payment Default	Electricity Exchange Limited (PT_400116) defaulted on an Energy Week 14 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/08/2017	Money In	Timing	Participant	Payment Default	Dalkia Alternative Energy TSU (PT_400124) defaulted on a FMOC July 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/08/2017	Money In	Timing	Participant	Payment Default	Dalkia Alternative Energy DSSU (PT_400125) defaulted on a FMOC July 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/08/2017	Money In	Timing	Participant	Payment Default	Quinn Windfarm Limited (PT_400049) defaulted on an FMOC July 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 27 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 27 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/08/2017	Money In	Timing	Participant	Payment Default	Bord Gais Interconnector (PT_500037) defaulted on an FMOC July 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
15/08/2017	Money In	Timing	Participant	Payment Default	NEAS Energy A/S (PT_500092) defaulted on a Capacity Initial July 2017 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
16/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 28 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
23/08/2017	Money In	Timing	Participant	Payment Default	Dan Twomey Waterpower Eng Ltd (PT_400045) defaulted on an Energy Week 16 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
23/08/2017	Money In	Timing	Participant	Payment Default	Dan Twomey Waterpower Eng Ltd (PT_400045) defaulted on an Energy Week 32 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
23/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 29 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
23/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 22 2016 Ad Hoc Invoice.	Participant Error	A default letter was issued to the Participant.	Major
23/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 19 2016 Ad Hoc Invoice.	Participant Error	A default letter was issued to the Participant.	Major
25/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 29 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
31/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Capacity July 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
31/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 30 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
31/08/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 25 2016 Ad Hoc Invoice.	Participant Error	A default letter was issued to the Participant.	Major
31/08/2017	Money In	Timing	Participant	Payment Default	Captured Carbon Ltd (PT_500112) defaulted on an Energy Week 17 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
31/08/2017	Money In	Timing	Participant	Payment Default	Captured Carbon Ltd (PT_500112) defaulted on a Capacity April 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major

**Table 18 – Trading and Settlement Code Breaches – Market Participants**

## Market Operator Monthly Report

### SEMO - Pricing and Scheduling

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
20/08/2017	WD1	Timing	SEMO	File Submission	There was a delay to the publication of the Within Day 1 (WD1) Market Schedule for Trading Day 20/08/2017.	WD1 for Trading Day 20/08/2017 was delayed due to Modified Interconnector Unit Nominations (MIUN) calculator issues.	A revision of EWIC MIUNs was required and a manual file was uploaded. Data was published at 10:09.	Minor
23/08/2017	EA1	Timing	SEMO	System	There was a delay to the publication of the Ex-Ante 1 (EA1) Market Schedule for Trading Day 24/08/2017.	Moyle WD1 MIUN values for Trading Day 23/08/2017 were revised and set to zero.	The EA1 Market Schedule was published at 11:18 on 23/08/2017.	Minor
23/08/2017	WD1	Timing	SEMO	System	A revision was required for Within Day (WD1) Moyle Modified Interconnector Unit Nominations (MIUNs) for Trading Day 23/08/2017.	The MIUN calculator produced an error and a revised file was required.	Revised Moyle MIUNs were published at 16:52 on 23/08/2017.	Minor

**Table 19 - Trading and Settlement Code Breaches – Pricing and Scheduling**

### SEMO – Settlements

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
30/08/2017	SE1	Timing	EirGrid MDP	File Submission	The MRSO failed to submit the Non Price Effective Meter Generation (NPEG) file by on the next Week Day (D+1).	This was caused as MRSO did not issue any communication as to why the file was not received	Contacted MRSO to submit the NPEG metering file.	Minor
30/08/2017	Indicative Statements and PIRs	Timing	SEMO	File Submission	Indicative Energy & VMOC Statements and Participant Information Reports (PIRs) for Settlement Day 29/08/2017 were published after the 17:00 deadline.	The MRSO failed to submit the Non Price Effective Meter Generation (NPEG) file by 14:00 on the next Week Day (D+1).	Contacted MRSO to submit the NPEG metering file and Indicative Statements and PIRs were published.	Minor

**Table 20 - Trading and Settlement Code Breaches – Settlements**

### SEMO - Funds Transfer

There were no issues to report in August 2017.

### SEMO - Credit Management

There were no issues to report in August 2017.

### SEMO – Other

There were no issues to report in August 2017.

## Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Dispatch Instructions	Following receipt for SSE Airtricity Limited Energy Invoices for 06/06/2017 to 22/07/2017, Capacity invoices June 2017, it reported the Energy/Capacity Availability for unit GU_401640 are different from expected. The site was compensated outage from 06/06/2017 - 02/09/2017, Eirgrid in agreement with the asset manager was submitting availability profile and windfarm constraints on their behalf to the SEM. Unfortunately there was an issue identified whereby there was an error with the windfarm constraint value going to the sem from the 12th. The market provided payment for 06th - 12th June however there is a significant period of 13th June to 22nd July where minimal or no Energy/Capacity payments received. We wish for this to be corrected in time of minimize the affect out July 2017 Capacity Invoice due out on the 10th August 2017.	F0073332	2017-08-01	2017-08-11	Settlement
Dispatch Instructions	(GU_400850 AD2). Dispatch instructions issued in EDIL at 16:21 - 431mw, 18:12 - 427mw and 22:19 - 218mw. However, these were not included in the settlement data. The last dispatch instruction which issued at 07:30 (432mw) applied to the whole day which has resulted in high uninstructed imbalances.	F0073787	2017-08-23	2017-09-07	Settlement
Dispatch Instructions	(GU_400290 LE3) There are dispatch instructions for this unit in EDIL which the unit follows. However, there are no DQ values in the settlement data. (GU_400290 LE3) No DQ data for 10th August	F0073792	2017-08-23	2017-08-24	Settlement
Dispatch Instructions	DQ values used in this invoice do not match those in EDIL records, Subsequently large uninstructed imbalances payments were calculated, especially on the 11 August. Please see correspondence with helpdesk ref F0073741 for more details. GU_400530.	F0073793	2017-08-23	2017-09-07	Settlement
Dispatch Instructions	The data presented by the market for our DQ is in correct and doesnt reflect that the unit was dispatched down during the night. As a result we have an uninstructed imbalance which is not appropriate. The unit affected is GU_401860. The unit ran as requested on the night as per dispatch instructions be Eirgrid. The market report covering the period from 00:00 on the 11th August until 06:19 on the 11th shows a DQ of 114MW and seems to miss 3 dispatch instructions we received. I have attached a market report showing the incorrect DQ value over this period and also the dispatch from EDIL highlighting the dispatch instructions. I believe at least the following 4 dispatch instructions were not picked up by the market. 100MW@00:33 90MW @01:09 70MW@01:58 41MW@03:04	F0073795	2017-08-23	2017-09-07	Settlement
Dispatch Instructions	SEM-O Query Ref F0073797 refers: We have identified an issue with Dispatch Instructions for this Trade Date. Could I ask you to submit a formal query for your affected units. On checking settlement data for 11th August, I noticed high uninstructed imbalances for Power Gen units. I noticed that up to about 8a.m. in the morning the DQ's are incorrect. I had raised a query by email but was asked to submit a formal query. Power Gen units affected are GU_400200, GU_400201, GU_400202, GU_400850, GU_400210, GU_400211, GU_400220, GU_400221, GU_400281, GU_400250, GU_400240, GU_400270, GU_400311, GU_400362, GU_400363, GU_400370 and GU_402080.	F0073802	2017-08-24	2017-09-07	Settlement
Dispatch Instructions	There is a variance between Initial PIR data published by the market and our corresponding HNC data from the 10th Aug - 12 Aug. The issue is on the dispatch quantity values for certain trading periods as highlighted in the attached file. This has resulted in significant uninstructed imbalances during the periods. The variance is on 10 Aug - full day 11 Aug - full day 12 Aug - 00:00 - 01:00	F0073810	2017-08-24	2017-09-07	Settlement

