



Market Operator Monthly Report

January 2017

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Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of January 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 January 2017, there were two late publications as per the Trading and Settlement code.

218 general queries were received in January 2017. During the same period 201 general queries were resolved.

There were 31 defaults by Participants during January 2017. The largest of these was an Energy Week 50 2016 Initial invoice for £7,470.71 which was remedied the same day.

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	1
Market Participants	Pricing & Scheduling	-	-
	Settlement	-	-
	Funds Transfer	31	-
	Credit Risk Management	21	-
SEMO	Pricing & Scheduling	-	-
	Settlement	-	1
	Funds Transfer	-	-
	Credit Risk Management	-	-
	Other	-	-
Total		53	2

Table 1 – Trading and Settlement Code Breaches

Further details of each of the Trading and Settlement code breaches noted above are set out in [Appendix A](#)

Key:

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

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Joining and Terminating Parties and Units

No parties joined the Market in January 2017.

There were no terminating parties in January 2017.

The following units went effective in the Market in January 2017.

- PT_500032 Viridian Energy Supply Limited - GU_501540 Long Mountain Windfarm
- PT_500103 Gaelectric Green Energy Limited - GU_501480 Cregganconroe Windfarm
- PT_400197 Gaelectric Sustainable Energy Supply 2 - GU_402020 Beam Windfarm
- PT_500064 AC Automation Ltd - DSU_501200 AC Automation DSU
- PT_500065 AC Automation Ltd - SU_500078 AC Automation TSSU
- PT_500099 Endeco Technologies Ltd - DSU_501460 Endeco DSU 3
- PT_500100 Endeco Technologies Ltd - SU_500086 Endeco TSSU
- PT_500108 Powerhouse Generation Ltd - DSU_501560 Powerhouse NI DSU
- PT_500079 Powerhouse Generation Ltd - SU_500089 Powerhouse TSSU
- PT_400188 TrailStone GmbH - PT_400188_I_RIEWIC
- PT_500107 TrailStone GmbH - PT_500107_I_NIMOYLE

One unit de-registered from the Market in January 2017.

- PT_400021 Airtricity Limited – GU_401600 Beam Hill Windfarm

Suspension of Participants

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

Financial Statistics

Total Charges for Each Currency

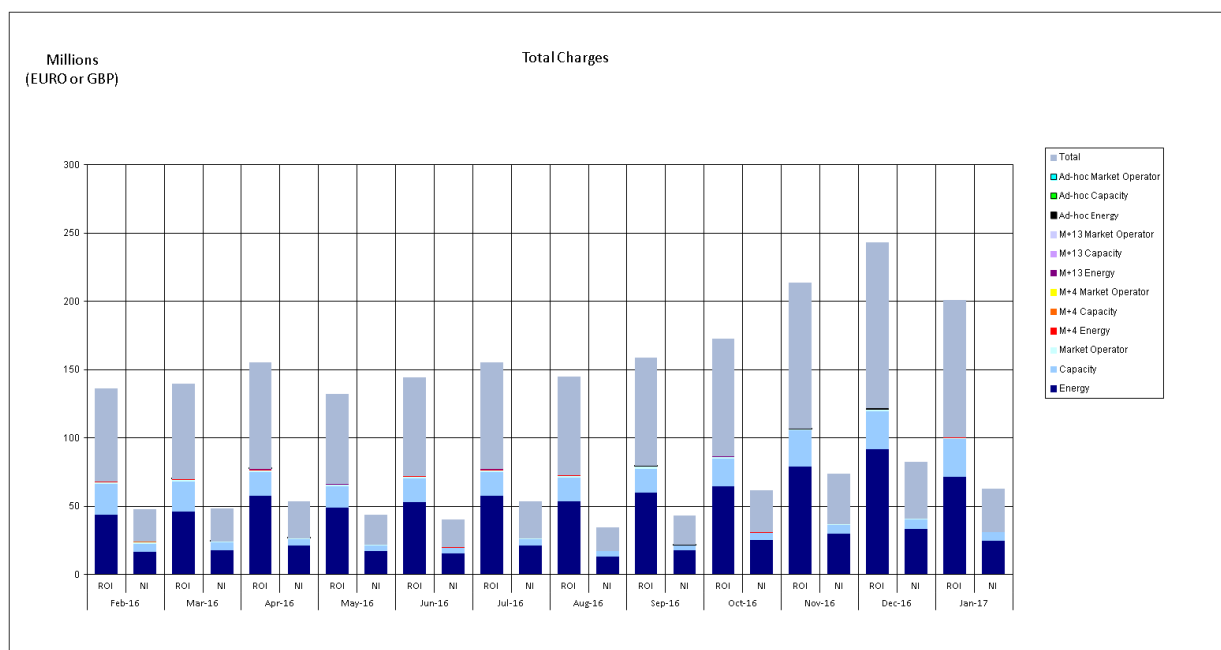


Figure 1 - Total Charges for Each Currency

Market	Jan 2017	
	ROI	NI
Energy	€71,678,886	£24,623,245
Capacity	€27,768,346	£6,418,062
Market Operator	€756,390	£203,136
M+4 Energy	€157,499	£105,611
M+4 Capacity	€96,027	£32,331
M+4 Market Operator	€2,213	£1,272
M+13 Energy	€63,104	£50,004
M+13 Capacity	€38,921	£12,723
M+13 Market Operator	€719	£166
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
Total	€100,562,104	£31,446,552

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

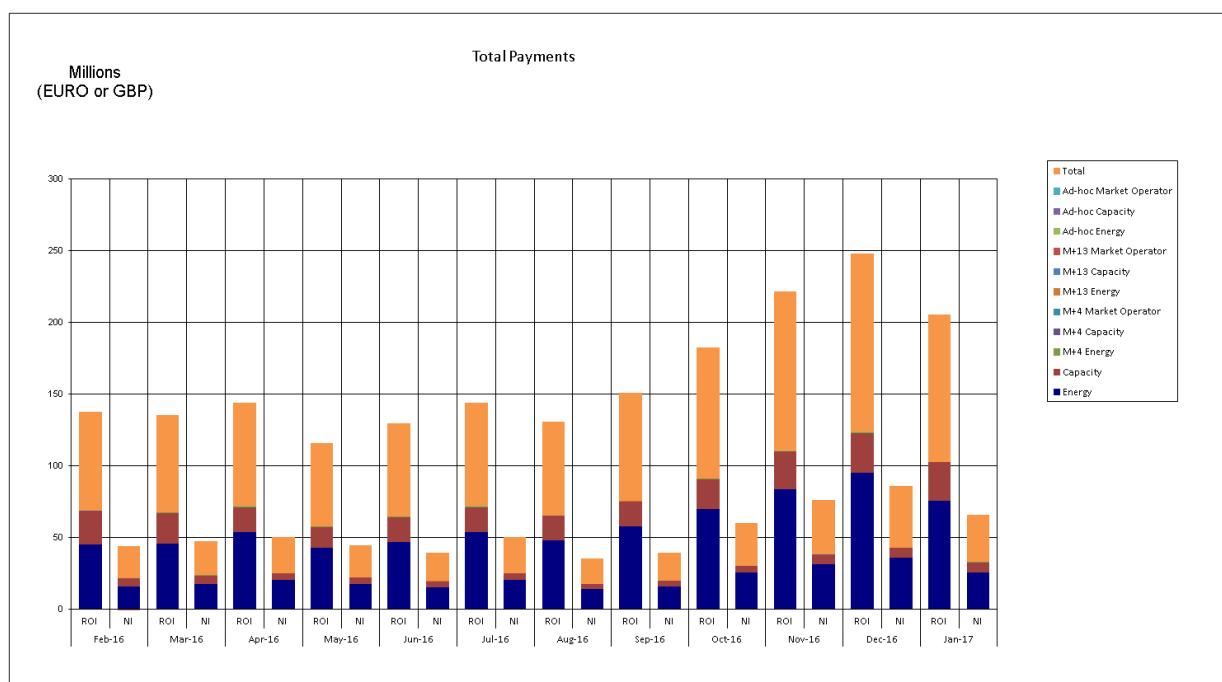


Figure 2 - Total Payments for Each Currency

Market	Jan 2017	
	ROI	NI
Energy	€75,626,839	£25,518,177
Capacity	€26,766,502	£7,218,838
M+4 Energy	€158,454	£105,159
M+4 Capacity	€90,015	£37,420
M+4 Market Operator	€2,221	£1,201
M+13 Energy	€57,511	£13,625
M+13 Capacity	€43,929	£8,406
M+13 Market Operator	€719	£166
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
Total	€102,746,189	£32,902,993

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.

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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:

Januray 2017	
Imbalance (Energy Only)	-€2,250,352.74

Table 4 - Balancing Costs for Energy Settlement

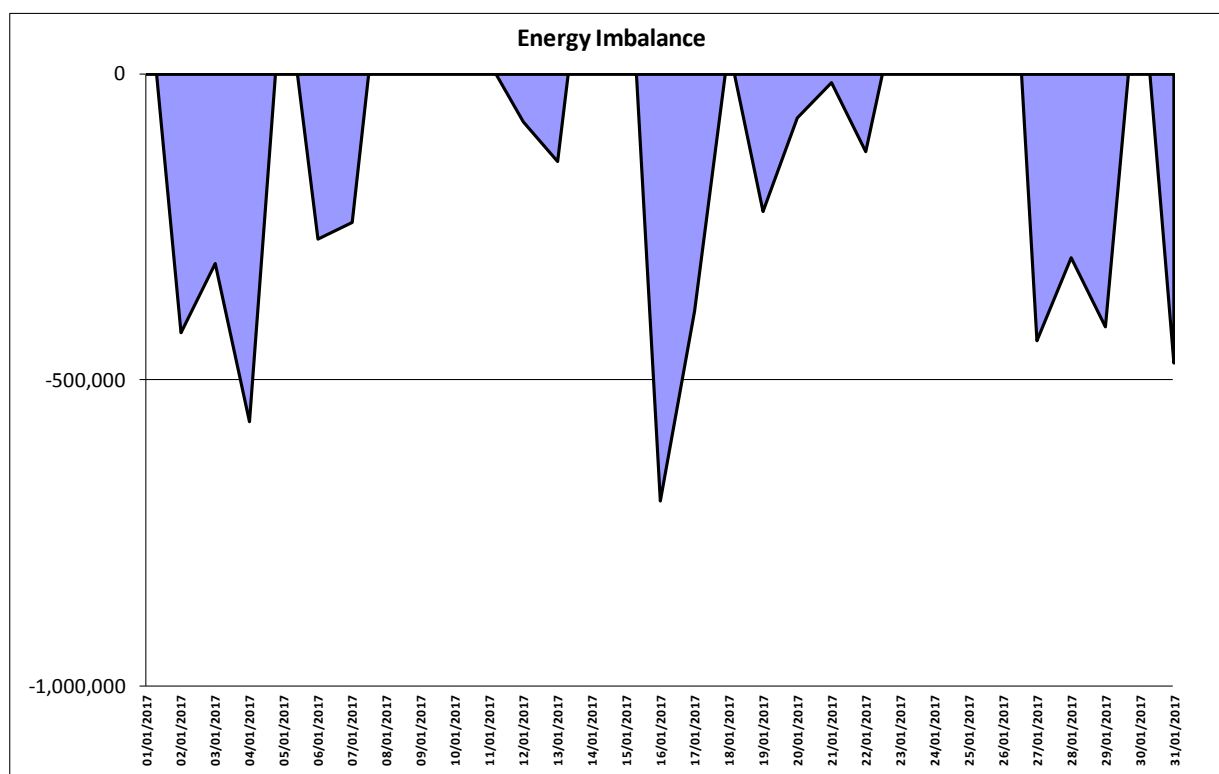


Figure 3 – Energy Imbalances

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, and Imperfections Charges combined with the weekly Make Whole Payments and Testing Charges.

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

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

In tables 5 and 6 below:

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

Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
06/01/2017	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

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:

January 2017	
Capacity Charges	-€52,869007.28
Capacity Payments	€52,868662.16
Balancing Costs	-345.12
VAT	€0

Table 6 - Balancing Costs for Capacity Settlement

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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
31/12/2016	06/01/2017	52	£6,563.93	£0	£6,563.93
07/01/2017	13/01/2017	1	£10,343.86	£0	£10,343.86
14/01/2017	20/01/2017	2	£61,109.65	£0	£61,109.65
21/01/2017	27/01/2017	3	£-65,505.55	£0	£-65,505.55

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 £61,109.65 and a cost of £-65,505.55. Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

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

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

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Date Of Invoice	Capacity Month	Currency Costs For Capacity Settlement
11/01/2017	December 2016	£96,518.15

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
€60,055,426.35	-€1,635,979.21	€620,200.67	-€24,375,833.83

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.

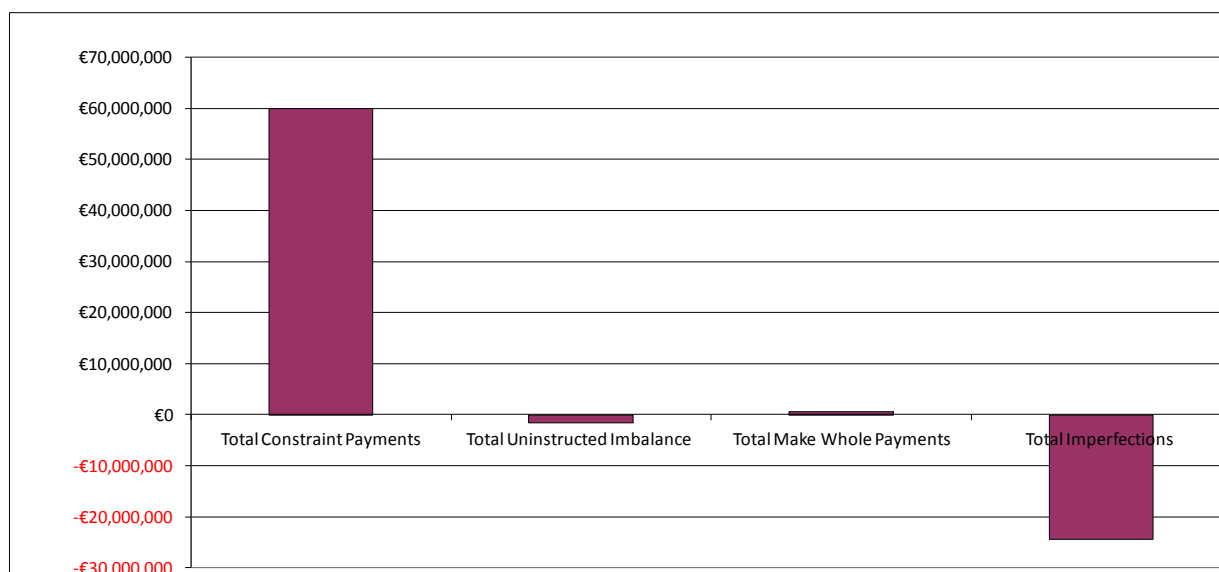


Figure 4 - Cumulative Imperfections Costs Vs Budget

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 September 2016 and M+13 resettlement period of December 2015 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

