



Market Operator Monthly Report

April 2017

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Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of April 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 April 2017, there were no late Settlement publications as per the Trading and Settlement code.

During the month of April 2017, there were no late publications of the Credit Report as per the Trading and Settlement code timelines.

There were 14 defaults by Participants during April 2017. The largest of these was a Capacity M+4 Nov 2016 invoice for €250.81 which was remedied the same day.

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

145 general queries were received in April 2017. During the same period 156 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	-	-
	Funds Transfer	14	-
	Credit Risk Management	-	-
SEMO	Pricing & Scheduling	-	1
	Settlement	-	-
	Funds Transfer	-	-
	Credit Risk Management	-	-
	Other	-	-
Total		14	2

Table 1 – Trading and Settlement Code Breaches

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

Key:

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

Joining and Terminating Parties and Units

No parties joined the Market in April 2017.

There were no terminating parties in April 2017.

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

- PT_400050_Viridian Energy Limited - GU_402010 Ballybane Windfarm Phase 3
- PT_400133_Wirelite Sensors Ltd - DSU_401910 Endeco DSU2
- PT_400134_Wirelite Sensors Limited - SU_400195 Endeco DSU2
- PT_400021_Airtricity Ltd (Generation) - GU_401990 Seecon Wind Farm
- PT_500021_Airtricity Energy Supply NI Ltd Generation - GU_501630 Rasharkin Solar PV
- PT_500021_Airtricity Energy Supply NI Ltd Generation - GU_501650 Lightsource SPV 48
- PT_500032_Viridian Energy Supply Ltd - GU_501570 Altamuskin Windfarm
- PT_500104_Gaelectric Green Energy Limited - GU_501490 Inishative Windfarm Limited
- PT_500112_Captured Carbon Limited - PT_500112_I_NIMOYLE Captured Carbon Limited
- PT_400200_ElectroRoute Energy Supply Limited - SU_400208 ElectroRoute Energy Supply