**Table 21- 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 August 2017.

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

Table 22 - 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	Target	Actual	Target	Actual	Target	Actual	Target	Actual
01/08/2017	11:00	09:57	13:00	12:04	09:30	08:34	16:00	14:33	17:00	14:35
02/08/2017	11:00	09:46	13:00	11:48	09:30	08:23	16:00	14:39	17:00	14:27
03/08/2017	11:00	10:00	13:00	11:52	09:30	08:21	16:00	14:38	17:00	14:37
04/08/2017	11:00	10:01	13:00	12:00	09:30	08:25	16:00	14:40	17:00	14:41
05/08/2017	11:00	09:52	13:00	11:56	09:30	08:28	16:00	14:31	17:00	14:36
06/08/2017	11:00	09:54	13:00	11:55	09:30	08:43	16:00	14:39	17:00	14:28
07/08/2017	11:00	09:59	13:00	11:56	09:30	08:35	16:00	14:42	17:00	14:29
08/08/2017	11:00	10:05	13:00	12:03	09:30	08:24	16:00	14:44	17:00	14:22
09/08/2017	11:00	10:04	13:00	11:58	09:30	08:23	16:00	14:33	17:00	14:28
10/08/2017	11:00	09:58	13:00	11:48	09:30	08:28	16:00	14:34	17:00	14:28
11/08/2017	11:00	10:04	13:00	12:03	09:30	08:23	16:00	14:27	17:00	14:39
12/08/2017	11:00	09:50	13:00	11:49	09:30	08:24	16:00	14:32	17:00	15:03
13/08/2017	11:00	09:51	13:00	11:54	09:30	08:17	16:00	14:30	17:00	14:33
14/08/2017	11:00	09:57	13:00	11:48	09:30	08:25	16:00	14:44	17:00	14:27
15/08/2017	11:00	10:01	13:00	11:58	09:30	08:27	16:00	14:41	17:00	14:21
16/08/2017	11:00	10:01	13:00	12:00	09:30	08:25	16:00	14:38	17:00	14:22
17/08/2017	11:00	09:59	13:00	12:17	09:30	08:27	16:00	14:30	17:00	14:36
18/08/2017	11:00	09:48	13:00	11:49	09:30	08:34	16:00	14:22	17:00	14:54
19/08/2017	11:00	09:53	13:00	11:53	09:30	08:21	16:00	14:57	17:00	14:40
20/08/2017	11:00	10:25	13:00	11:50	09:30	08:17	16:00	14:37	17:00	14:26
21/08/2017	11:00	10:26	13:00	12:08	09:30	08:14	16:00	15:07	17:00	14:43
22/08/2017	11:00	09:43	13:00	11:45	09:30	08:21	16:00	14:52	17:00	14:19
23/08/2017	11:00	09:48	13:00	11:47	09:30	08:49	16:00	14:31	17:00	14:14
24/08/2017	11:00	11:06	13:00	12:09	09:30	08:23	16:00	14:46	17:00	14:24
25/08/2017	11:00	09:48	13:00	11:48	09:30	08:14	16:00	14:23	17:00	14:35
26/08/2017	11:00	09:53	13:00	11:50	09:30	08:19	16:00	14:18	17:00	14:42
27/08/2017	11:00	09:46	13:00	11:41	09:30	08:19	16:00	14:26	17:00	15:13
28/08/2017	11:00	10:19	13:00	11:45	09:30	08:24	16:00	14:40	17:00	14:35
29/08/2017	11:00	09:46	13:00	11:42	09:30	08:35	16:00	14:43	17:00	14:34
30/08/2017	11:00	10:03	13:00	11:53	09:30	08:27	16:00	15:15	17:00	14:36
31/08/2017	11:00	09:58	13:00	11:55	09:30	08:24	16:00	14:40	17:00	14:42

Table 23 – MSP Runs

## Market Operator Monthly Report

### Settlement Runs

Indicative							
Trading	Actual	Target	Actual	Trading	Actual	Target	Actual
Day	Date	Time	Time	Day	Date	Time	Time
01/08/2017	02/08/2017	17:00	15:34	01/08/2017	08/08/2017	12:00	07:55
02/08/2017	03/08/2017	17:00	16:07	02/08/2017	09/08/2017	12:00	08:52
03/08/2017	04/08/2017	17:00	16:36	03/08/2017	10/08/2017	12:00	08:37
04/08/2017	07/08/2017	17:00	09:33	04/08/2017	11/08/2017	12:00	11:58
05/08/2017	07/08/2017	17:00	09:59	05/08/2017	11/08/2017	12:00	13:04
06/08/2017	07/08/2017	17:00	10:11	06/08/2017	11/08/2017	12:00	08:07
07/08/2017	08/08/2017	17:00	16:00	07/08/2017	14/08/2017	12:00	09:11
08/08/2017	09/08/2017	17:00	16:28	08/08/2017	15/08/2017	12:00	08:24
09/08/2017	10/08/2017	17:00	16:12	09/08/2017	16/08/2017	12:00	08:15
10/08/2017	11/08/2017	17:00	15:36	10/08/2017	17/08/2017	12:00	09:43
11/08/2017	14/08/2017	17:00	11:22	11/08/2017	18/08/2017	12:00	11:13
12/08/2017	14/08/2017	17:00	13:25	12/08/2017	18/08/2017	12:00	12:12
13/08/2017	14/08/2017	17:00	15:32	13/08/2017	18/08/2017	12:00	07:22
14/08/2017	15/08/2017	17:00	15:54	14/08/2017	21/08/2017	12:00	09:04
15/08/2017	16/08/2017	17:00	16:12	15/08/2017	22/08/2017	12:00	08:25
16/08/2017	17/08/2017	17:00	16:09	16/08/2017	23/08/2017	12:00	10:29
17/08/2017	18/08/2017	17:00	16:02	17/08/2017	24/08/2017	12:00	08:27
18/08/2017	21/08/2017	17:00	12:18	18/08/2017	25/08/2017	12:00	11:28
19/08/2017	21/08/2017	17:00	14:02	19/08/2017	25/08/2017	12:00	12:32
20/08/2017	21/08/2017	17:00	15:56	20/08/2017	25/08/2017	12:00	08:24
21/08/2017	22/08/2017	17:00	16:18	21/08/2017	28/08/2017	12:00	08:56
22/08/2017	23/08/2017	17:00	15:54	22/08/2017	29/08/2017	12:00	09:23
23/08/2017	24/08/2017	17:00	16:35	23/08/2017	30/08/2017	12:00	08:58
24/08/2017	25/08/2017	17:00	16:03	24/08/2017	31/08/2017	12:00	08:40
25/08/2017	28/08/2017	17:00	12:02	25/08/2017	01/09/2017	12:00	12:33
26/08/2017	28/08/2017	17:00	13:20	26/08/2017	01/09/2017	12:00	13:33
27/08/2017	28/08/2017	17:00	15:37	27/08/2017	01/09/2017	12:00	08:31
28/08/2017	29/08/2017	17:00	15:44	28/08/2017	04/09/2017	12:00	11:29
29/08/2017	30/08/2017	17:00	17:44	29/08/2017	05/09/2017	12:00	08:31
30/08/2017	31/08/2017	17:00	16:31	30/08/2017	06/09/2017	12:00	07:16
31/08/2017	01/09/2017	17:00	16:36	31/08/2017	07/09/2017	12:00	11:14