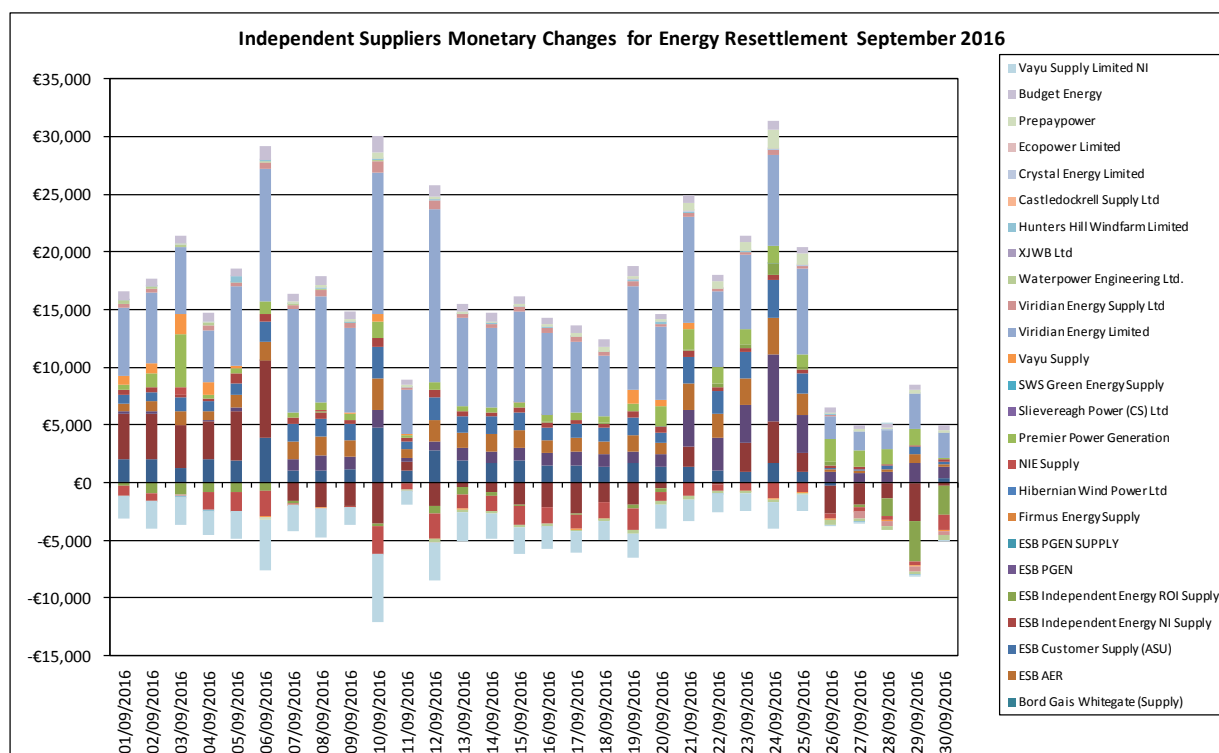


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – September 2016

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

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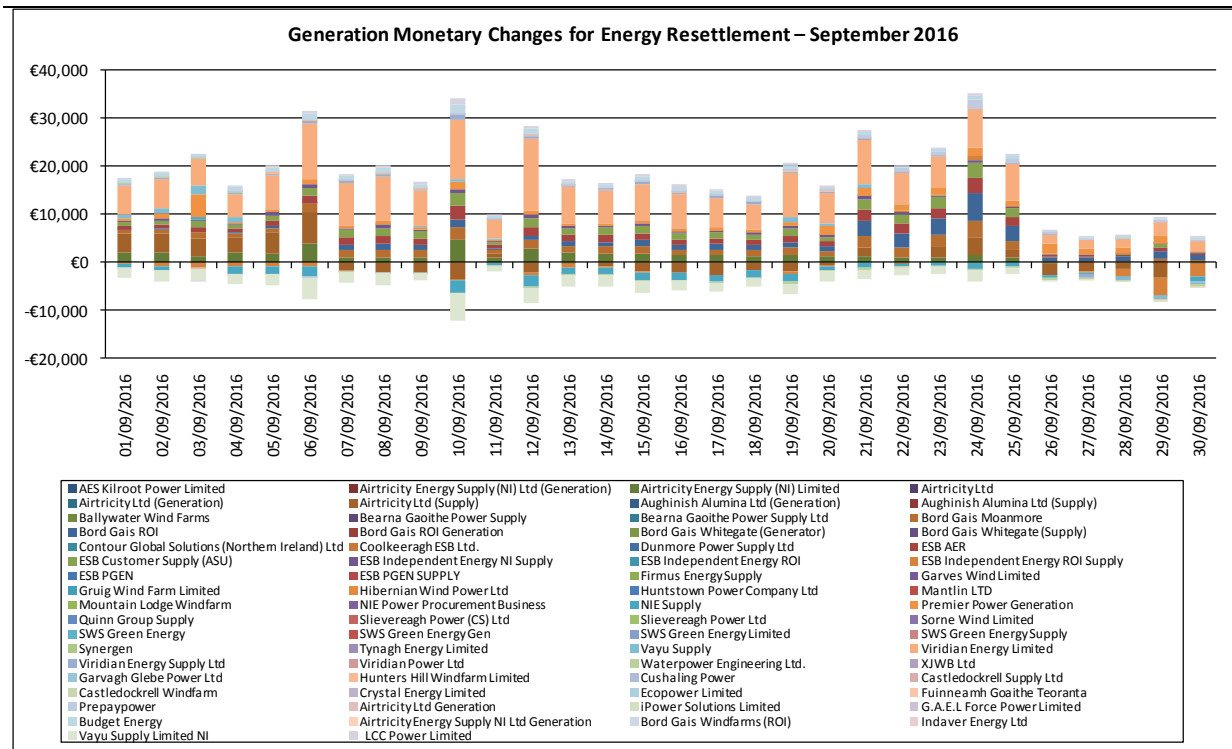