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

Suspension of Participants

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

Financial Statistics

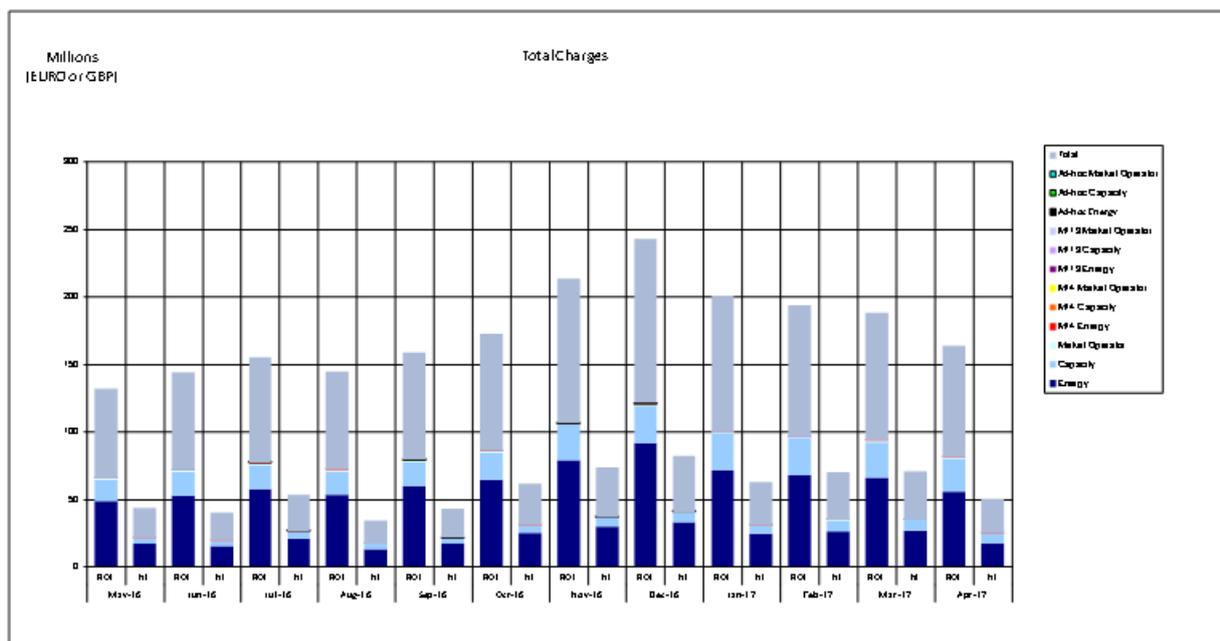


Figure 1 - Total Charges for Each Currency

Market	April 2017	
	ROI	NI
Energy	€56,165,196	£17,358,283
Capacity	€24,426,665	£7,584,088
Market Operator	€727,001	£179,415
M+4 Energy	€536,698	£127,102
M+4 Capacity	€142,324	£27,652
M+4 Market Operator	€3,531	£859
M+13 Energy	€45,125	£60,044
M+13 Capacity	€18,620	£25,589
M+13 Market Operator	€596	£802

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Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
Total	€82,065,756	£25,363,835

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

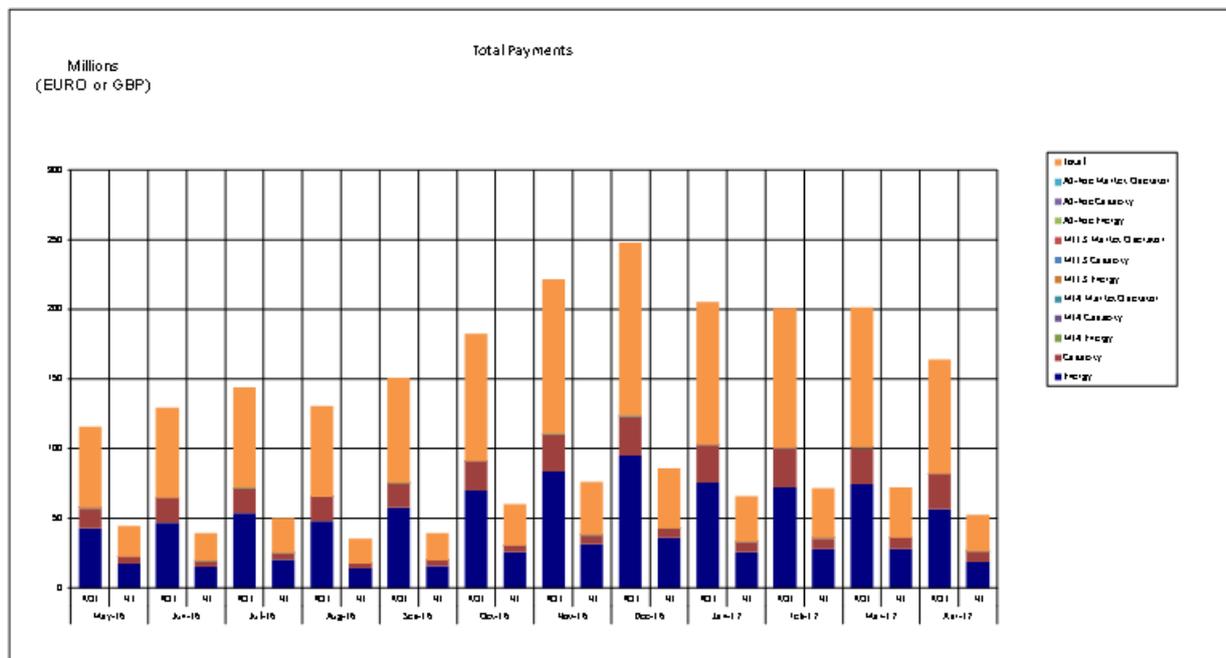


Figure 2 - Total Payments for Each Currency

Market	April 2017	
	ROI	NI
Energy	€56,718,381	£18,526,297
Capacity	€24,463,279	£7,555,446
M+4 Energy	€537,286	£125,968
M+4 Capacity	€147,053	£23,710
M+4 Market Operator	€3,530	£646
M+13 Energy	€45,105	£59,866
M+13 Capacity	€18,332	£25,833
M+13 Market Operator	€596	£811
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
Total	€81,933,562	£26,318,577