Table 24 – 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
01/10/2016	€588,508.40	-€8,918.87	-€171,588.78
02/10/2016	€695,496.65	-€14,324.68	-€158,400.40
03/10/2016	€851,843.59	€2,513.28	-€172,492.23
04/10/2016	€1,458,136.05	-€34,126.64	-€183,940.10
05/10/2016	€1,034,632.58	€28,642.11	-€182,957.87
06/10/2016	€501,418.38	-€23,710.92	-€183,057.63
07/10/2016	€768,598.93	-€12,609.20	-€187,080.24
08/10/2016	€764,269.17	€15,163.35	-€176,626.63
09/10/2016	€694,695.21	€184.58	-€170,378.25
10/10/2016	€528,141.01	€25,875.53	-€191,875.15
11/10/2016	€284,246.21	-€13,606.74	-€187,454.92
12/10/2016	€447,514.99	-€30,842.25	-€192,961.10
13/10/2016	€151,134.33	-€13,355.34	-€195,221.64
14/10/2016	€430,183.76	-€22,566.32	-€191,485.94
15/10/2016	€300,656.23	-€29,668.35	-€175,296.27
16/10/2016	€468,094.80	-€16,032.98	-€158,815.86
17/10/2016	€438,579.40	-€37,843.71	-€183,515.17
18/10/2016	€342,696.70	€3,554.83	-€190,005.81
19/10/2016	€146,197.27	-€20,059.24	-€202,058.88
20/10/2016	€258,466.43	-€48,963.68	-€204,159.57

## Market Operator Monthly Report

21/10/2016	€249,643.69	-€14,592.68	-€201,002.64
22/10/2016	€530,986.82	-€15,298.38	-€177,531.31
23/10/2016	€561,694.17	-€26,065.05	-€164,730.74
24/10/2016	€401,362.80	€4,719.88	-€196,833.81
25/10/2016	€391,214.46	-€62,462.63	-€206,345.53
26/10/2016	€287,150.00	-€33,111.56	-€199,012.87
27/10/2016	€218,712.06	-€10,630.05	-€193,358.45
28/10/2016	€292,296.47	-€28,006.72	-€199,180.70
29/10/2016	€307,630.66	-€17,377.78	-€178,068.51
30/10/2016	€227,610.21	-€16,193.66	-€177,139.60
31/10/2016	€252,091.74	-€21,699.82	-€178,099.86
01/11/2016	€293,474.45	-€67,609.76	-€192,085.13
02/11/2016	€254,535.38	-€13,376.75	-€206,892.91
03/11/2016	€376,079.69	-€28,308.61	-€204,403.02
04/11/2016	€701,523.69	-€41,594.81	-€198,063.82
05/11/2016	€387,249.31	-€5,984.13	-€175,157.62
06/11/2016	€514,425.63	-€11,534.84	-€169,837.55
07/11/2016	€1,127,011.52	€6,794.54	-€209,253.46
08/11/2016	€1,021,388.24	-€39,628.91	-€212,137.87
09/11/2016	€921,181.60	-€27,519.93	-€209,544.14
10/11/2016	€310,229.18	-€55,721.01	-€206,766.44
11/11/2016	€506,203.82	-€43,946.39	-€204,980.25
12/11/2016	€414,326.65	-€19,769.46	-€187,189.37
13/11/2016	€257,734.16	-€18,328.87	-€179,141.49
14/11/2016	€368,139.79	-€5,955.88	-€198,410.11
15/11/2016	€528,083.74	-€35,284.03	-€203,149.83
16/11/2016	€411,276.23	-€38,193.18	-€197,590.61
17/11/2016	€788,278.79	-€49,085.05	-€208,289.70



## Market Operator Monthly Report

18/11/2016	€358,565.21	-€18,943.55	-€211,003.95
19/11/2016	€564,213.97	-€17,743.72	-€198,319.19
20/11/2016	€675,744.97	-€21,901.30	-€194,169.93
21/11/2016	€779,665.98	-€35,682.18	-€214,687.03
22/11/2016	€656,315.79	-€12,939.39	-€212,700.96
23/11/2016	€344,337.98	-€19,727.41	-€225,407.06
24/11/2016	€282,546.78	-€16,647.67	-€224,027.98
25/11/2016	€252,998.24	-€9,616.94	-€221,510.91
26/11/2016	€376,722.73	-€5,239.17	-€203,512.05
27/11/2016	€432,458.81	€4,094.90	-€191,553.33
28/11/2016	€528,694.39	-€19,113.09	-€219,070.96
29/11/2016	€470,092.65	-€25,198.34	-€224,612.99
30/11/2016	€415,589.69	-€19,310.35	-€225,474.43
01/12/2016	€408,948.37	-€12,732.88	-€230,421.75
02/12/2016	€497,830.59	-€60,142.90	-€225,150.09
03/12/2016	€610,505.74	-€11,456.99	-€202,187.74
04/12/2016	€404,764.82	-€2,491.96	-€186,982.40
05/12/2016	€778,207.55	-€30,306.36	-€220,530.59
06/12/2016	€471,985.61	-€8,839.10	-€210,873.61
07/12/2016	€435,371.82	-€17,466.17	-€204,878.32
08/12/2016	€513,133.29	-€32,325.91	-€212,111.27
09/12/2016	€440,687.82	-€18,965.70	-€200,154.69
10/12/2016	€508,736.96	-€38,877.82	-€190,400.53
11/12/2016	€403,593.17	-€15,511.77	-€186,371.67
12/12/2016	€273,272.43	-€10,779.62	-€215,955.84
13/12/2016	€310,257.18	-€27,025.44	-€209,918.81
14/12/2016	€504,679.48	-€137,587.45	-€217,740.30
15/12/2016	€373,881.10	-€1,369.73	-€211,907.78

## Market Operator Monthly Report

16/12/2016	€289,939.72	€16,965.47	-€217,179.12
17/12/2016	€518,752.27	-€24,932.22	-€196,743.72
18/12/2016	€434,322.58	€7,475.92	-€186,979.77
19/12/2016	€305,425.08	€112,377.94	-€219,034.39
20/12/2016	€513,521.68	€340,981.84	-€219,720.76
21/12/2016	€387,903.90	€105,050.72	-€212,157.72
22/12/2016	€307,063.91	€2,260.95	-€207,229.89
23/12/2016	€801,538.29	€1,250.56	-€192,113.57
24/12/2016	€644,176.34	-€3,819.60	-€179,510.27
25/12/2016	€646,312.60	€6,531.08	-€160,276.79
26/12/2016	€491,051.80	-€10,272.32	-€165,567.66
27/12/2016	€280,684.38	-€21,663.23	-€176,704.18
28/12/2016	€531,636.61	-€22,317.02	-€186,871.14
29/12/2016	€812,015.00	-€33,779.04	-€189,186.96
30/12/2016	€326,483.33	-€2,252.78	-€182,059.26
31/12/2016	€383,369.61	-€18,924.22	-€174,413.93
01/01/2017	€642,480.06	€4,190.68	-€162,708.47
02/01/2017	€403,989.69	-€18,279.05	-€186,699.84
03/01/2017	€544,065.75	€450.01	-€213,428.71
04/01/2017	€378,989.35	-€245.02	-€222,072.82
05/01/2017	€570,595.16	-€16,510.58	-€215,818.00
06/01/2017	€369,135.05	-€27,802.20	-€212,817.23
07/01/2017	€456,293.27	-€7,692.27	-€195,534.75
08/01/2017	€412,565.79	-€15,885.29	-€180,560.11
09/01/2017	€596,126.10	€376.15	-€199,554.21
10/01/2017	€530,653.17	-€783.35	-€205,034.27
11/01/2017	€379,109.64	-€13,915.08	-€205,086.09
12/01/2017	€777,260.46	-€34,139.81	-€215,818.37