Figure 6 – Generation Monetary Changes for Energy Resettlement – September 2016

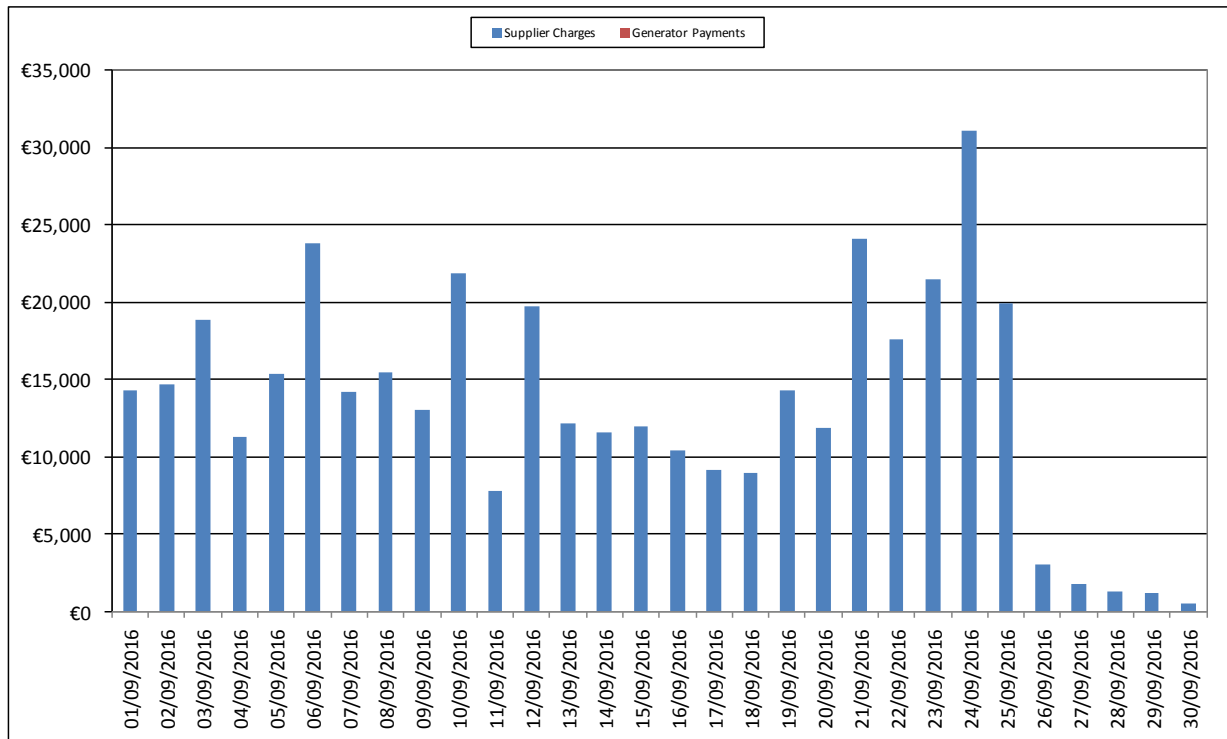


Figure 7 – Total Monetary Changes for Energy Resettlement – September 2016

M+13 Resettlement

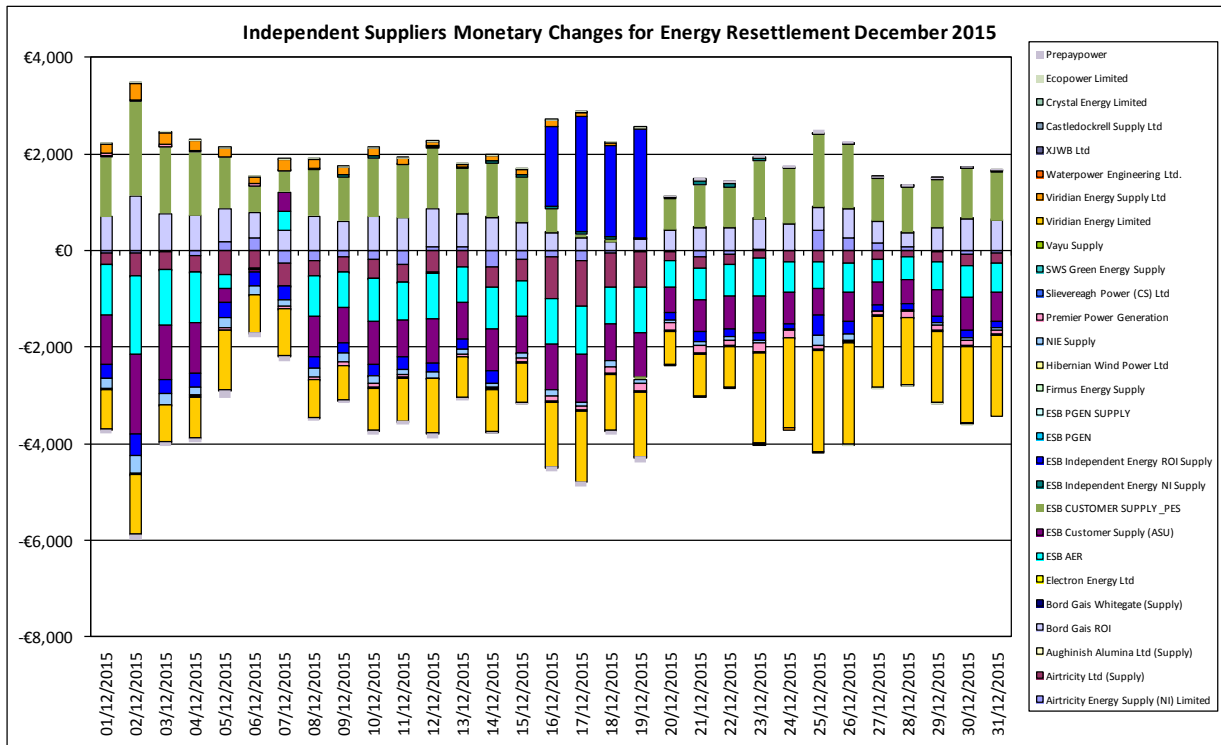


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – December 2015

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

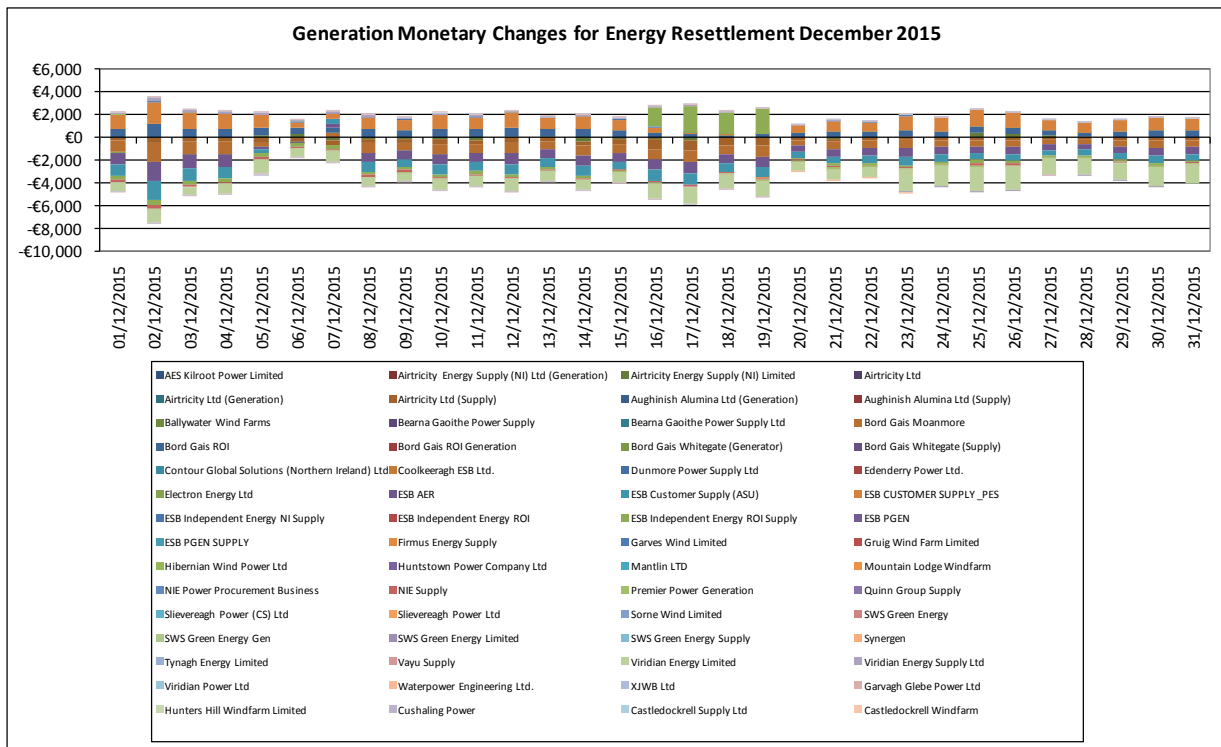


Figure 9 - Generation Monetary Changes for Energy Resettlement – December 2015

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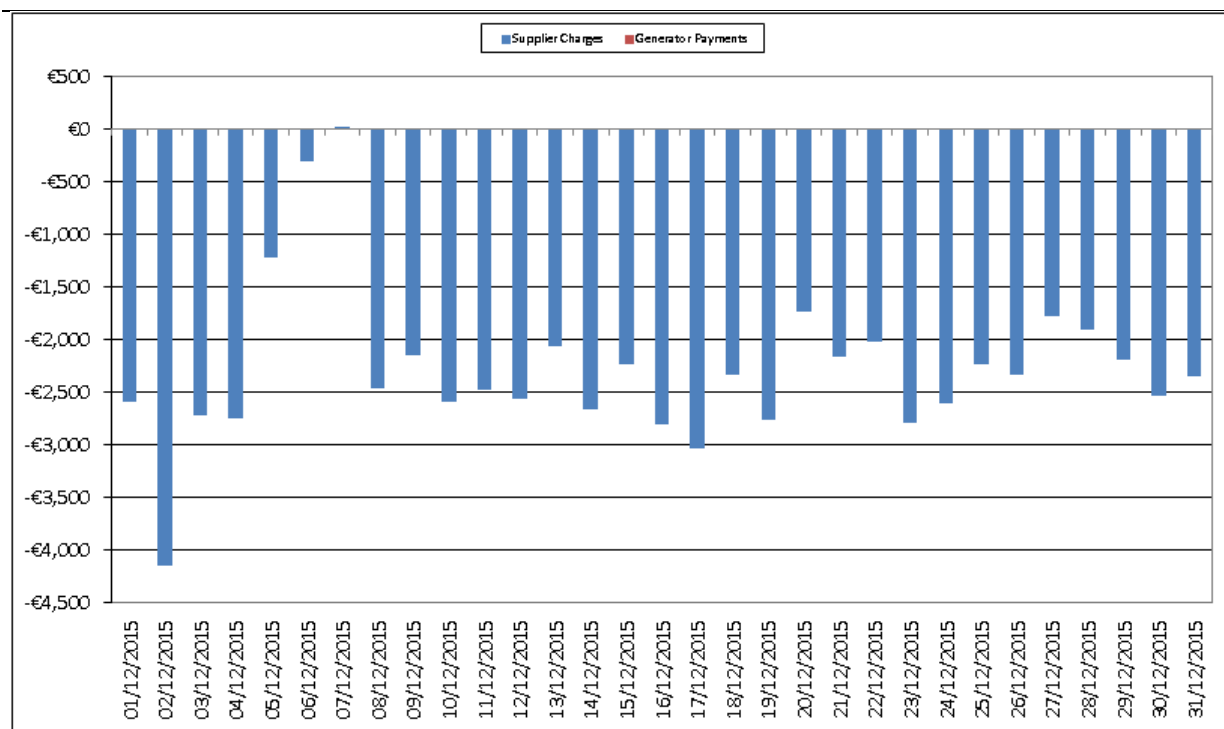


Figure 10 - Total Monetary Changes for Energy Resettlement – December 2015

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.

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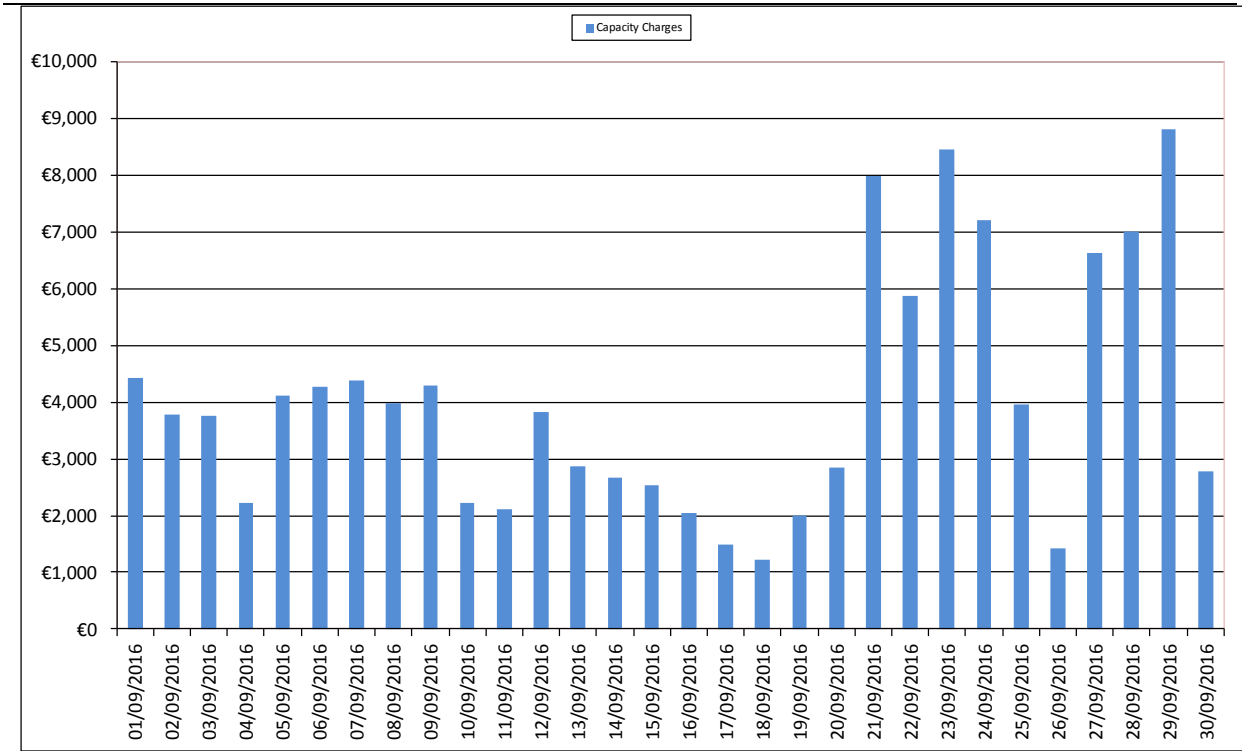


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – September 2016

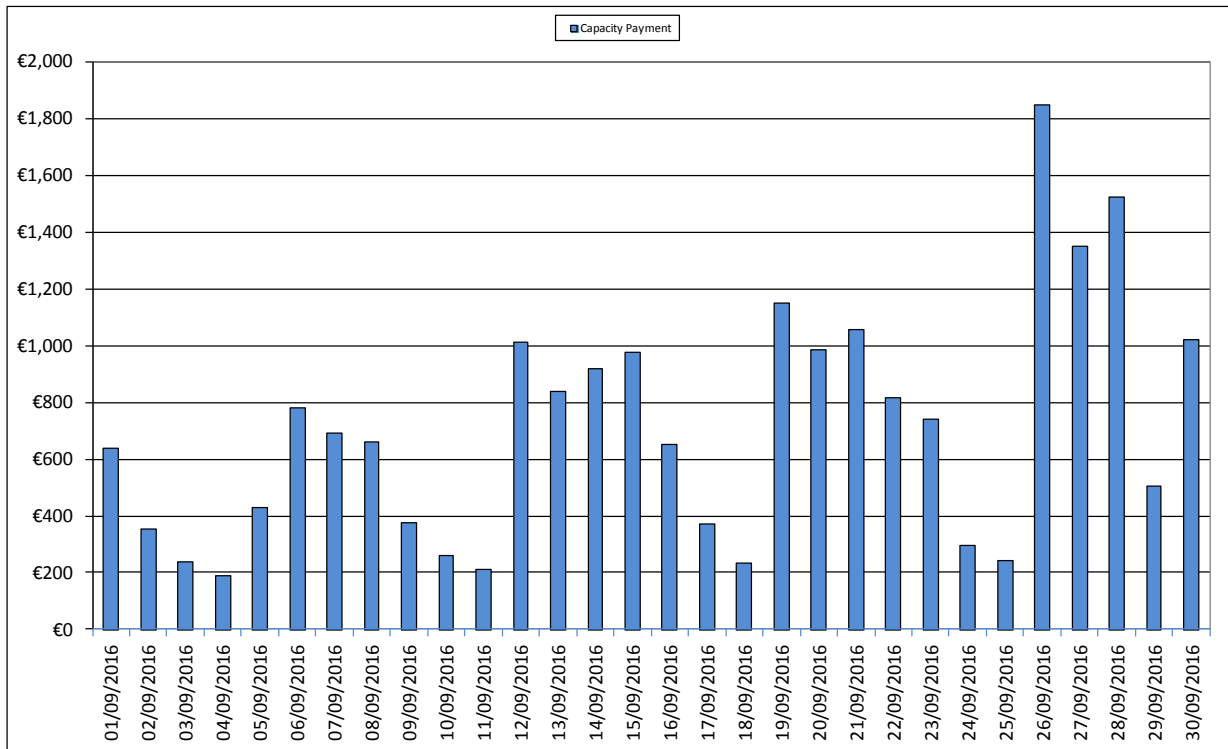


Figure 12 - All Generation Monetary Change for Capacity Resettlement – September 2016