## Market Operator Monthly Report

13/01/2017	€406,625.56	-€32,596.55	-€215,250.58
14/01/2017	€542,267.00	-€6,541.97	-€195,260.21
15/01/2017	€333,140.52	€11,346.18	-€183,170.01
16/01/2017	€265,139.44	-€17,936.86	-€214,427.41
17/01/2017	€681,532.84	-€38,676.33	-€217,889.69
18/01/2017	€633,677.63	-€4,594.27	-€217,296.92
19/01/2017	€474,218.31	-€28,143.30	-€217,707.49
20/01/2017	€455,026.72	-€8,997.89	-€213,314.48
21/01/2017	€446,113.73	-€23,461.18	-€198,302.55
22/01/2017	€495,524.86	€647.78	-€195,411.30
23/01/2017	€481,594.38	-€37,478.34	-€211,313.82
24/01/2017	€454,069.13	-€30,263.16	-€206,560.13
25/01/2017	€465,854.86	-€9,904.17	-€198,111.00
26/01/2017	€366,066.48	-€10,913.28	-€204,226.65
27/01/2017	€561,968.06	€155.74	-€210,803.46
28/01/2017	€599,372.40	-€27,690.86	-€197,053.46
29/01/2017	€716,120.96	-€19,340.95	-€191,285.82
30/01/2017	€509,039.33	-€20,766.08	-€205,698.20
31/01/2017	€303,765.41	-€25,213.21	-€216,662.79
01/02/2017	€634,300.76	€3,707.16	-€205,917.59
02/02/2017	€723,018.04	-€29,474.42	-€200,079.34
03/02/2017	€539,333.96	€249.40	-€209,309.30
04/02/2017	€450,085.63	-€18,777.31	-€193,985.39
05/02/2017	€529,713.90	-€27,276.23	-€189,870.64
06/02/2017	€761,650.64	-€22,359.79	-€209,209.17
07/02/2017	€521,865.59	-€22,057.63	-€220,478.27
08/02/2017	€562,062.58	-€42,208.28	-€217,356.70
09/02/2017	€363,268.69	€2,455.88	-€210,936.28

## Market Operator Monthly Report

10/02/2017	€434,404.44	-€41,675.37	-€222,802.06
11/02/2017	€863,406.07	-€30,879.36	-€195,490.48
12/02/2017	€574,278.89	€8,182.35	-€182,327.90
13/02/2017	€396,145.08	-€15,998.44	-€203,389.70
14/02/2017	€463,227.89	-€41,699.89	-€213,276.79
15/02/2017	€539,925.78	€9,449.11	-€207,882.80
16/02/2017	€261,460.14	-€82,217.98	-€212,648.12
17/02/2017	€483,449.13	-€19,752.27	-€206,094.31
18/02/2017	€387,687.60	-€1,478.64	-€186,257.51
19/02/2017	€460,500.74	€1,577.29	-€178,309.47
20/02/2017	€283,296.95	-€15,711.33	-€197,257.59
21/02/2017	€413,708.47	€7,235.25	-€200,752.79
22/02/2017	€390,469.08	-€5,426.14	-€204,388.39
23/02/2017	€531,561.26	-€17,618.94	-€200,567.00
24/02/2017	€651,357.16	-€58,112.53	-€206,971.04
25/02/2017	€398,723.07	-€19,129.56	-€182,693.56
26/02/2017	€349,830.38	€7,836.58	-€172,442.67
27/02/2017	€960,964.35	-€56,905.07	-€211,232.45
28/02/2017	€481,927.25	-€16,914.43	-€212,021.99
01/03/2017	€673,185.77	-€25,305.00	-€218,038.48
02/03/2017	€517,773.73	-€358.03	-€216,066.14
03/03/2017	€468,028.41	€4,716.27	-€213,259.94
04/03/2017	€504,896.60	€22,975.43	-€189,757.11
05/03/2017	€532,837.64	-€576.96	-€181,319.04
06/03/2017	€362,831.11	-€15,209.00	-€211,089.19
07/03/2017	€479,790.12	-€12,388.23	-€214,449.83
08/03/2017	€585,520.61	-€22,162.37	-€206,162.80
09/03/2017	€417,069.65	-€37,424.69	-€207,098.98

## Market Operator Monthly Report

10/03/2017	€428,585.73	-€8,181.62	-€198,769.26
11/03/2017	€628,235.64	€9,074.82	-€187,471.23
12/03/2017	€362,381.50	-€17,697.26	-€171,791.85
13/03/2017	€382,910.71	-€5,394.44	-€195,769.94
14/03/2017	€368,249.97	-€20,333.79	-€195,110.87
15/03/2017	€400,368.76	-€7,098.59	-€200,286.01
16/03/2017	€368,997.77	€40.13	-€192,470.84
17/03/2017	€788,764.44	€4,995.75	-€170,467.28
18/03/2017	€858,711.38	€5,951.05	-€168,169.24
19/03/2017	€690,958.15	€26,859.01	-€165,432.23
20/03/2017	€788,579.13	-€401.27	-€187,610.95
21/03/2017	€373,189.27	-€19,238.40	-€206,252.62
22/03/2017	€566,724.09	-€18,341.64	-€203,562.35
23/03/2017	€734,388.81	€126,951.80	-€207,034.56
24/03/2017	€343,675.44	€83,357.09	-€205,184.06
25/03/2017	€349,479.28	-€29,311.83	-€185,128.31
26/03/2017	€402,796.65	-€2,990.08	-€160,570.11
27/03/2017	€470,620.00	-€18,723.44	-€193,753.09
28/03/2017	€187,503.59	-€9,490.57	-€200,128.74
29/03/2017	€408,706.82	€1,608.48	-€196,245.25
30/03/2017	€530,909.13	€5,976.31	-€192,375.89
31/03/2017	€311,661.45	€6,124.07	-€190,818.13
01/04/2017	€445,980.67	-€9,297.51	-€174,702.29
02/04/2017	€440,774.67	-€211.25	-€165,989.62
03/04/2017	€475,573.38	-€2,688.05	-€183,791.23
04/04/2017	€277,538.44	-€7,812.90	-€193,570.91
05/04/2017	€239,112.12	€24,828.28	-€200,512.20
06/04/2017	€201,709.68	-€1,387.50	-€203,743.82

## Market Operator Monthly Report

07/04/2017	€541,918.18	-€24,473.77	-€198,083.51
08/04/2017	€481,149.94	-€2,248.37	-€174,591.57
09/04/2017	€359,411.09	€8,305.16	-€167,001.40
10/04/2017	€191,814.23	-€6,554.00	-€190,147.41
11/04/2017	€482,196.30	-€7,665.12	-€190,409.69
12/04/2017	€298,048.50	€1,486.97	-€188,510.58
13/04/2017	€351,124.07	€15,931.84	-€198,148.58
14/04/2017	€533,992.92	-€1,631.32	-€188,060.01
15/04/2017	€334,083.01	€14,006.91	-€170,347.94
16/04/2017	€543,725.15	-€1,674.32	-€157,940.84
17/04/2017	€384,580.88	€1,212.90	-€167,920.90
18/04/2017	€263,324.98	-€17,787.03	-€188,621.93
19/04/2017	€331,371.48	€1,462.98	-€194,668.85
20/04/2017	€228,795.24	€8,661.67	-€192,882.95
21/04/2017	€205,508.80	€7,041.68	-€188,233.99
22/04/2017	€239,332.26	-€11,175.45	-€176,659.17
23/04/2017	€293,004.18	-€10,147.97	-€168,719.33
24/04/2017	€291,681.26	-€3,595.18	-€181,339.21
25/04/2017	€444,760.00	€14,877.07	-€185,536.04
26/04/2017	€431,441.57	-€1,198.54	-€198,254.70
27/04/2017	€252,939.14	-€28,182.11	-€195,121.42
28/04/2017	€254,789.68	-€4,309.94	-€194,716.09
29/04/2017	€592,066.24	-€1,348.49	-€162,245.97
30/04/2017	€496,303.76	€2,493.15	-€154,565.06
01/05/2017	€410,897.02	-€10,658.02	-€167,241.64
02/05/2017	€290,556.65	-€32,802.67	-€185,936.60
03/05/2017	€326,127.10	€7,709.27	-€182,816.49
04/05/2017	€364,923.73	-€618.01	-€178,417.73

## Market Operator Monthly Report

05/05/2017	€499,984.87	€25,122.14	-€171,803.97
06/05/2017	€540,275.48	-€10,630.10	-€162,769.16
07/05/2017	€329,811.48	-€6,911.16	-€162,750.94
08/05/2017	€306,740.51	€4,114.17	-€181,464.47
09/05/2017	€364,831.83	€2,912.09	-€187,119.76
10/05/2017	€163,412.13	€2,121.55	-€188,694.53
11/05/2017	€307,937.42	-€12,010.85	-€188,150.72
12/05/2017	€293,113.80	-€5,970.67	-€188,596.57
13/05/2017	€293,256.78	€17,282.99	-€164,803.48
14/05/2017	€345,677.53	€14,025.84	-€152,527.03
15/05/2017	€348,567.19	€1,490.51	-€173,480.10
16/05/2017	€414,864.29	-€4,020.41	-€176,647.08
17/05/2017	€501,113.66	-€8,473.32	-€181,983.38
18/05/2017	€252,885.52	-€58,631.56	-€187,493.38
19/05/2017	€390,250.92	-€13,718.22	-€184,303.20
20/05/2017	€287,857.39	-€5,009.68	-€166,129.89
21/05/2017	€506,102.40	-€2,534.42	-€150,197.47
22/05/2017	€327,434.03	€14,032.61	-€176,284.02
23/05/2017	€446,223.92	-€4,784.26	-€186,377.06
24/05/2017	€389,708.69	-€11,132.72	-€190,029.36
25/05/2017	€361,835.25	-€3,796.99	-€180,790.31
26/05/2017	€365,887.37	€5,904.96	-€177,828.34
27/05/2017	€407,578.62	-€2,051.54	-€165,263.62
28/05/2017	€139,840.22	€4,014.44	-€157,702.45
29/05/2017	€423,103.81	€108,831.41	-€186,066.11
30/05/2017	€230,961.74	-€4,547.63	-€182,995.30
31/05/2017	€284,783.53	-€6,319.55	-€179,958.34
01/06/2017	€111,510.92	€2,037.18	-€181,892.96

## Market Operator Monthly Report

02/06/2017	€268,607.28	-€12,321.73	-€182,128.12
03/06/2017	€230,136.02	€6,638.33	-€161,111.49
04/06/2017	€289,607.24	€10,072.09	-€154,052.18
05/06/2017	€404,934.89	-€9,422.39	-€162,443.77
06/06/2017	€512,248.03	-€3,313.12	-€167,438.51
07/06/2017	€324,030.36	-€10,155.42	-€184,566.56
08/06/2017	€653,660.44	-€22,066.31	-€188,238.92
09/06/2017	€513,618.32	-€6,664.48	-€180,690.32
10/06/2017	€441,848.97	-€9,216.84	-€153,081.84
11/06/2017	€662,177.36	€6,052.10	-€146,437.87
12/06/2017	€680,074.56	-€10,245.91	-€174,769.27
13/06/2017	€394,836.84	-€9,008.01	-€182,883.81
14/06/2017	€410,203.50	-€3,304.05	-€176,839.22
15/06/2017	€271,951.77	€12,372.89	-€173,258.79
16/06/2017	€364,884.57	-€5.48	-€178,011.62
17/06/2017	€412,917.06	-€253.96	-€163,132.29
18/06/2017	€326,400.39	-€12,634.41	-€159,807.62
19/06/2017	€378,055.34	-€1,030.21	-€185,101.21
20/06/2017	€313,398.47	-€9,921.07	-€184,169.31
21/06/2017	€236,727.73	€323.69	-€189,676.86
22/06/2017	€231,820.53	-€10,987.99	-€182,377.76
23/06/2017	€253,159.55	€9,043.05	-€173,207.04
24/06/2017	€315,975.42	-€3,544.17	-€157,622.30
25/06/2017	€272,250.85	-€28,594.63	-€153,307.67
26/06/2017	€413,351.18	-€1,467.89	-€182,239.13
27/06/2017	€288,139.58	-€14,188.43	-€186,099.76
28/06/2017	€280,716.05	-€16,591.54	-€187,425.88
29/06/2017	€685,996.09	-€8,376.38	-€175,441.78



## Market Operator Monthly Report

30/06/2017	€820,295.81	€15,061.81	-€169,626.22
01/07/2017	€491,603.56	-€6,409.67	-€160,617.89
02/07/2017	€208,160.66	-€10,030.56	-€153,632.64
03/07/2017	€381,942.61	-€2,445.27	-€181,652.24
04/07/2017	€614,614.96	-€54,136.64	-€185,447.77
05/07/2017	€417,108.38	-€47,317.01	-€188,442.52
06/07/2017	€341,491.16	-€14,833.35	-€188,059.49
07/07/2017	€373,432.08	€12,185.82	-€183,314.63
08/07/2017	€391,886.67	-€7,069.22	-€162,886.08
09/07/2017	€212,844.06	€787.75	-€155,817.69
10/07/2017	€593,860.85	-€17,542.24	-€180,881.23
11/07/2017	€675,387.73	-€15,300.33	-€181,346.59
12/07/2017	€273,455.65	-€298.47	-€175,978.58
13/07/2017	€459,463.38	-€20,749.02	-€174,869.86
14/07/2017	€383,822.32	-€29,424.50	-€173,390.69
15/07/2017	€561,186.52	€11,726.76	-€159,302.25
16/07/2017	€440,988.02	€4,958.18	-€152,230.01
17/07/2017	€334,386.07	-€10,003.98	-€177,771.18
18/07/2017	€280,816.30	-€15,208.54	-€175,194.41
19/07/2017	€430,977.83	-€25,784.67	-€179,746.80
20/07/2017	€380,904.94	€6,688.65	-€179,597.48
21/07/2017	€516,923.77	€10,691.22	-€171,102.45
22/07/2017	€226,623.50	-€9,189.06	-€163,041.19
23/07/2017	€397,589.41	-€1,002.78	-€155,017.96
24/07/2017	€346,940.16	€2,211.41	-€177,086.65
25/07/2017	€314,691.21	€11,661.85	-€184,658.76
26/07/2017	€436,005.59	-€16,549.70	-€169,934.14
27/07/2017	€484,461.19	-€6,222.41	-€171,375.29

## Market Operator Monthly Report

28/07/2017	€602,693.56	€4,395.24	-€168,546.32
29/07/2017	€313,879.05	-€4,178.50	-€154,426.29
30/07/2017	€470,722.38	-€5,201.98	-€150,791.55
31/07/2017	€406,429.07	-€10,609.33	-€171,740.32
01/08/2017	€474,340.94	-€12,140.51	-€179,012.14
02/08/2017	€340,681.07	€22,432.15	-€176,625.19
03/08/2017	€489,076.74	€36,833.03	-€176,169.67
04/08/2017	€601,134.25	-€18,392.37	-€175,240.54
05/08/2017	€427,226.12	-€274.98	-€160,910.42
06/08/2017	€502,660.99	-€17,256.34	-€148,116.42
07/08/2017	€384,544.74	-€2,382.37	-€161,213.67
08/08/2017	€449,217.02	€9,462.99	-€176,347.24
09/08/2017	€579,717.70	-€5,575.84	-€173,961.40
10/08/2017	€656,329.11	-€186,873.27	-€178,344.62
11/08/2017	€1,103,919.62	-€881,803.91	-€172,002.16
12/08/2017	€344,334.68	-€4,785.98	-€162,516.58
13/08/2017	€564,109.12	€4,512.64	-€157,774.46
14/08/2017	€388,466.68	€23,812.24	-€179,993.39
15/08/2017	€288,486.09	€15,892.46	-€183,225.91
16/08/2017	€407,165.74	€14,797.62	-€178,999.18
17/08/2017	€368,060.11	-€2,258.80	-€179,114.98
18/08/2017	€459,520.73	-€8,679.84	-€171,861.92
19/08/2017	€478,179.81	€5,139.71	-€157,283.08
20/08/2017	€521,980.84	€1,088.74	-€160,825.93
21/08/2017	€586,066.54	-€184,580.49	-€181,168.70
22/08/2017	€1,001,809.99	-€11,245.73	-€190,228.61
23/08/2017	€464,007.20	-€20,873.85	-€185,809.60
24/08/2017	€446,027.47	-€15,912.08	-€184,135.43