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

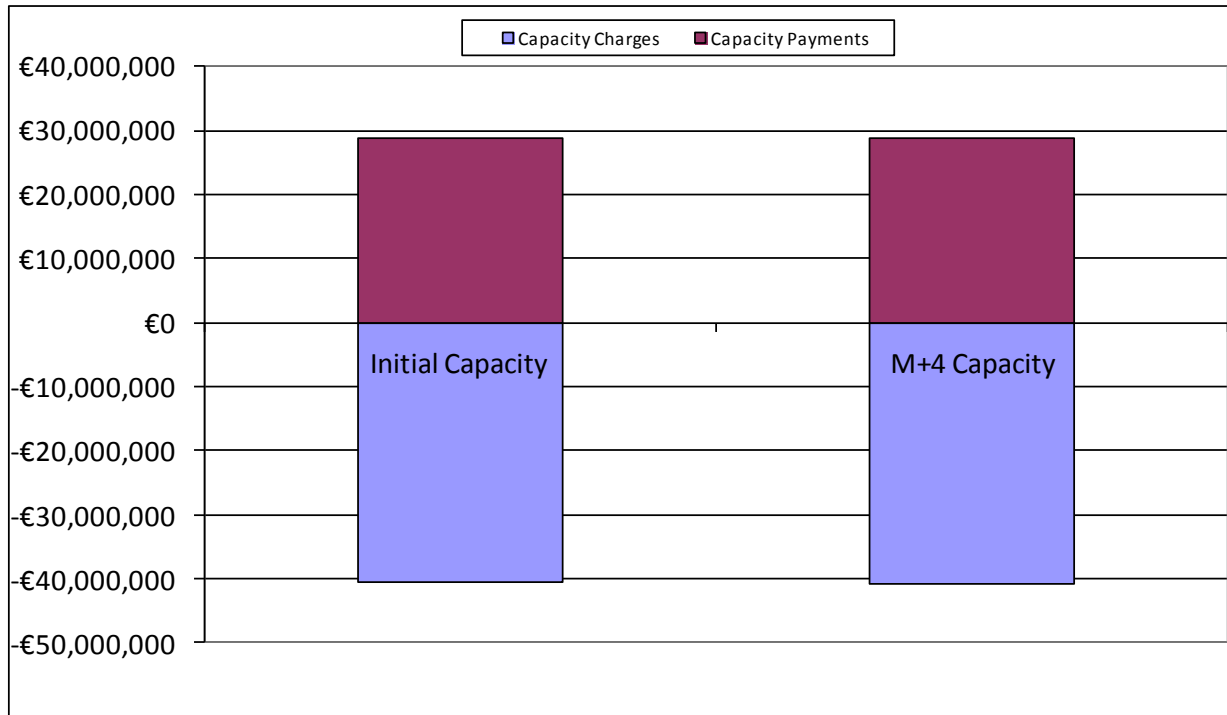


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement September 2016

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

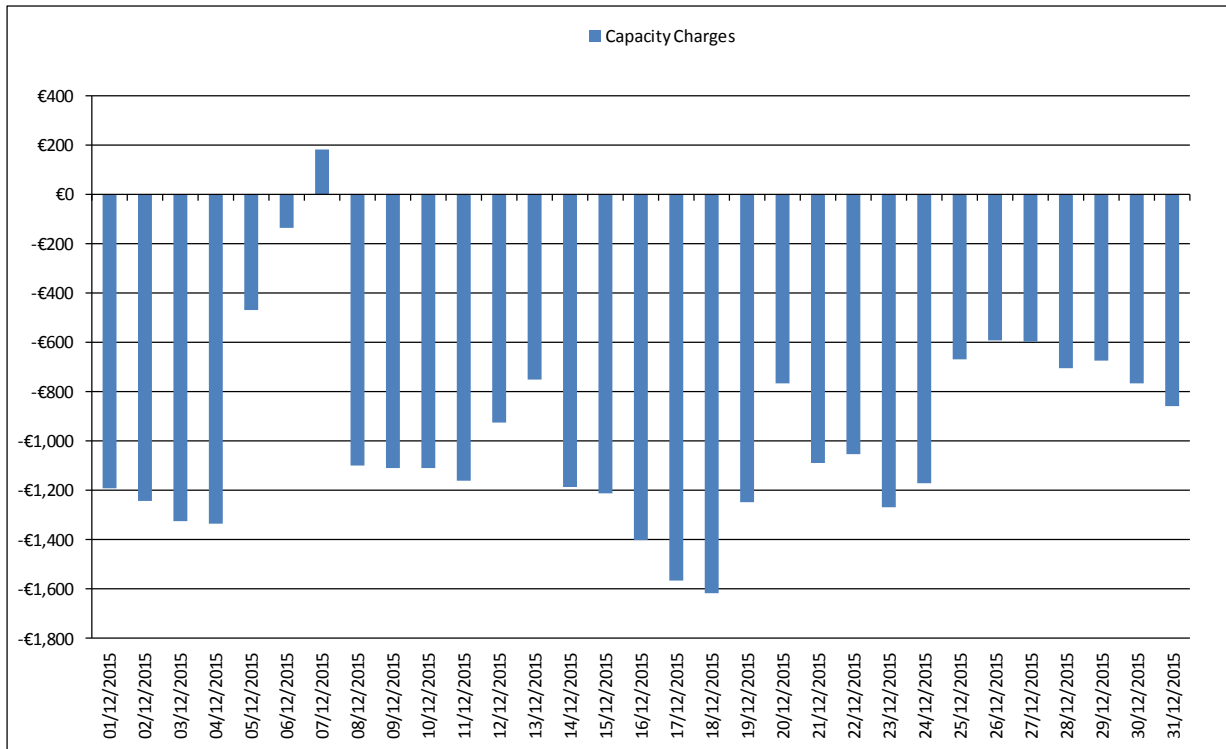


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – December 2015

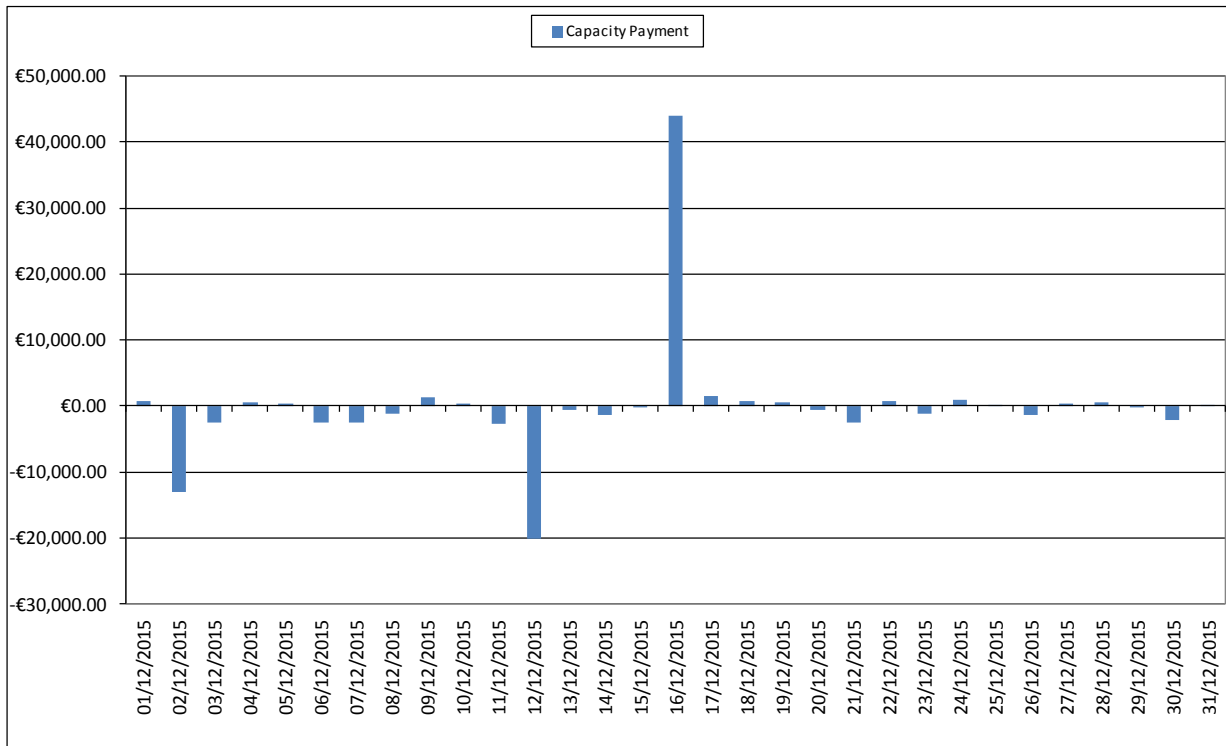


Figure 15 – All Generation Monetary Change for Capacity Resettlement – December 2015

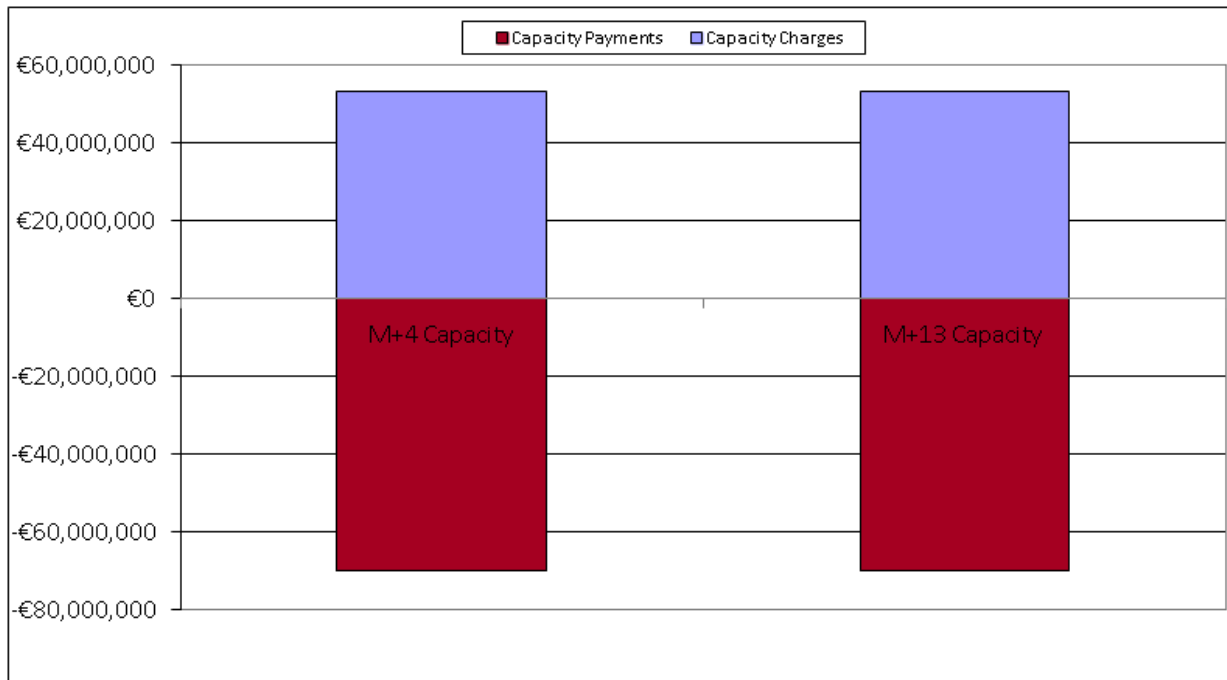


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – December 2015

The above graph demonstrates despite 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.

Helpdesk Call Statistics

The statistics presented in Table 10 - Helpdesk Call Statistics covers the month of December 2016.

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

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	215	185	30	200	0.93	193
Important	2	1	1	1	0.03	1
Urgent	1	0	1	0	0.00	0
Settlement	4	2	2	3	4.25	3
Credit	0	0	0	0	0.00	0
Dispute	1	0	1	0	0.00	0
Data	0	0	0	0	0.00	0
Total/Average	223	188	35	204	1.04	197

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of January 2017.
- Resolved in the Period refers to queries resolved within January 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 January 2017.
- Not Resolved refers to queries raised but not resolved within January 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 decreased by 0.4 working days from 1.25 in December 2016 to 0.85 working days in January 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 January 2017 with regard to formal Settlement Queries.

Disputes and Queries

5.1.1 Disputes

One Dispute was raised during the month of January 2017.

Topic	Number Of Queries
Firm Access Quantity	1

Table 11a - Disputes by Topic

5.1.2 Data Queries

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

5.1.3 Settlement Queries

There were Four formal Settlement queries raised in January 2017. Two queries were upheld and have since been resolved.

Topic	Number Of Queries
Dispatch Instructions	1
Meter Generation	1

Table 11b - Upheld Settlement Queries by Topic

- One query relating to incorrect Dispatch Instructions raised. This was deemed to be of Low Materiality and will be corrected within M+4.
- One query relating to incorrect Metered Generation raised. This was deemed to be of Low Materiality and will be corrected within M+13 resettlement.

Unresolved Queries

There are no unresolved settlement queries as of the 15th February 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, 75.01% of data used was submitted by Participants through the normal Bid-Offer process. 24.99% 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 no Re-Price runs carried out in January 2017.

There were no Ad hoc Re-Settlement run carried out in January 2017.

There were no MIUN Delay for Within Day 1 in January 2017

6.3.2 System Errors

There were no Market Application defects found in January 2017.

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

6.4 Operational Timings

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

There are five run types for MSP software,

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

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The following tables and graphs provide details for the postings of the MSP for January 2016.

1.4.1 MSP Postings January 2016

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

Table 12 - Operational Timings

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

Table 13 - Operational Timings (% on time)

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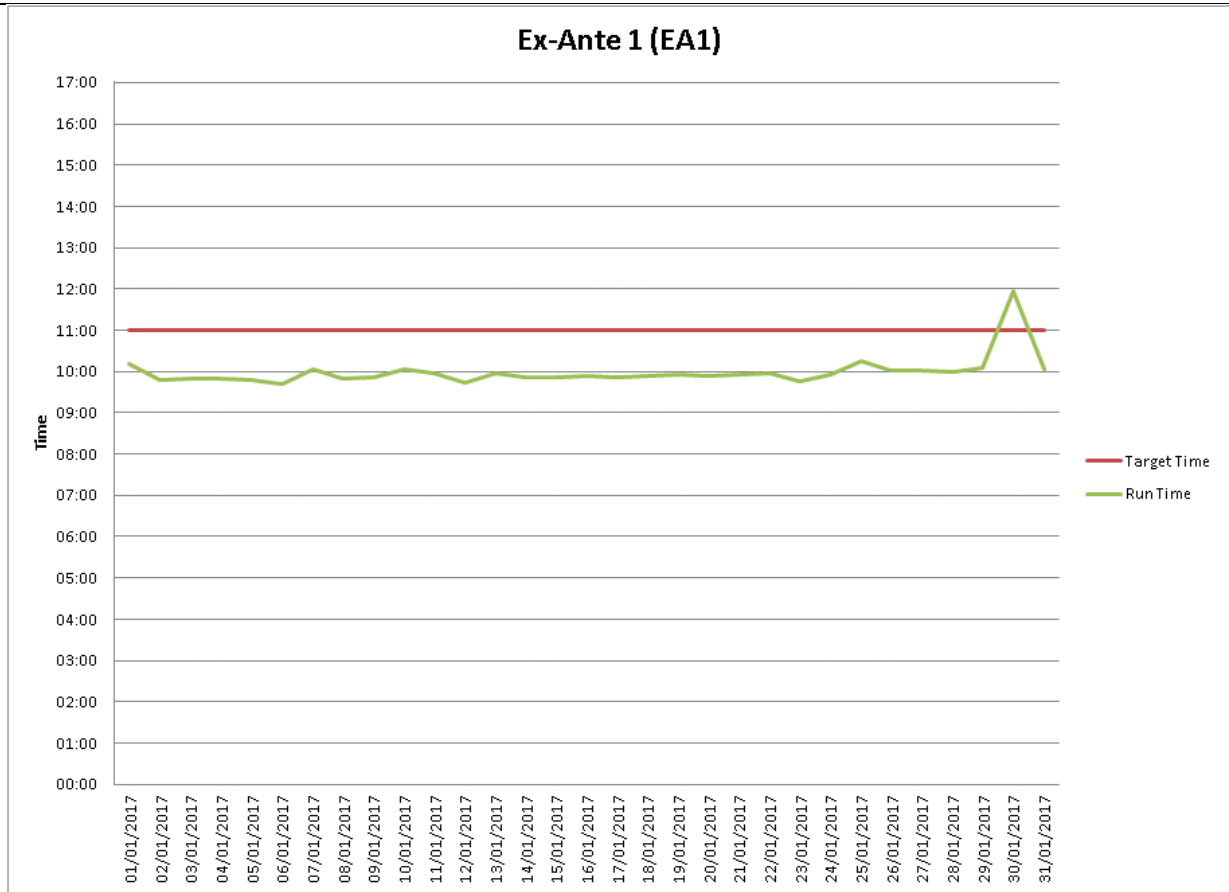


Figure 17 – Ex-Ante 1

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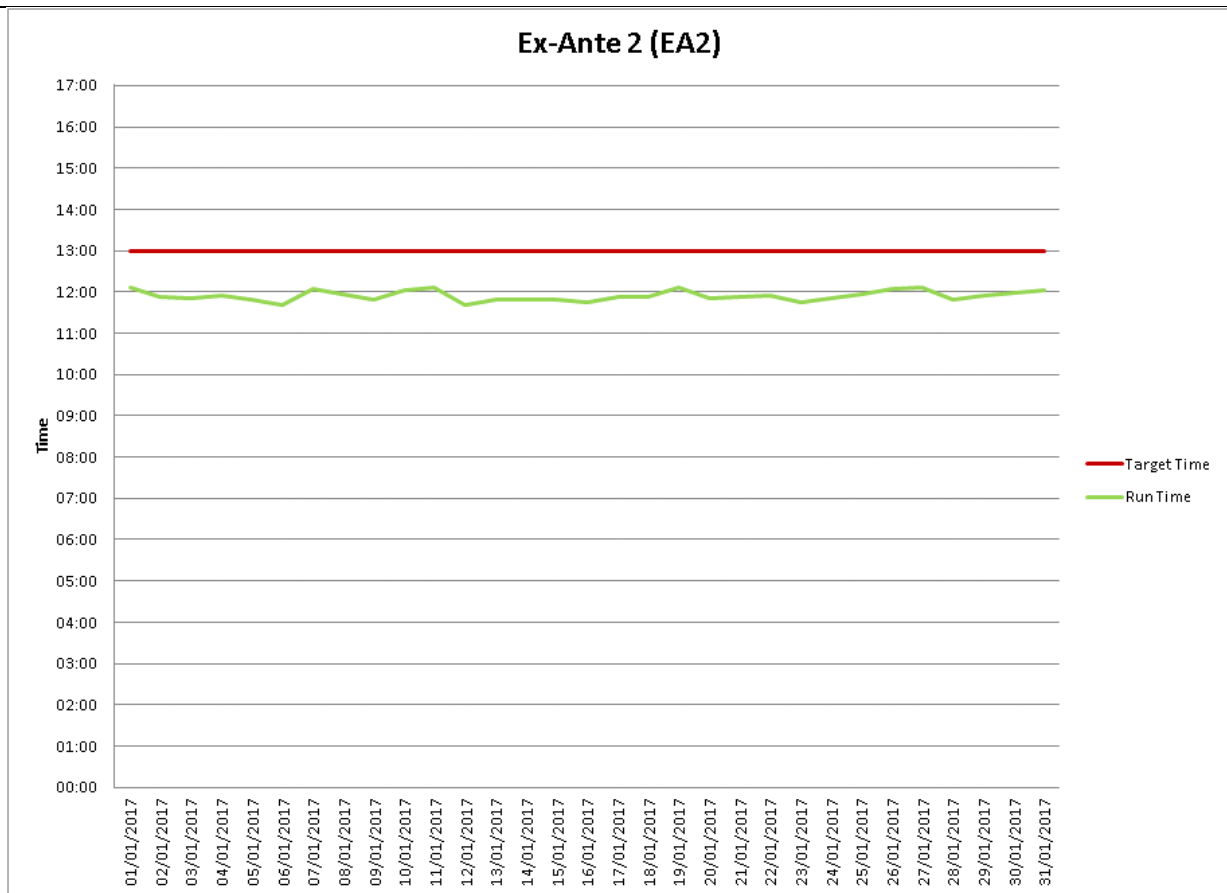


Figure 18 – Ex-Ante 2

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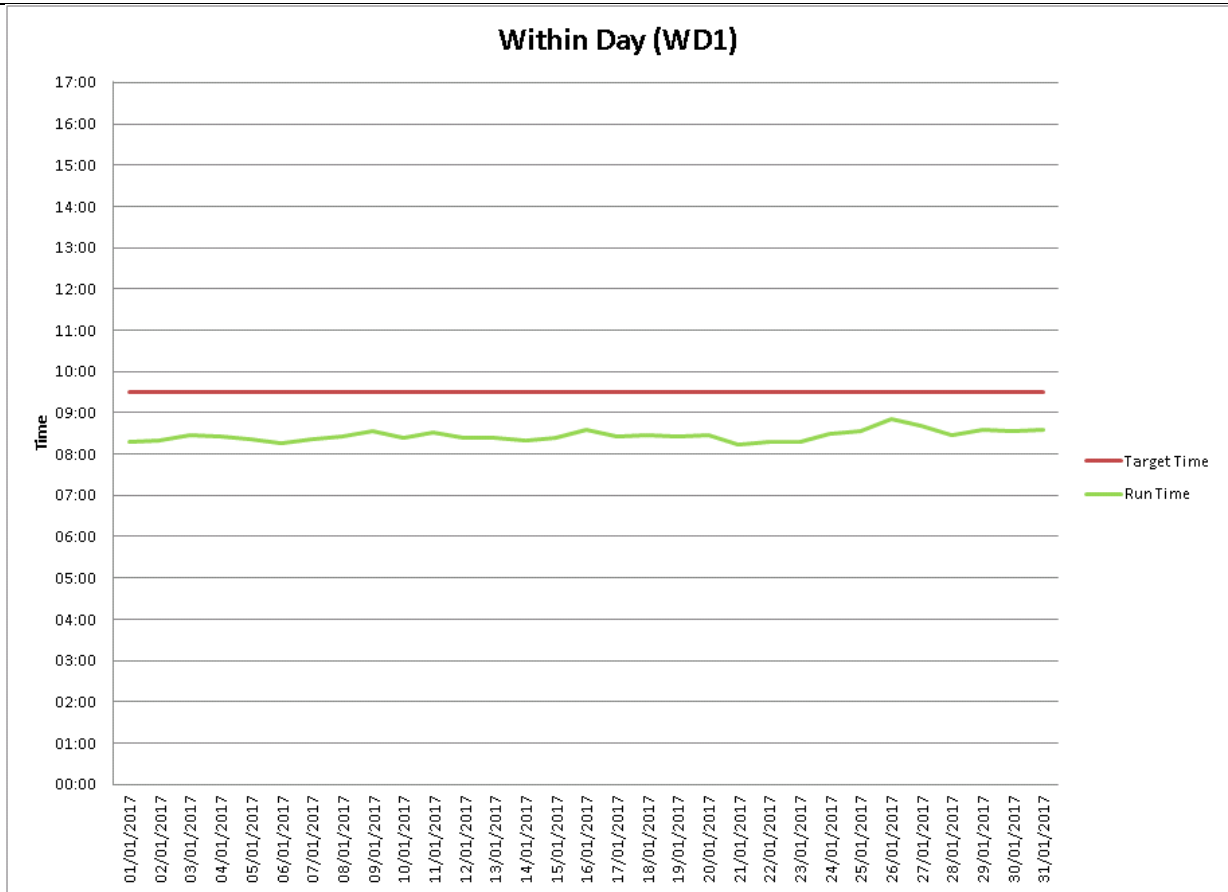


Figure 19 – Within Day 1

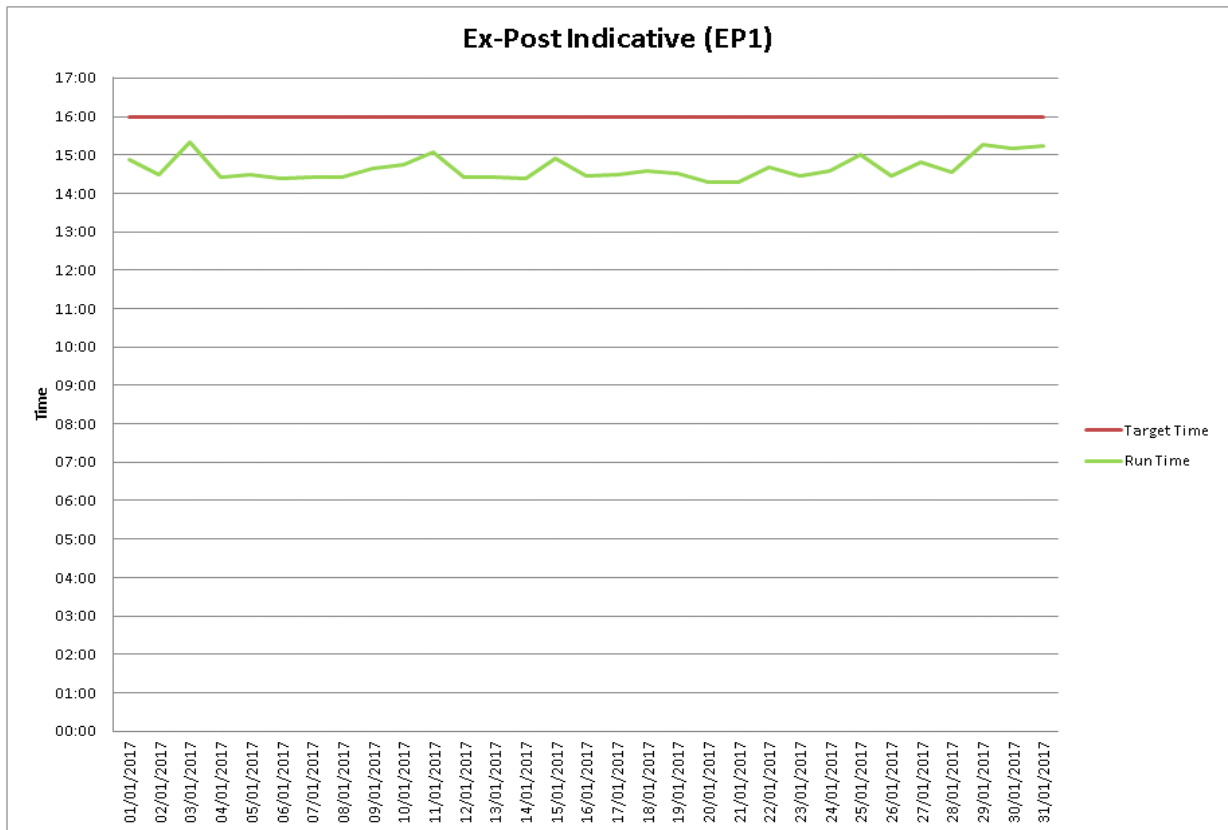


Figure 20 - Ex-Post Indicative

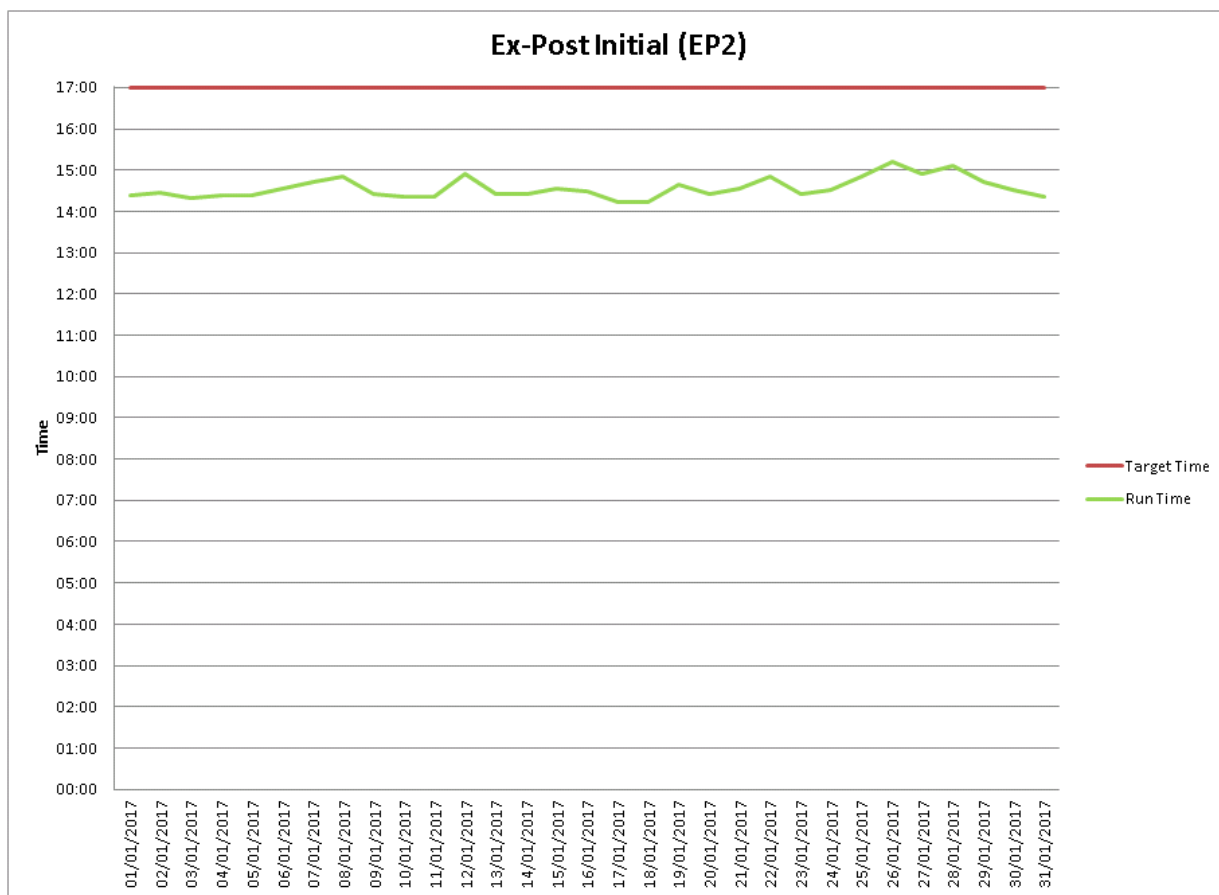


Figure 21 - Ex-Post Initial

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 may be selected for publishing. An updated policy document on the use of MIP has been published and is available on the SEMO website [here](#).

In January 2017, there were 12 instances of publishing with the MIP solver.

A detail of historical runs and dates where the MIP algorithm has been used for published results is provided in [Appendix I](#).

1.4.1 Settlement Postings January 2017

The publication timings for Settlement runs are provided below.

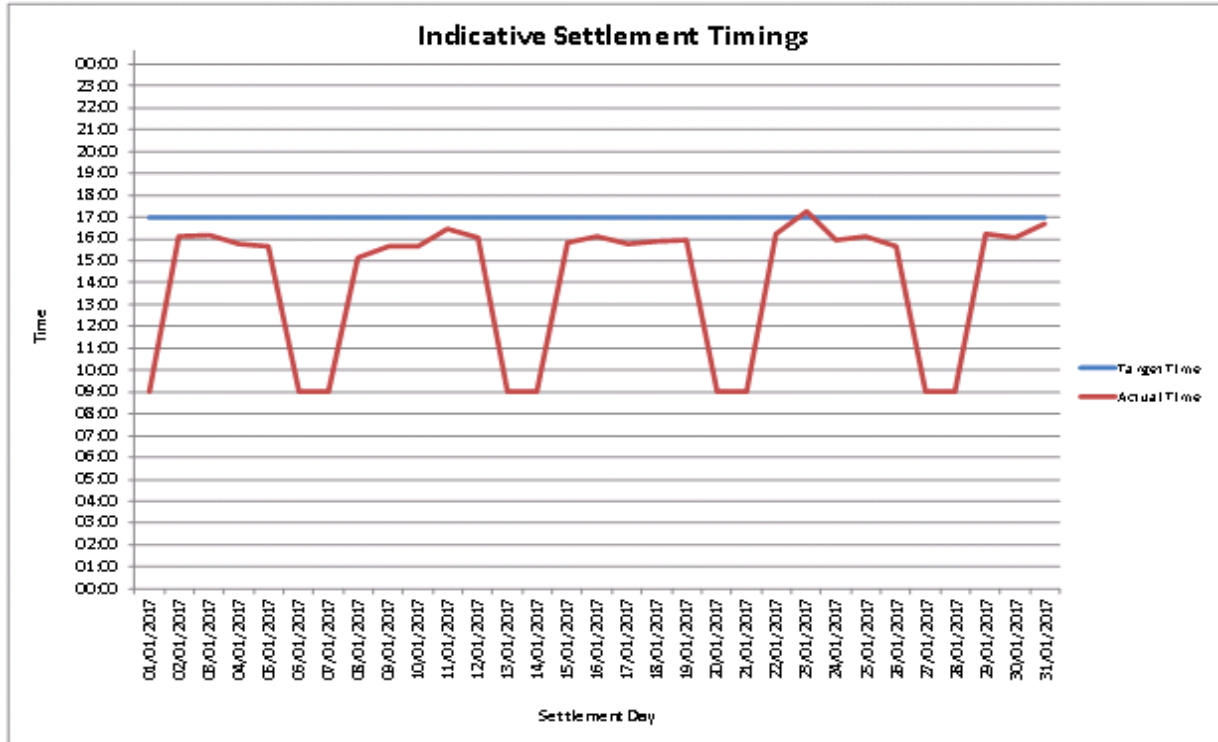


Figure 22 - Indicative Settlement Postings

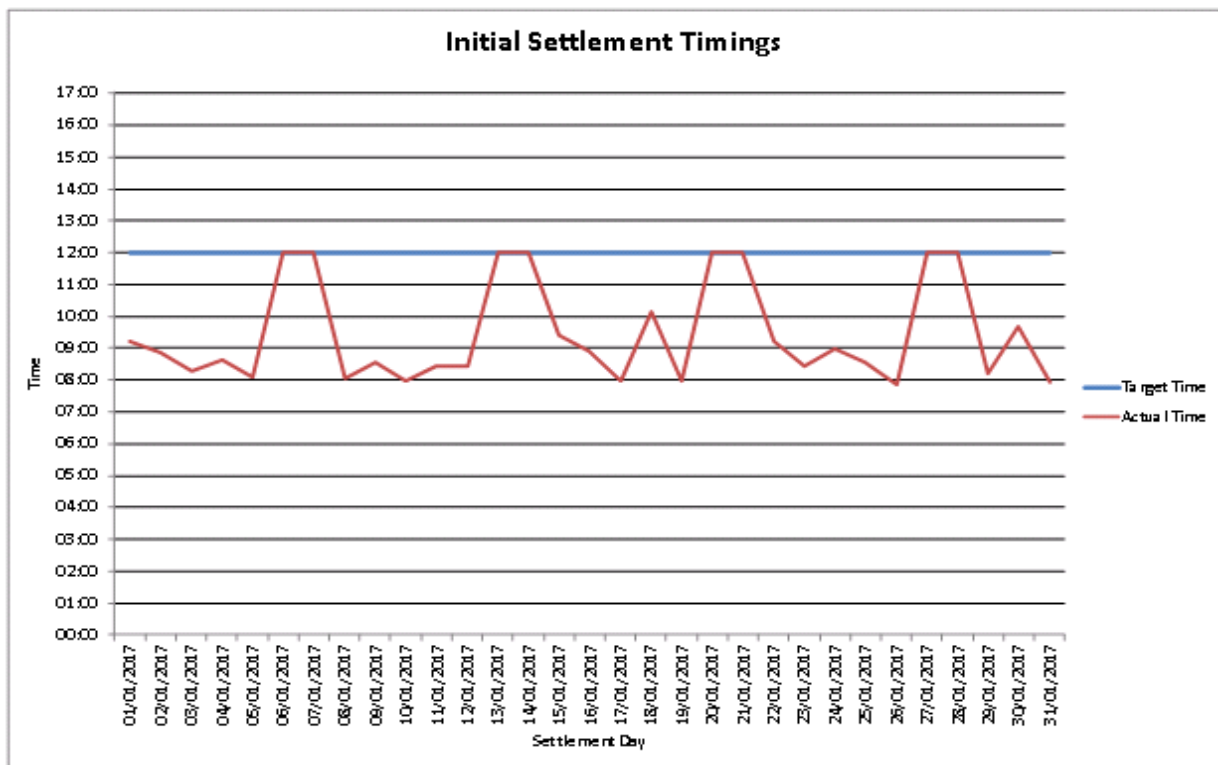


Figure 23 - Initial Settlement Postings

Further details of any delays noted above are provided in Appendix A

6.5.1 – No deployments in January 2017

Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

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

7.3 Communications or Systems Failures

There were no Communications Failures in January 2017

7.4 Denial of Service Attacks

There was no Denial of Service Attacks during January 2017.