25/08/2017	€272,826.37	€7,566.06	-€186,672.21
26/08/2017	€548,985.66	-€3,023.95	-€172,770.15
27/08/2017	€350,394.29	-€25,708.83	-€163,344.55
28/08/2017	€286,140.94	€271.23	-€182,126.58
29/08/2017	€367,845.02	-€9,244.97	-€187,302.31
30/08/2017	€296,277.73	-€7,070.71	-€189,921.37
31/08/2017	€351,083.49	-€7,623.00	-€191,407.65

Table 25 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

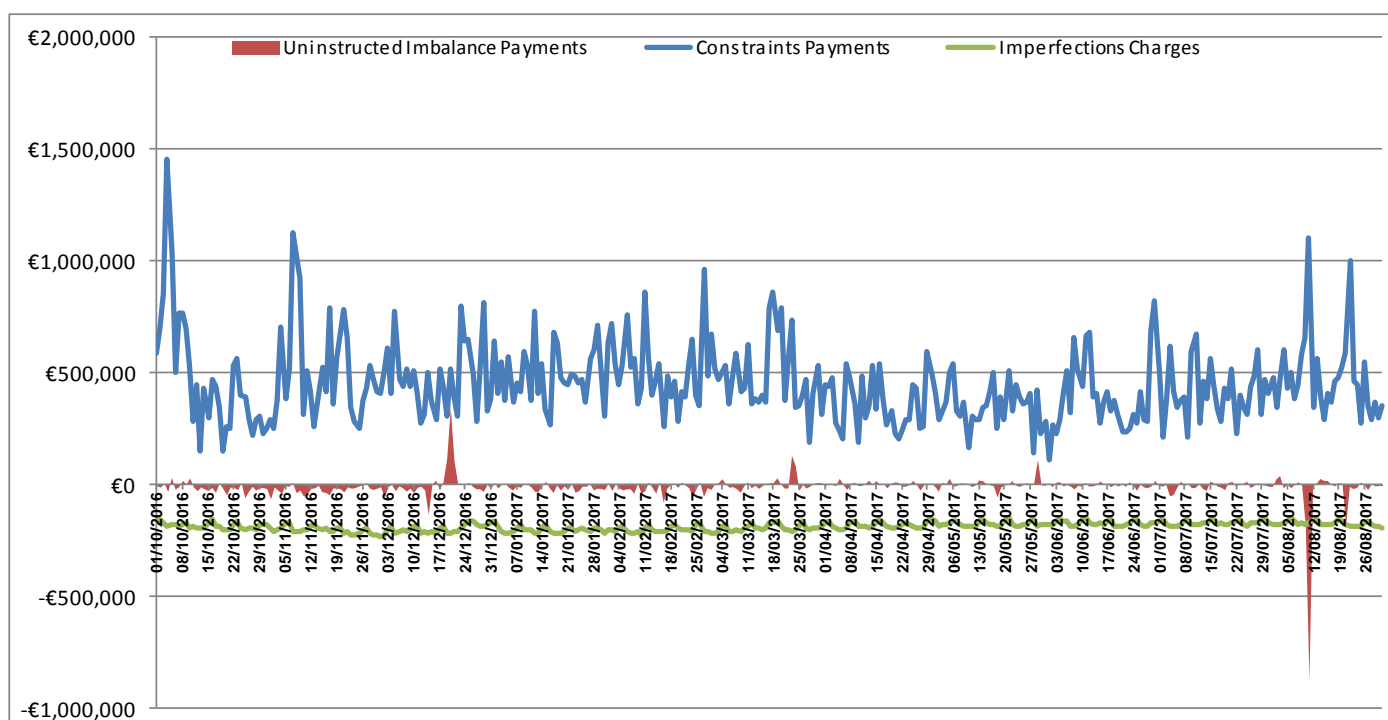


Figure 26 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
39	€9,584.60
40	€13,717.29
41	€114,729.43
42	€3,055.91
43	€71,345.79
44	€40,053.00
45	€12,438.62

46	€50,083.01
47	€26,750.89
48	€6,581.31
49	€49,551.52
50	€48,136.44
51	€6.21
52	€46,822.40
1	€18,136.47
2	€46,413.29
3	€63,861.94
4	€8,517.16
5	€89,918.37
6	€55,994.40
7	€130,015.55
8	€79,630.70
9	€73,568.20
10	€89,624.86
11	€42,145.00
12	€39,455.39
13	€137,714.00
14	€79,589.45
15	€85,661.25
16	€178,359.80
17	€140,600.39
18	€42,027.49
19	€136,034.10
20	€82,951.31
21	€68,319.43
22	€102,001.78
23	€24,196.13
24	€11,931.14
25	€72,646.11
26	€34,108.50
27	€125,550.55
28	€155,995.36
29	€15,425.77
30	€52,443.38
31	€131,881.21
32	€93,057.93
33	€43,829.44

34	€101,370.77
----	-------------

Table 27 - Make Whole Payments

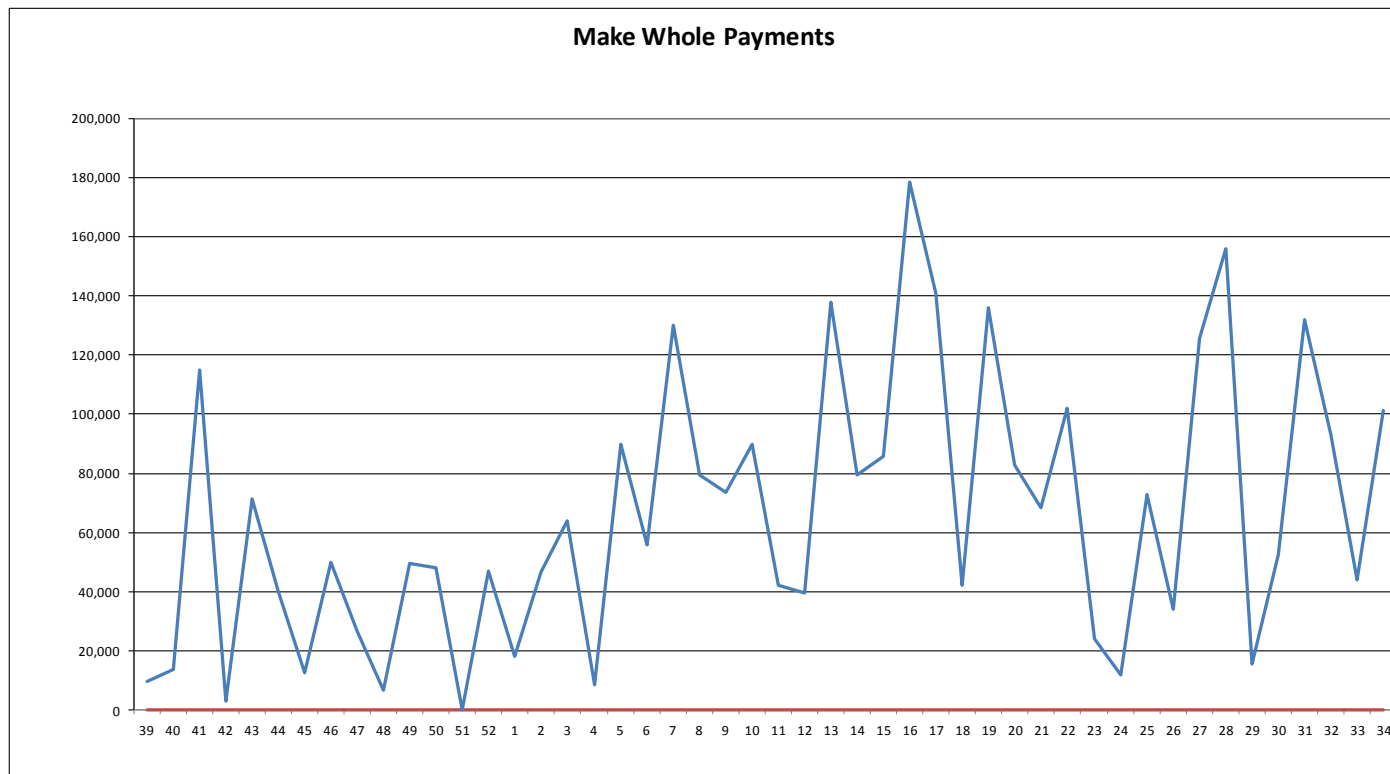


Figure 25 - Make Whole Payments

Week No	Testing Charges
39	-€65,398.63
40	€0.00
41	€0.00
42	-€6,444.66
43	-32739.69
44	106,406.47
45	-177,289.91
46	€0.00
47	€0.00
48	€0.00
49	€0.00
50	-€86,316.91
51	-€39,716.49
52	€0.00

1	€0.00
2	€0.00
3	-€12,145.26
4	€0.00
5	-€790.05
6	-€100,998.74
7	-€65,344.97
8	€0.00
9	€0.00
10	€0.00
11	-€8,504.92
12	-€33,115.55
13	-€9,425.83
14	€0.00
15	-€52,955.89
16	-€8,320.29
17	-€275.42
18	€0.00
19	-€47,373.02
20	-€4,694.35
21	€0.00
22	-€23,143.48
23	€0.00
24	€0.00
25	€0.00
26	€0.00
27	€0.00
28	-€19,970.04
29	€0.00
30	€0.00
31	-€82,186.30
32	-€101,206.00
33	€0.00
34	-€164.97

Table 28 - Testing Charges

Testing Charges

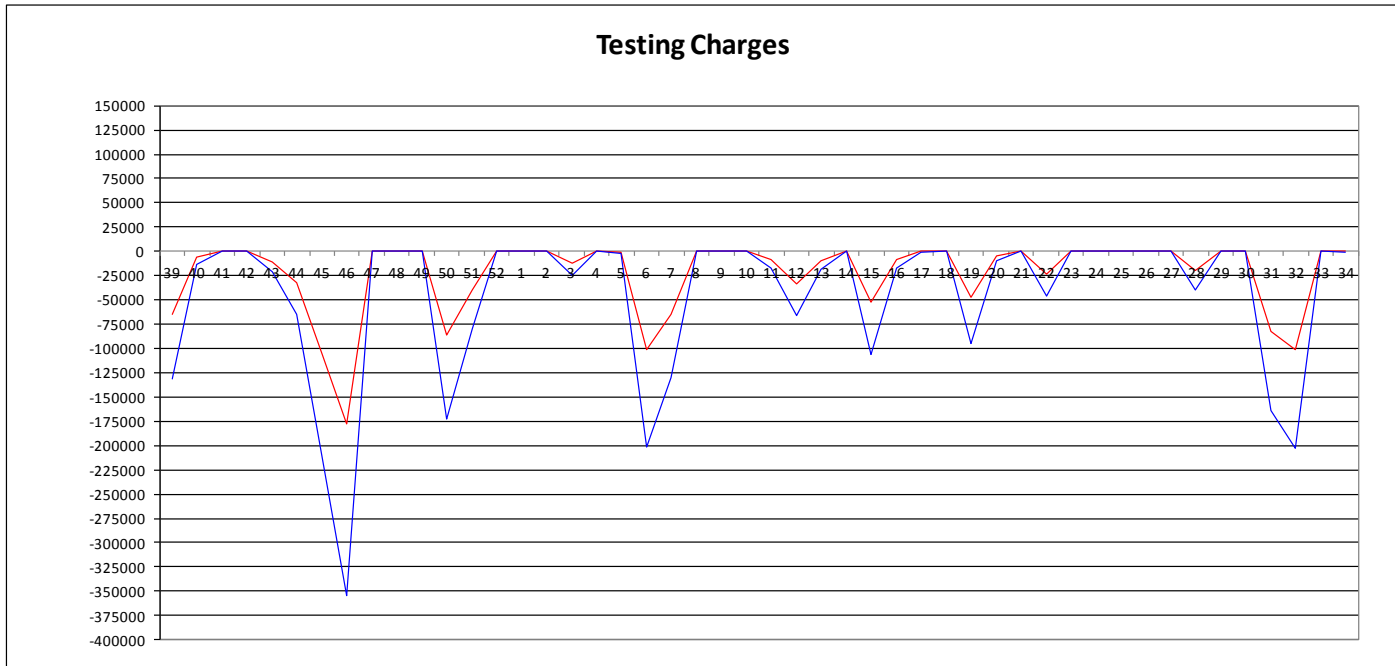


Figure 26 - Testing Charges

**Appendix F: Default Commercial Offer Data Used**

The table below lists for each unit the number of times in operations during August 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_500099	DSU_501460	17			17
PT_400124	DSU_401880	32			32
PT_400138	DSU_401590	31			31
PT_400090	DSU_401610	31			31
PT_400090	DSU_401620	31			31
PT_500067	DSU_501380	26			26
PT_400106	DSU_401330	35			35
PT_500105	DSU_501510	38			38
PT_400090	DSU_401270	31			31
PT_400133	DSU_401530	17			17
PT_400124	DSU_401490	23			23
PT_400021	GU_401960	12			12
PT_400024	GU_400120	31			31
PT_400024	GU_400121	31			31
PT_400030	GU_400180	37			37
PT_400030	GU_400181	39			39
PT_400030	GU_400182	39			39
PT_400030	GU_400183	38			38
PT_400030	GU_400200	43			43
PT_400030	GU_400201	39			39
PT_400030	GU_400202	37			37
PT_400030	GU_400203	37			37
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	36			36
PT_400030	GU_400250	35			35
PT_400030	GU_400251	35			35
PT_400030	GU_400252	36			36
PT_400030	GU_400260	35			35
PT_400030	GU_400270	36			36
PT_400030	GU_400271	36			36
PT_400030	GU_400272	37			37
PT_400030	GU_400280	35			35
PT_400030	GU_400281	35			35
PT_400030	GU_400290	36			36
PT_400030	GU_400300	38			38
PT_400030	GU_400311	38			38
PT_400030	GU_400324	38			38
PT_400030	GU_400325	40			40
PT_400030	GU_400360	35			35
PT_400030	GU_400361	35			35
PT_400030	GU_400362	35			35



## Market Operator Monthly Report

PT_400030	GU_400363	36		36
PT_400030	GU_400370	35		35
PT_400030	GU_400850	36		36
PT_400032	GU_400430	30		30
PT_400034	GU_400940	30		30
PT_400034	GU_401090	30		30
PT_400034	GU_401440	30		30
PT_400034	GU_401680	30		30
PT_400035	GU_400480	55		55
PT_400037	GU_400500	34		34
PT_400041	GU_400530	58		58
PT_400044	GU_400540	55		55
PT_400054	GU_400620	30		30
PT_400055	GU_400630	30		30
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	36		36
PT_400077	GU_400950	30		30
PT_400078	GU_401010	31		31
PT_400078	GU_401011	31		31
PT_400165	GU_401840	29		29
PT_400172	GU_401860	31		31
PT_400198	GU_402030	34		34
PT_500024	GU_500040	42		42
PT_500024	GU_500041	32		32
PT_500027	GU_500130	89		89
PT_500027	GU_500131	89		89
PT_500027	GU_500140	89		89
PT_500034	GU_501350	31		31
PT_500040	GU_500281	61		61
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	51		51
PT_500050	GU_501040	30		30
PT_500050	GU_501050	30		30
PT_500050	GU_501150	30		30
PT_500050	GU_501190	30		30
PT_500053	GU_501130	32		32
PT_500066	GU_501210	30		30