7.5 Submission of Parameters to RAs for Approval

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

Appendix A: Detail of Trading and Settlement Code Breaches

Data Provider

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
29/01/2017	EA2	Timing	EirGrid MDP	Operational	Ex-Ante 2 (EA2) Market Schedule for Trading Day 30/01/2017 was cancelled.	Ex-Ante 1 (EA1) Market Schedule was not published by 11:00.	EA2 Market Schedule was cancelled in the Market Systems	Major
29/01/2017	EA1	Timing	EirGrid MDP	File Submission	There was a delay to the publication of the Ex-Ante 1 (EA1) Market Schedule for Trading Day 30/01/2017 .	The EirGrid Wind Forecast file was not received by gate window closure.	The EA1 Market Schedule was published at 11:54 on 29/01/2017	Minor

Table 14 – 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
03/01/2017	Money In	Timing	Participant	Payment Default	New Measured Power Limited TA Pinery (PT_400173) defaulted on an Energy Week 50 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on an Energy Week 50 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Electricity Exchange Limited (PT_400116) defaulted on a Capacity August 2016 M+4 and a Capacity November 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Axpo Trading AG (PT_400164) defaulted on a Capacity August 2016 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Shell Energy Europe Ltd. (PT_500087) defaulted on a Capacity November 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Open Electric (PT_500082) defaulted on a Week 50 2016 Initial Energy Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Open Electric (PT_500082) defaulted on an August 2016 M+4 Capacity Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Shell Energy Europe Ltd (PT_500087) defaulted on a Capacity November 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on an Energy Week 50 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Electricity Exchange Limited (PT_400116) defaulted on a Capacity August 2016 M+4 and a Capacity November 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	Money In	Timing	Participant	Payment Default	Axpo Trading AG (PT_400164) defaulted on a Capacity August 2016 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
03/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 03/01/2017.	CCIN was not resolved within the T&SC timeframes	CCIN is open and not resolved.	Major
04/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 04/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
05/01/2017	Money In	Timing	Participant	Payment Default	Open Electric (PT_500082) defaulted on a Week 51 2016 Initial Energy Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/01/2017	Money In	Timing	Participant	Payment Default	Arden Energy(PT_400149) defaulted on a Week 51 2016 Initial Energy Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 50 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 51 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/01/2017	Money In	Timing	Participant	Payment Default	Arden Energy Limited (PT_400149) defaulted on an Energy Week 51 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 05/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
06/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 06/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
09/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 51 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
09/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 09/01/2017.	CCIN was not resolved within the T&SC timeframes	CCIN is open and not resolved.	Major
10/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 10/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
11/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 52 2016 Initial Invoice, Energy Week 36 2016 M+4 Invoice and an Energy Week 49 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
11/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 11/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
12/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 12/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
13/01/2017	Money In	Timing	Participant	Payment Default	Erova Energy Limited (PT_500083) defaulted on a FMOC December 2016 Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
13/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 36 2016 M+4 Invoice and a VMOC Week 49 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
13/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a FMOC December 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
13/01/2017	Money In	Timing	Participant	Payment Default	Quinn Windfarm Limited (PT_400049) defaulted on a FMOC December 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
13/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 13/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
16/01/2017	Money In	Timing	Participant	Payment Default	Arden Energy Limited (PT_400149) defaulted on a Capacity December 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
16/01/2017	Money In	Timing	Participant	Payment Default	Indaver Energy Ltd. (PT_400088) defaulted on a Capacity December 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
16/01/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on a Capacity December 2016 Initial.	Participant Error.	A default letter was issued to the Participant.	Major

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Date	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
16/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Capacity December 2016 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
16/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 16/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
17/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 17/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
18/01/2017	Money In	Timing	Participant	Payment Default	Castledockrell Wind Group Ltd. (PT_400082) defaulted on a Week 37 2016 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 1 2017 Initial Invoice, Energy Week 37 2016 M+4 Invoice and an Energy Week 50 2015 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 18/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
19/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 19/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
20/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 37 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
20/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 20/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
23/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 23/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
24/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 24/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
25/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 38 2016 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
25/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 25/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
26/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 26/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
27/01/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 38 2016 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
27/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 27/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
30/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 30/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major
31/01/2017	CRM	Timing	Participant	Credit	Open Electric (CP_500082) defaulted on a CCIN issued on 31/01/2017.	CCIN was not resolved within the T&SC timeframes.	CCIN is open and not resolved.	Major

Table 15 – Trading and Settlement Code Breaches – Market Participants

SEMO - Pricing and Scheduling

There were no issues to report in January 2017.

SEMO – Settlements

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
24/01/2017	Indicative Statements and PIRs	Timing	SEMO	Operational	Due to an operational error Indicative Settlement Statements and PIRs for 23/01/2017 were published after the 17:00 deadline on 24/01/2017.	The Indicative processing batch was initiated later than the required start time causing the publication of the Statements and Reports to be delayed.	A market message and an email alert were issued advising participants that Indicative Settlement Statements and PIRs for 23/01/2017 would be delayed. All Statements and Reports were published at 17:16 on 24/01/2017 and a market message update and an additional email alert were issued advising that the indicative publications were now available.	Minor

Table 16 – Trading and Settlement Code Breaches – Settlements

SEMO - Funds Transfer

There were no issues to report in January 2017.

SEMO - Credit Management

There were no issues to report in January 2017.

SEMO – Other

There were no issues to report in January 2017.

Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Dispatch Instructions	There is a variance between initial PIR data published by the market and our corresponding HNC data during testing on the 14th and 15th of December. 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 these periods. The variance is from 00:00 on the 14th through to 01:00 on the 15th.	PT_400035	2017-01-12	2017-01-30	Settlement
PUGDOG	GU_500040 – Uninstructed imbalance query (UNIMP). ESB calculations do not agree with the M.O. calcs for UNIMP for 23.12.2016. I have attached our calculations for Reference. You will notice that our calcs agree with over generation within tolerance but not the remaining Categories.	PT_500024	2017-01-26	2017-01-27	Settlement
Settlement Payments/ Charges	GU_400210 (ER1) and GU_400211 (ER2). Under the Uninstructed Imbalances Parameters for above units the MV tolerance is 1mw. Both units on the 19th January were within this tolerance but still incurred high U.I.'s, please see attached. Please explain why high U.I.'s were incurred.	PT_400030	2017-01-30	2017-01-30	Settlement
Meter Generation	The meter data submitted to SEM M+4 for Empower AGU (GU_501230) for 12/01/2016 was wrongly submitted with zeroes for the periods Hour 9 interval 2 until hour 17 interval 2 inclusive. Updated meter data is available and should be used for M+13 settlement. Please review and I can resubmit when requested. □	TSO_SONI	2017-01-31	2017-02-06	Settlement

Table 17 - Formal Queries

9. 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 December 2016.

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

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

Table 19 – MSP Runs

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Settlement Runs

Indicative				Initial			
Trading Day	Actual Date	Target Time	Actual Time	Trading Day	Actual Date	Target Time	Actual Time
01/01/2017	03/01/2017	17:00	07:50	01/01/2017	06/01/2017	12:00	09:13
02/01/2017	03/01/2017	17:00	16:06	02/01/2017	09/01/2017	12:00	08:52
03/01/2017	04/01/2017	17:00	16:11	03/01/2017	10/01/2017	12:00	08:16
04/01/2017	05/01/2017	17:00	15:48	04/01/2017	11/01/2017	12:00	08:37
05/01/2017	06/01/2017	17:00	15:40	05/01/2017	12/01/2017	12:00	08:06
06/01/2017	09/01/2017	17:00	11:13	06/01/2017	13/01/2017	12:00	12:00
07/01/2017	09/01/2017	17:00	11:52	07/01/2017	13/01/2017	12:00	12:00
08/01/2017	09/01/2017	17:00	15:10	08/01/2017	13/01/2017	12:00	08:03
09/01/2017	10/01/2017	17:00	15:39	09/01/2017	16/01/2017	12:00	08:33
10/01/2017	11/01/2017	17:00	15:38	10/01/2017	17/01/2017	12:00	07:58
11/01/2017	12/01/2017	17:00	16:27	11/01/2017	18/01/2017	12:00	08:25
12/01/2017	13/01/2017	17:00	16:03	12/01/2017	19/01/2017	12:00	08:26
13/01/2017	16/01/2017	17:00	11:37	13/01/2017	20/01/2017	12:00	12:00
14/01/2017	16/01/2017	17:00	12:57	14/01/2017	20/01/2017	12:00	12:00
15/01/2017	16/01/2017	17:00	15:51	15/01/2017	20/01/2017	12:00	09:25
16/01/2017	17/01/2017	17:00	16:08	16/01/2017	23/01/2017	12:00	08:55
17/01/2017	18/01/2017	17:00	15:48	17/01/2017	24/01/2017	12:00	07:57
18/01/2017	19/01/2017	17:00	15:54	18/01/2017	25/01/2017	12:00	10:08
19/01/2017	20/01/2017	17:00	15:57	19/01/2017	26/01/2017	12:00	07:59
20/01/2017	23/01/2017	17:00	11:30	20/01/2017	27/01/2017	12:00	12:00
21/01/2017	23/01/2017	17:00	12:37	21/01/2017	27/01/2017	12:00	12:00
22/01/2017	23/01/2017	17:00	16:13	22/01/2017	27/01/2017	12:00	09:13
23/01/2017	24/01/2017	17:00	17:17	23/01/2017	30/01/2017	12:00	08:27
24/01/2017	25/01/2017	17:00	15:57	24/01/2017	31/01/2017	12:00	08:59
25/01/2017	26/01/2017	17:00	16:08	25/01/2017	01/02/2017	12:00	08:32
26/01/2017	27/01/2017	17:00	15:40	26/01/2017	02/02/2017	12:00	07:51
27/01/2017	30/01/2017	17:00	12:22	27/01/2017	03/02/2017	12:00	12:00
28/01/2017	30/01/2017	17:00	13:25	28/01/2017	03/02/2017	12:00	12:00
29/01/2017	30/01/2017	17:00	16:14	29/01/2017	03/02/2017	12:00	08:11
30/01/2017	31/01/2017	17:00	16:05	30/01/2017	06/02/2017	12:00	09:40
31/01/2017	01/02/2017	17:00	16:40	31/01/2017	07/02/2017	12:00	07:55

Table 20 – 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
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

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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
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
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

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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
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

Table 21 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

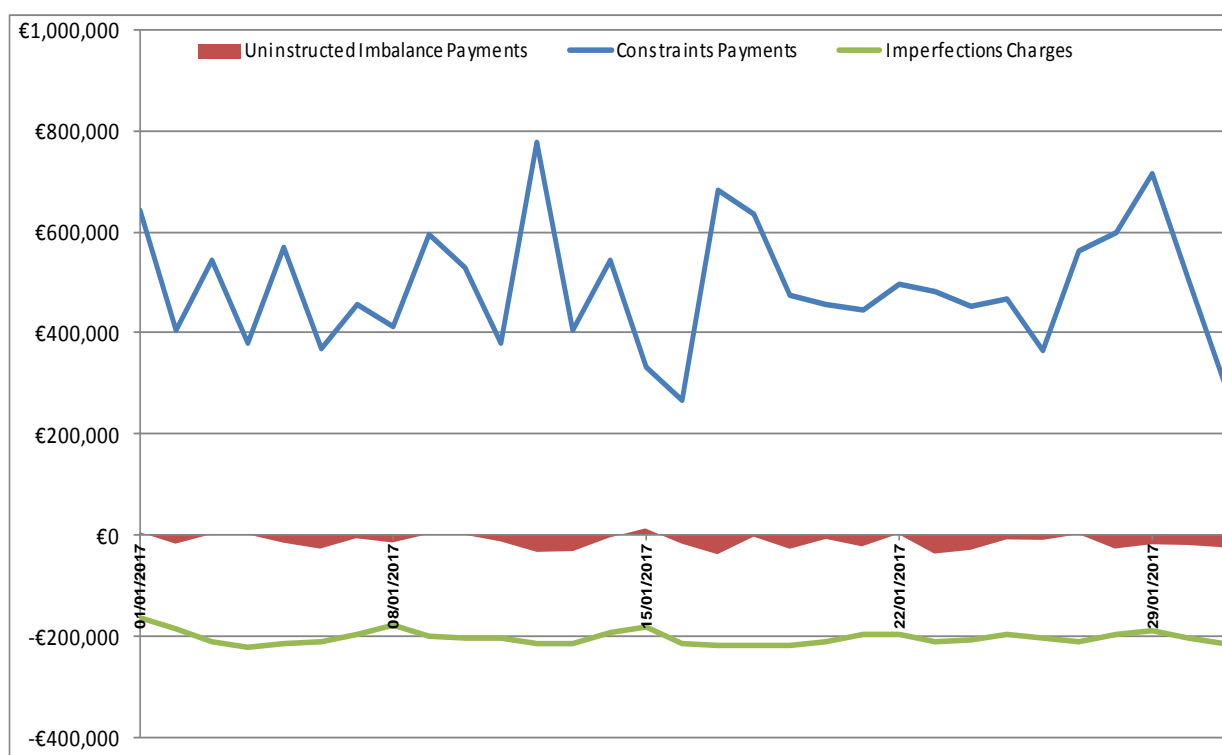


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
38	€156,663.13
39	€99,549.05
40	€104,371.05
41	€9,305.58
42	€17,237.57
43	€18,614.74
44	€23,589.25
45	€5,513.20
46	€17,624.74
47	€27,403.03
48	€98,619.60
49	€82,787.86
50	€82,380.81
51	€68,751.08
52	€17,797.93
1	€71,533.60
2	€71,588.15
3	€22,455.89
4	€73,659.85
5	€44,834.21
6	€94,935.70
7	€71,991.91
8	€89,850.72
9	€187.41
10	€57,226.62
11	€24,353.24
12	€17,519.03
13	€18,413.95
14	€99,351.71
15	€67,571.67
16	€51,800.46
17	€44,459.11
18	€90,358.30
19	€18,448.89
20	€6,824.56
21	€131,010.25
22	€102,162.37
23	€125,869.44
24	€84,547.01
25	€111,163.70
26	€93,228.84
27	€120,087.37
28	€111,064.38
29	€87,089.42
30	€120,954.18
31	€48,552.68
32	€83,561.36
33	€100,430.47
34	€314,113.57
35	€45,208.88
36	€60,068.39