## Market Operator Monthly Report

PT_500073	GU_501230	20		20
PT_500083	I_NIMOYLE	93		93
PT_400201	I_ROIEWIC	17		17
PT_500024	I_NIMOYLE	31		31
PT_500075	I_NIMOYLE	90		90
PT_400163	I_ROIEWIC	93		93
PT_400157	I_ROIEWIC	62		62
PT_500069	I_NIMOYLE	93		93
PT_500031	I_NIMOYLE	31		31
PT_400096	I_ROIEWIC	93		93
PT_500037	I_NIMOYLE	31		31
PT_500112	I_NIMOYLE	17		17
PT_400168	I_ROIEWIC	59		59
PT_500081	I_NIMOYLE	62		62
PT_400115	I_ROIEWIC	31		31
PT_400136	I_ROIEWIC	90		90
PT_400037	I_ROIEWIC	5		5
PT_400164	I_ROIEWIC	53		53
PT_400171	I_ROIEWIC	46		46
PT_400108	I_ROIEWIC	62		62
PT_500070	I_NIMOYLE	61		61
PT_500120	I_NIMOYLE	16		16
PT_400170	I_ROIEWIC	63		63
PT_400099	I_ROIEWIC	37		37
PT_400030	I_ROIEWIC	31		31
PT_500088	I_NIMOYLE	49		49
PT_500092	I_NIMOYLE	45		45
PT_500085	I_NIMOYLE	39		39
PT_400116	DSU_401400		31	31
PT_400144	DSU_401660		31	31
PT_400124	DSU_401490		8	8
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		15	15
PT_500067	DSU_501380		5	5
PT_400111	DSU_401390		31	31
PT_400133	DSU_401910		31	31
PT_400133	DSU_401530		14	14
PT_400116	DSU_401870		31	31
PT_500098	DSU_501450		31	31
PT_500108	DSU_501560		31	31
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

## Market Operator Monthly Report

PT_400021	GU_401380			31	31
PT_400021	GU_401640			31	31
PT_400021	GU_401960			20	20
PT_400025	GU_400130			31	31
PT_400030	GU_400850			1	1
PT_400032	GU_400430			1	1
PT_400034	GU_400940			1	1
PT_400034	GU_401090			1	1
PT_400034	GU_401440			1	1
PT_400034	GU_401680			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_400054	GU_400620			1	1
PT_400055	GU_400630			1	1
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_400077	GU_400950			1	1
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
PT_500021	GU_501500			31	31
PT_500021	GU_501520			31	31

## Market Operator Monthly Report

PT_500024	GU_500040			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_500050	GU_501040			1	1
PT_500050	GU_501050			1	1
PT_500050	GU_501150			1	1
PT_500050	GU_501190			1	1
PT_500061	GU_501170			31	31
PT_500062	GU_501180			31	31
PT_500066	GU_501210			1	1
PT_500073	GU_501230			11	11
PT_500074	GU_501250			31	31
PT_500089	GU_501360			31	31
<b>Total</b>		<b>4901</b>	<b>0</b>	<b>2568</b>	<b>7469</b>
<b>Percentage</b>		<b>65.62%</b>	<b>0.00%</b>	<b>34.38%</b>	<b>100.00%</b>

Table 29 – 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	£12,863.18	£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	£97,150.99	£3,451.80	£77,643.02	£35,169.15	£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	£12,836.78	£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	£12,863.18	£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	£49,567.77	£49,405.94	£1,189.91	£131,434.13	£36,135.62	£1,706.37	£1.41	£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

Table 30 – 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	€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
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	€323.00	€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	£1,896.50	£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

Table 31 - 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
07/10/2016	39	€224,128.80	€0
14/10/2016	40	€4,791,387.54	€0
21/10/2016	41	€1,447,919.59	€0
28/10/2016	42	€968,340.03	€0
04/11/2016	43	€949,596.13	€0
11/11/2016	44	€965,954.97	€0
18/11/2016	45	€3,223,731.55	€0
25/11/2016	46	€1,696,852.72	€0
02/12/2016	47	€1,750,562.49	€0
09/11/2016	48	€1,701,789.33	€0
16/12/2016	49	€1,977,683.44	€0
23/12/2016	50	€1,018,317.35	€0
30/12/2016	51	€2,542,783.75	€0
06/01/2017	52	€2,133,795.88	€0
13/01/2017	1	€1,890,580.08	€0
20/01/2017	2	€2,124,557.97	€0
27/01/2017	3	€1,716,277.00	€0
03/02/2017	4	€1,885,524.05	€0
10/02/2017	5	€2,343,110.28	€0
17/02/2017	6	€2,386,227.52	€0
24/02/2017	7	€1,550,781.62	€0
03/03/2017	8	€1,651,490.95	€0
10/03/2017	9	€2,459,833.45	€0
17/03/2017	10	€1,941,642.14	€0
24/03/2017	11	€2,196,781.35	€0
31/03/2017	12	€2,656,663.85	€0
07/04/2017	13	€1,422,792.08	€0

14/04/2017	14	€1,323,499.99	€0
21/04/2017	15	€1,281,924.95	€0
28/04/2017	16	€917,452.61	€0
05/05/2017	17	€1,240,844.16	€0
12/05/2017	18	€1,706,133.73	€0
19/05/2017	19	€799,061.61	€0
26/05/2017	20	€1,244,315.59	€0
02/06/2017	21	€1,573,637.76	€0
09/06/2017	22	€555,421.21	€0
16/06/2017	23	€1,898,669.67	€0
24/06/2017	24	€1,997,320.39	€0
30/06/2017	25	€794,824.21	€0
07/07/2017	26	€1,977,028.07	€0
14/07/2017	27	€1,361,554.93	€0
21/07/2017	28	€1,887,633.56	€0
28/07/2017	29	€1,375,088.71	€0
04/08/2017	30	€1,705,529.87	€0
11/08/2017	31	€2,031,766.74	€0
18/08/2017	32	€1,759,007.06	€0
25/08/2017	33	€1,798,951.38	€0

Table 32 – 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
Oct-16	-€373.17	€0
Nov-16	-€395.27	€0
Dec-16	-€400.31	€0
Jan-17	-€345.12	€0
Feb-17	-€284.03	€0
Mar-17	-€276.22	€0
Apr-17	-€232.70	€0
May-17	-€253.73	€0



## Market Operator Monthly Report

---

Jun-17	-€220.17	€0
Jul-17	-€194.98	€0
Aug-17	-€174.67	€0

**Table 33 - 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</u> <u>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</u> <u>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</u> <u>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</u> <u>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</u> <u>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</u> <u>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</u> <u>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</u> <u>2017</u>	<u>15/05/2017</u>	=	=	=	<u>05/05/2017</u> <u>14/05/2017</u>
<u>Jun</u> <u>2017</u>		<u>02/06/2017</u> <u>29/06/2017</u>			<u>11/06/2017</u>
<u>July</u> <u>2017</u>	<u>19/07/2017</u>	<u>01/08/2017</u>			
<u>August</u> <u>2017</u>		<u>17/08/2017</u>	<u>30/08/2017</u>	<u>18/08/2017</u>	<u>01/08/2017</u>

Table 35 - MIP Algorithms

## Market Operator Monthly Report

---

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
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

## Market Operator Monthly Report

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
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

## Market Operator Monthly Report

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
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

## Market Operator Monthly Report

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	€1000	€84.36	MIP
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	€1000	€217.58	MIP
01/08/2017	01/08/2017	WD1	€1000	€182.44	MIP
16/08/2017	17/08/2017	EA2	€1000	€1000	MIP
22/08/2017	18/08/2017	EP2	€757.68	€89.98	MIP
31/08/2017	30/08/2017	EP1	€1000	€71.67	MIP

Table 36 - MIP Vs LR Peak Price Comparison