37	€9,584.60
38	€13,717.29
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

Table 22 - Make Whole Payments

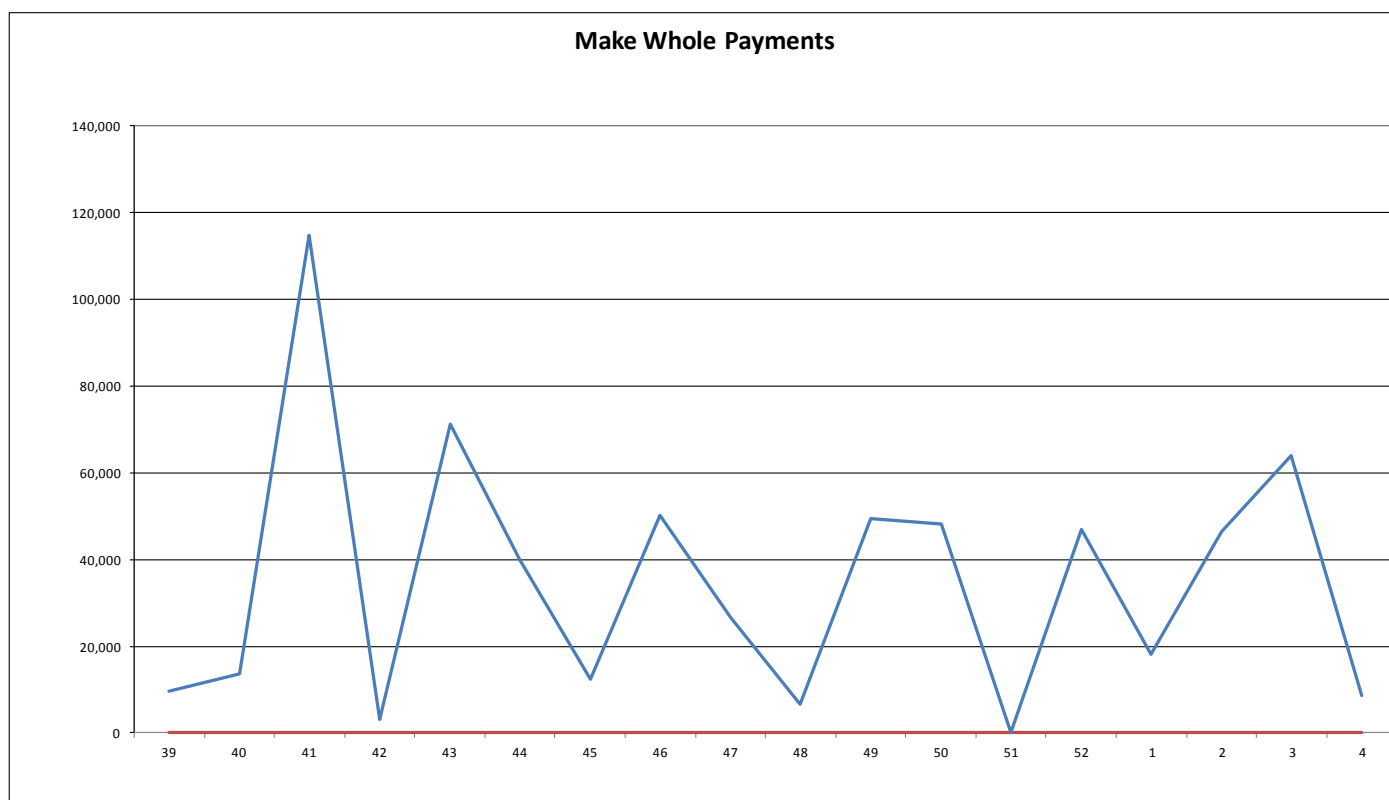


Figure 25 - Make Whole Payments

Week No	Testing Charges
38	-€12,688.71
39	-€1,257.57
40	-€19,812.53
41	-€21,021.55

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42	-€10,419.94
43	-€13,069.61
44	-€16,635.14
45	-€16,770.11
46	-€27,151.66
47	€69,699.23
48	€0.00
49	-€13,909.92
50	-€740.68
51	-€353.00
52	-€456.00
1	-€470.00
2	-€582.00
3	€0.00
4	€0.00
5	€0.00
6	€0.00
7	-€4,381.00
8	-€313.00
9	€0.00
10	-€85,485.01
11	-€187,782.43
12	-€5,476.37
13	€0.00
14	-€904.60
15	-€95,270.20
16	€0.00
17	-€16,655.87
18	€0.00
19	€0.00
20	-€843.00
21	€0.00
22	€0.00
23	-€10,166.13
24	€0.00
25	€17,762.06
26	€0.00
27	-€789.58
28	-€134,653.05
29	-€87,783.63
30	-€175,504.34
31	-€2,364.71
32	€0.00
33	-€59,190.05
34	€0.00
35	€0.00
36	-€5,559.69
37	-€65,398.63
38	€0.00
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

Table 23 - Testing Charges

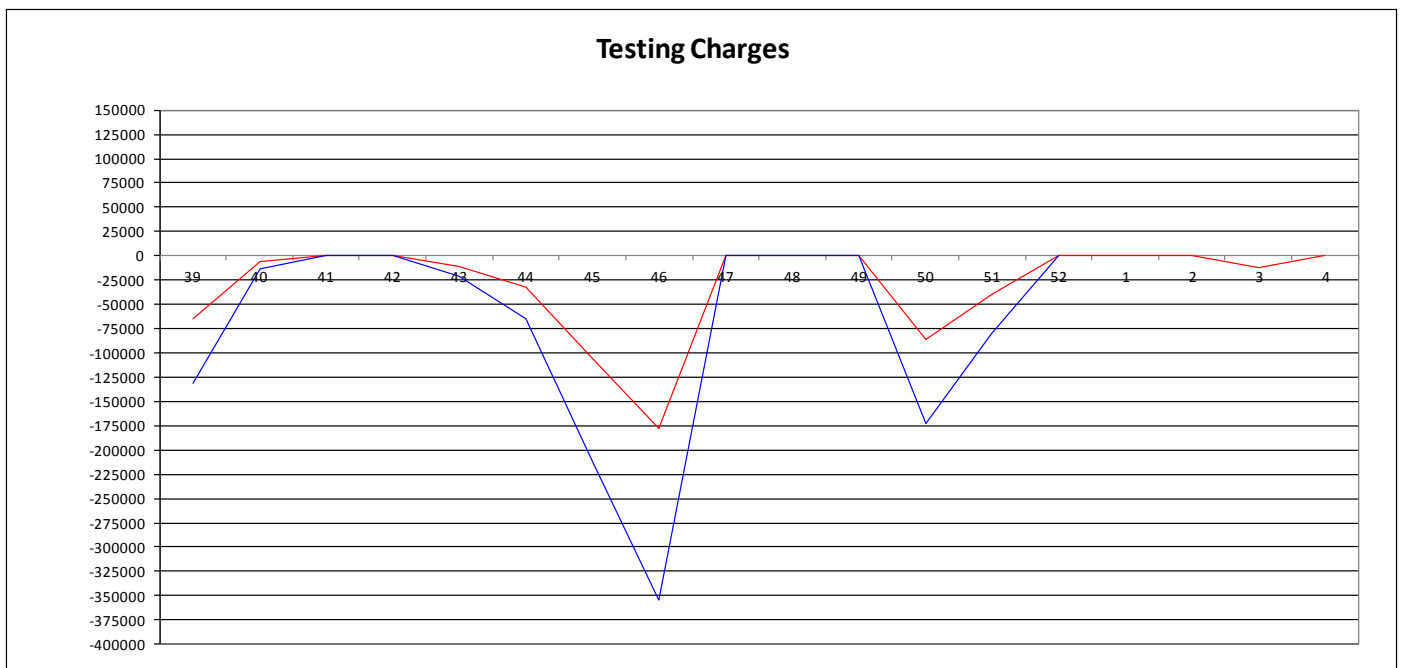


Figure 26 - Testing Charges

Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during January 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	22			22
PT_500078	DSU_501330	6			6
PT_400090	DSU_401610	31			31
PT_400138	DSU_401590	31			31
PT_400090	DSU_401620	31			31
PT_400116	DSU_401400	31			31
PT_500067	DSU_501380	9			9
PT_400106	DSU_401330	31			31
PT_500064	DSU_501200	23			23
PT_400090	DSU_401270	31			31
PT_400144	DSU_401660	6			6
PT_500108	DSU_501560	1			1
PT_400124	DSU_401490	31			31
PT_400024	GU_400120	31			31
PT_400024	GU_400121	31			31
PT_400030	GU_400180	41			41
PT_400030	GU_400181	42			42
PT_400030	GU_400182	42			42
PT_400030	GU_400183	41			41
PT_400030	GU_400200	35			35
PT_400030	GU_400201	35			35
PT_400030	GU_400202	34			34
PT_400030	GU_400203	36			36
PT_400030	GU_400210	34			34
PT_400030	GU_400211	33			33
PT_400030	GU_400220	33			33
PT_400030	GU_400221	34			34
PT_400030	GU_400240	35			35
PT_400030	GU_400250	34			34
PT_400030	GU_400251	33			33
PT_400030	GU_400252	34			34
PT_400030	GU_400260	33			33
PT_400030	GU_400270	35			35
PT_400030	GU_400271	33			33
PT_400030	GU_400272	41			41
PT_400030	GU_400280	34			34
PT_400030	GU_400281	33			33
PT_400030	GU_400290	34			34
PT_400030	GU_400300	42			42
PT_400030	GU_400311	42			42
PT_400030	GU_400324	42			42
PT_400030	GU_400325	42			42
PT_400030	GU_400360	33			33
PT_400030	GU_400361	33			33
PT_400030	GU_400362	33			33
PT_400030	GU_400363	34			34

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PT_400030	GU_400370	33		33
PT_400030	GU_400850	42		42
PT_400032	GU_400430	31		31
PT_400034	GU_400940	31		31
PT_400034	GU_401090	31		31
PT_400034	GU_401440	31		31
PT_400034	GU_401680	31		31
PT_400035	GU_400480	56		56
PT_400037	GU_400500	31		31
PT_400041	GU_400530	68		68
PT_400044	GU_400540	56		56
PT_400054	GU_400620	31		31
PT_400055	GU_400630	31		31
PT_400064	GU_400750	31		31
PT_400064	GU_400751	31		31
PT_400064	GU_400752	31		31
PT_400064	GU_400753	31		31
PT_400064	GU_400762	31		31
PT_400064	GU_400770	31		31
PT_400064	GU_400780	31		31
PT_400064	GU_400781	31		31
PT_400077	GU_400950	31		31
PT_400172	GU_401860	31		31
PT_400197	GU_402020	1		1
PT_500027	GU_500130	90		90
PT_500034	GU_501350	31		31
PT_500040	GU_500281	62		62
PT_500040	GU_500282	62		62
PT_500040	GU_500283	31		31
PT_500083	I_NIMOYLE	86		86
PT_400021	I_ROIEWIC	18		18
PT_500075	I_NIMOYLE	83		83
PT_500024	I_NIMOYLE	31		31
PT_500021	I_NIMOYLE	22		22
PT_400163	I_ROIEWIC	91		91
PT_500031	I_NIMOYLE	31		31
PT_500069	I_NIMOYLE	93		93
PT_400157	I_ROIEWIC	28		28
PT_400096	I_ROIEWIC	93		93
PT_500037	I_NIMOYLE	28		28
PT_400136	I_ROIEWIC	85		85
PT_400115	I_ROIEWIC	31		31
PT_500081	I_NIMOYLE	29		29
PT_400037	I_ROIEWIC	55		55
PT_400168	I_ROIEWIC	30		30
PT_400108	I_ROIEWIC	62		62
PT_400170	I_ROIEWIC	40		40
PT_500070	I_NIMOYLE	61		61
PT_400171	I_ROIEWIC	41		41
PT_400164	I_ROIEWIC	28		28
PT_400030	I_ROIEWIC	31		31
PT_500085	I_NIMOYLE	28		28
PT_500088	I_NIMOYLE	19		19
PT_500092	I_NIMOYLE	2		2

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PT_500024	GU_500041	31		31
PT_500027	GU_500130	89		89
PT_500027	GU_500131	89		89
PT_500027	GU_500140	89		89
PT_500034	GU_501350	32		32
PT_500040	GU_500281	63		63
PT_500040	GU_500282	63		63
PT_500040	GU_500283	32		32
PT_500040	GU_500284	32		32
PT_500045	GU_500820	32		32
PT_500045	GU_500821	32		32
PT_500045	GU_500822	32		32
PT_500045	GU_500823	32		32
PT_500045	GU_500824	32		32
PT_500045	GU_500825	32		32
PT_500048	GU_500904	47		47
PT_500050	GU_501040	31		31
PT_500050	GU_501050	31		31
PT_500050	GU_501150	31		31
PT_500050	GU_501190	31		31
PT_500053	GU_501130	31		31
PT_500066	GU_501210	31		31
PT_500073	GU_501230	3		3
PT_400090	DSU_401610	32		32
PT_400138	DSU_401590	31		31
PT_400090	DSU_401620	31		31
PT_400116	DSU_401400	31		31
PT_500098	DSU_501450	4		4
PT_500067	DSU_501380	21		21
PT_400106	DSU_401330	30		30
PT_400090	DSU_401270	31		31
PT_400124	DSU_401490	32		32
PT_500083	I_NIMOYLE	90		90
PT_400021	I_ROIEWIC	9		9
PT_500021	I_NIMOYLE	30		30
PT_500075	I_NIMOYLE	79		79
PT_500024	I_NIMOYLE	31		31
PT_400163	I_ROIEWIC	27		27
PT_500031	I_NIMOYLE	31		31
PT_500069	I_NIMOYLE	90		90
PT_400157	I_ROIEWIC	2		2
PT_400096	I_ROIEWIC	26		26
PT_500037	I_NIMOYLE	22		22
PT_400115	I_ROIEWIC	31		31
PT_400136	I_ROIEWIC	10		10
PT_500081	I_NIMOYLE	28		28
PT_500070	I_NIMOYLE	63		63
PT_400108	I_ROIEWIC	19		19
PT_400170	I_ROIEWIC	9		9
PT_400171	I_ROIEWIC	8		8
PT_400164	I_ROIEWIC	1		1
PT_500092	I_NIMOYLE	34		34
PT_400030	I_ROIEWIC	9		9
PT_500088	I_NIMOYLE	57		57

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PT_500085	I_NIMOYLE	16			16
PT_400144	DSU_401660			25	25
PT_400090	DSU_401800			31	31
PT_400090	DSU_401850			31	31
PT_500078	DSU_501330			25	25
PT_400111	DSU_401390			31	31
PT_500067	DSU_501380			23	23
PT_400133	DSU_401530			31	31
PT_500098	DSU_501450			31	31
PT_400116	DSU_401870			31	31
PT_400124	DSU_401880			31	31
PT_400021	GU_401380			31	31
PT_400021	GU_401600			31	31
PT_400021	GU_401640			31	31
PT_400025	GU_400130			31	31
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_400062	GU_400730			31	31
PT_400062	GU_400731			31	31
PT_400062	GU_400840			31	31
PT_400066	GU_401540			31	31
PT_400066	GU_401820			31	31
PT_400082	GU_401100			31	31
PT_400087	GU_401230			31	31
PT_400148	GU_401690			31	31
PT_400150	GU_401700			31	31
PT_400151	GU_401770			31	31
PT_400151	GU_401780			31	31
PT_400152	GU_401710			31	31
PT_400152	GU_401720			31	31
PT_400152	GU_401730			31	31
PT_400152	GU_401740			31	31
PT_400152	GU_401750			31	31
PT_400152	GU_401760			31	31
PT_400162	GU_401830			31	31
PT_500021	GU_500010			31	31
PT_500021	GU_500740			31	31
PT_500021	GU_501160			31	31
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

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PT_500039	GU_500270			31	31
PT_500044	GU_500720			31	31
PT_500047	GU_500790			31	31
PT_500061	GU_501170			31	31
PT_500062	GU_501180			31	31
PT_500073	GU_501230			31	31
PT_500074	GU_501250			31	31
PT_500089	GU_501360			31	31
	Total	5615	0	1871	7486
	Percentage	75.01%	0.00%	24.99%	100.00%

Table 24 – 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
Feb-16	ROI	£44,227,777.74	£22,236,309.33	£1,235,987.38	£920,699.87	£111,578.50	£2,310.47	£168,670.97	£16,768.91	£473.10	£0.00	£0.00	£0.00	68,320,576.27
	NI	£16,675,395.96	£6,086,547.11	£1,187,219.91	£53,340.80	£16,688.72	£277.65	£11,014.82	£3,948.74	£76.07	£0.00	£0.00	£0.00	24,034,509.78
Mar-16	ROI	£46,479,736.23	£21,810,284.94	£1,247,077.11	£218,253.91	£0.00	£2,241.73	£325,512.38	£0.00	£184.01	£10,658.28	£0.00	£0.00	70,093,948.59
	NI	£18,169,780.86	£5,723,642.36	£307,019.09	£92,518.83	£0.00	£1,042.35	£18,464.14	£0.00	£90.30	£35.07	£0.00	£0.00	24,312,593.00
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	£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
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	£11,761.72	£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	£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
Jan-17	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

Table 24 – Total Charges by Month

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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
Feb-16	ROI	€45,263,558.04	€22,785,032.30	€71,204.73	€469,504.52	€120,827.10	€2,298.60	€168,670.97	€17,161.82	€409.35	€0.00	€0.00	€68,898,667.43
	NI	€16,138,572.90	€5,672,214.93	€22,437.26	€24,123.83	€9,213.97	-€275.84	€11,014.82	€3,591.14	€59.13	€0.00	€0.00	€21,880,952.14
Mar-16	ROI	€45,576,733.11	€21,729,626.52	€256,964.95	€0.00	€2,213.11	€34,217.09	€0.00	€140.55	€104,929.14	€0.00	€69.37	€67,704,893.84
	NI	€17,860,759.81	€5,776,150.05	€92,747.29	€0.00	€556.70	€16,666.86	€0.00	€79.45	€2.26	€0.00	€20.36	€23,746,982.78
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	€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
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	€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
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

Table 25 - 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
02/10/2015	38	-€1,655,942.38	€ 162,994.80
09/10/2015	39	-€1,135,216.68	€177,381.90
16/10/2015	40	€507,903.08	€106,382.04
23/10/2015	41	€681,099.48	€131,096.53
30/10/2015	42	€405,933.93	-€25,867.40
06/11/2015	43	€559,788.60	€38,427.78
13/11/2015	44	-€49,013.58	€13,013.70
20/11/2015	45	€760,249.70	€98,639.75
27/11/2015	46	€808,399.38	€71,687.58
04/12/2015	47	€466,243.69	-€300,749.94
11/12/2015	48	€897,437.38	-€534,740.45
18/12/2015	49	€141,592.08	-€388,379.01
30/12/2015	50	€878,459.85	-€160,949.17
05/01/2016	51	€838,626.05	-€0
08/01/2016	52	€1,134,591.97	-€0
03/01/2016	1	€615,047.23	-€0
22/01/2016	2	€1,273,552.21	-€0
29/01/2016	3	€1,174,521.30	-€0
05/02/2016	4	€504,528.98	-€0
12/02/2016	5	€856,861.27	-€0
19/02/2016	6	€92,167.26	-€0
26/02/2016	7	€255,104.63	-€0
04/03/2016	8	-€265,963.47	-€0
11/03/2016	9	€256,130.58	-€0
21/03/2016	10	-€13,382.85	-€0
25/03/2016	11	€531,976.18	-€0
01/04/2016	12	-€35,023.74	-€0
08/04/2016	13	-€2,353.02	-€0
15/04/2016	14	-€1,306,455.65	-€0
22/04/2016	15	-€1,078,232.88	-€0
29/04/2016	16	-€316,904.19	-€0
06/05/2016	17	€225,399.35	-€0
13/05/2016	18	-€852,085.24	-€0
20/05/2016	19	-€1,030,542.65	-€0
27/05/2016	20	-€835,814.27	-€0
03/06/2016	21	-€1,224,851.34	-€0
10/06/2016	22	-€1,362,326.06	-€0
17/06/2016	23	-€334,215.24	-€0
24/06/2016	24	-€735,443.16	-€0
01/07/2016	25	-€875,900.06	-€0
08/07/2016	26	-€911,184.06	-€0
15/07/2016	27	-€1,059,451.72	-€0

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Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
22/07/2016	28	-€859,485.92	-€0
29/07/2016	29	-€407,934.96	-€0
05/08/2016	30	-€186,586.75	-€0
12/08/2016	31	-€117,429.10	-€0
19/08/2016	32	-€511,694.11	-€0
26/08/2016	33	-€338,852.43	-€0
02/09/2016	34	-€945,476.51	-€0
09/09/2016	35	-€544,556.24	-€0
16/09/2016	36	-€636,434.36	-€0
23/09/2016	37	-€1,029,609.73	-€0
30/09/2016	38	€15,000.54	-€0
7/10/2016	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

Table 25 – 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
October 2015	-€340.35	-€ 7,800.91
November 2015	-€386.53	€20,938.81
December 2015	-€421.62	€0
January 2016	-€365.96	€0
February 2016	-€324.58	€0
March 2016	-€349.99	€0
April 2016	-€246.89	€0
May 2016	-€232.99	€0

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Invoice Month	SEM Balancing Costs	VAT Balancing Costs
June 2016	-€251.6	€0
July 2016	-€202.38	€0
August 2016	-€250.61	€0
September 2016	-€263.46	€0
October 2016	-€373.17	€0
November 2016	-€395.27	€0
December 2016	-€400.31	€0
January 2017	-€345.12	€0

Table 26 - 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>October 2015</u>	-	-	-	-	<u>04/10/2015</u>
<u>November 2015</u>	<u>16/11/2015</u>	<u>30/11/2015</u>	<u>26/11/2015</u>	-	-
<u>December 2015</u>	-	<u>08/12/2015</u> <u>17/12/2015</u> <u>21/12/2015</u>	<u>08/12/2015</u> <u>10/12/2015</u> <u>11/12/2015</u> <u>14/12/2015</u>	<u>14/12/2015</u> <u>17/12/2015</u>	-
<u>January 2016</u>	-	<u>05/02/2016</u> <u>13/01/2016</u>	<u>07/01/2016</u> <u>08/01/2016</u>	<u>08/02/2016</u> <u>26/01/2016</u>	-
<u>February 2016</u>	-	-	-	-	<u>10/02/2016</u>
<u>March 2016</u>	-	<u>28/03/2016</u>	<u>10/03/2016</u>	<u>10/03/2016</u>	-
<u>April 2016</u>	-	-	-	-	-
<u>May 2016</u>	-	-	-	-	-

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Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>June 2016</u>	-	-	-	<u>15/06/2016</u>	-
<u>July 2016</u>	-	-	-	-	-
<u>Aug 2016</u>	-	-	-	<u>16/08/2016</u>	-
<u>Sept 2016</u>	-	<u>10/09/2016</u> <u>11/09/2016</u> <u>14/09/2016</u>	-	<u>04/09/2016</u> <u>11/09/2016</u>	<u>11/09/2016</u> <u>24/09/2016</u>
<u>Oct 2016</u>	-	<u>03/10/2016</u> <u>26/10/2016</u>	<u>02/10/2016</u> <u>12/10/2016</u> <u>24/10/2016</u> <u>28/10/2016</u>	<u>04/10/2016</u> <u>07/10/2016</u> <u>08/10/2016</u> <u>24/10/2016</u> <u>25/10/2016</u>	<u>01/10/2016</u> <u>25/10/2016</u> <u>26/10/2016</u> <u>28/10/2016</u>
<u>Nov 2016</u>	-	<u>25/11/2016</u>	-	<u>01/11/2016</u> <u>17/11/2016</u>	<u>10/11/2016</u> <u>23/11/2016</u> <u>29/11/2016</u> <u>30/11/2016</u>
<u>Dec 2016</u>	<u>08/12/2016</u>	<u>06/12/2016</u> <u>08/12/2016</u> <u>13/12/2016</u> <u>15/12/2016</u> <u>21/12/2016</u>	<u>01/12/2016</u> <u>12/12/2016</u> <u>15/12/2016</u> <u>15/12/2016</u>	<u>04/12/2016</u> <u>16/12/2016</u> <u>18/12/2016</u> <u>20/12/2016</u> <u>22/12/2016</u>	<u>08/12/2016</u> <u>09/12/2016</u>
<u>Jan 2017</u>	<u>29/01/2017</u> <u>31/01/2017</u>	<u>03/01/2017</u> <u>26/01/2017</u> <u>29/01/2017</u> <u>31/01/2017</u>		<u>01/01/2017</u> <u>23/01/2017</u> <u>28/01/2017</u> <u>30/01/2017</u>	<u>12/01/2017</u> <u>31/01/2017</u>

Table 27 - MIP Algorithms

Operational Date	Trade Date	Run Type	LR Peak SMP	MIP Peak SMP	Published
08/10/2015	04/10/2015	EP2	€1,000	€71.89	MIP
15/11/2015	16/11/2015	EA1	€524.42	€207.35	MIP
27/11/2015	26/11/2015	EP1	€1,000	€219.39	MIP
29/11/2015	30/11/2015	EA2	€1,000	€169.45	MIP
07/12/2015	08/12/2015	EA2	€1,000	€279.06	MIP
09/12/2015	08/12/2015	EP1	€1,000	€238.81	MIP
11/12/2015	10/12/2015	EP1	€1,000	€279.06	MIP
12/12/2015	11/12/2015	EP1	€1,000	€255.40	MIP

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15/12/2015	14/12/2015	EP1	€1,000	€279.06	MIP
16/12/2015	17/12/2015	EA2	€1,000	€203.01	MIP
18/12/2015	14/12/2015	EP2	€1,000	€435.61	MIP
20/12/2015	21/12/2015	EA2	€1,000	€151.53	MIP
21/12/2015	17/12/2015	EP2	€513.81	€412.60	MIP
04/01/2016	05/01/2016	EA2	€1,000	€1,000	MIP
08/01/2016	07/01/2016	EP1	€1,000	€207.75	MIP
09/01/2016	08/01/2016	EP1	€1,000	€279.06	MIP
12/01/2016	13/01/2016	EA2	€1,000	€170.51	MIP
12/01/2016	08/01/2016	EP2	€1,000	€279.06	MIP
30/01/2016	26/01/2016	EP2	€1,000	€207.85	MIP
10/02/2016	10/02/2016	WD1	€1,000	€176.75	MIP
11/03/2016	10/03/2016	EP1	€1,000	€179.85	MIP
14/03/2016	10/03/2016	EP2	€1,000	€179.38	MIP
27/03/2016	28/03/2016	EA2	€1,000	€114.04	MIP
19/06/2016	15/06/2016	EP2	€1,000	€279.06	MIP
20/08/2016	16/08/2016	EP2	€1,000	€97.16	MIP
08/09/2016	04/09/2016	EP2	(€100)	€37.82	MIP
09/09/2016	10/09/2016	EA2	€548.34	€1,000.00	MIP
10/09/2016	11/09/2016	EA2	(€100)	€28.68	MIP
11/09/2016	11/09/2016	WD1	(€100)	€67.67	MIP
13/09/2016	14/09/2016	EA2	€1,000	€46.98	MIP
15/09/2016	11/09/2016	EP2	(€100)	€189.67	MIP
24/09/2016	24/09/2016	WD1	(€100)	€79.61	MIP
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

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30/11/2016	29/11/2016	EA2	€552.76	€181.28	MIP
30/11/2016	29/11/2016	EP1	€541.87	€270.18	MIP
01/12/2016	30/11/2016	EP1	€541.59	€207.75	MIP
04/12/2016	30/11/2016	EP2	€541.59	€207.75	MIP
06/12/2016	07/12/2016	EA1	€1,000	€111.24	MIP
08/12/2016	08/12/2016	WD1	(€100)	€191.23	MIP
08/12/2016	09/12/2016	EA1	€940.08	€213.49	MIP
08/12/2016	09/12/2016	EA2	€1,000	€227.15	MIP
09/12/2016	09/12/2016	WD1	€544.89	€226.90	MIP
12/12/2016	13/12/2016	EP1	€550.08	€550.08	MIP
13/12/2016	14/12/2016	EA2	€1,000	€221.53	MIP
15/12/2016	16/12/2016	EA2	€1,000	€97.99	MIP
15/12/2016	14/12/2016	EP1	€551.72	€257.90	MIP
15/12/2016	14/12/2016	EP1	€577.68	€557.94	MIP
16/12/2016	12/12/2016	EP2	€564.56	€550.08	MIP
18/12/2016	14/12/2016	EP2	€551.72	€551.72	MIP
20/12/2016	16/12/2016	EP2	€1,000	€551.25	MIP
21/12/2016	22/12/2016	EA2	€1,000	€188.21	MIP
22/12/2016	18/12/2016	EP2	€552.30	€375.21	MIP
01/01/2017	31/12/2016	EP1	€581.16	€238.04	MIP
03/01/2017	04/01/2017	EA2	€1,000	€250.11	MIP
12/01/2017	08/01/2017	EP2	€-100	€-100	MIP
19/01/2017	18/01/2017	EA2	€1,000	€187.49	MIP
23/01/2017	22/01/2017	EP1	€546.36	€111.81	MIP
26/01/2017	27/01/2017	EA2	€1000	€225.25	MIP
26/01/2017	22/01/2017	EP2	€546.36	€101.73	MIP
28/01/2017	27/01/2017	EP1	€544.22	€544.22	MIP
30/01/2017	31/01/2017	EA2	€1000	€236.42	MIP
30/01/2017	29/01/2017	EP1	€553.05	€553.05	MIP
31/01/2017	31/01/2017	WD1	€554.03	€554.03	MIP
31/01/2017	27/01/2017	EP2	€544.22	€544.22	MIP

Table 28 - MIP Vs LR Peak Price Comparison