Table 3 - Total Payments for Each Currency

Total Balancing Costs

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

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

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

April 2017	
Imbalance (Energy Only)	-€2,716,944.34

Table 4 - Balancing Costs for Energy Settlement

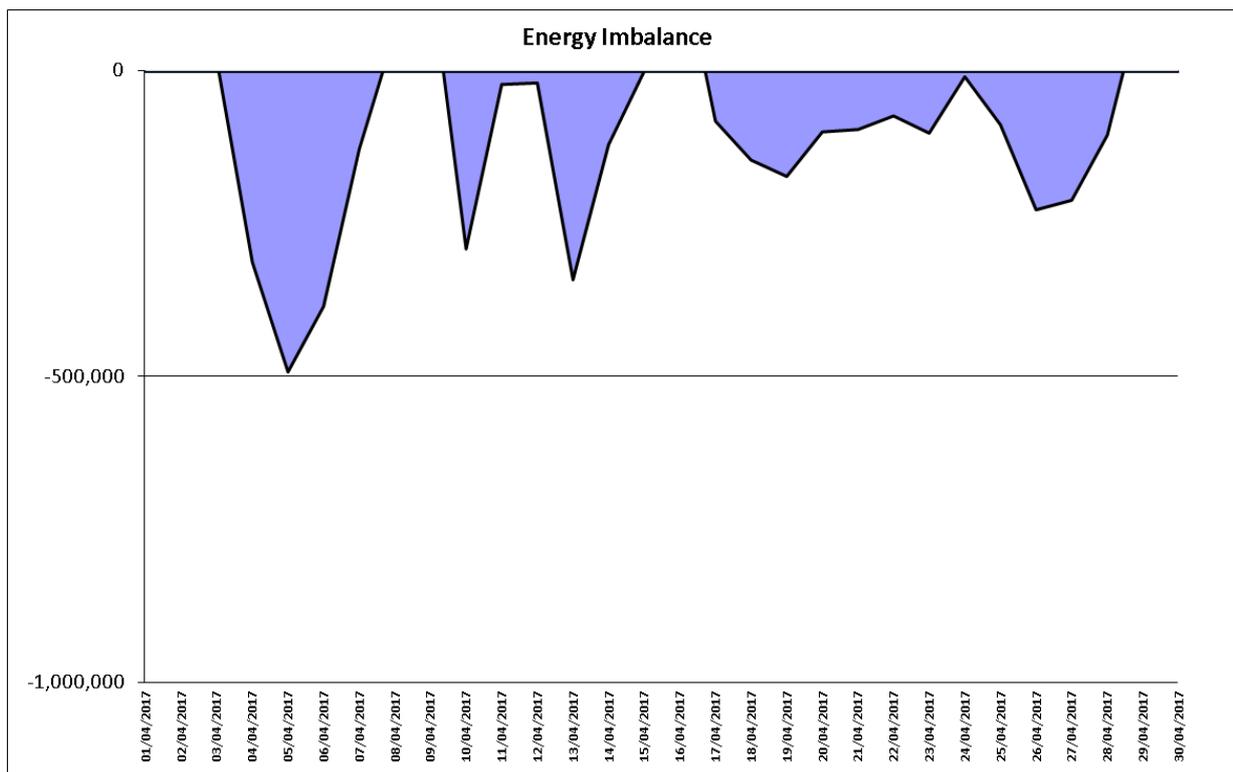


Figure 3 – Energy Imbalances

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

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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
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

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:

April 2017	
Capacity Charges	-39,374,523.08
Capacity Payments	39,374,290.38
Balancing Costs	-232.70
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 (£).

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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
01/04/2017	07/04/2017	13	-£3,239.11	£-	-£3,239.11
08/04/2017	14/04/2017	14	-£6,836.45	£-	-£6,836.45
15/04/2017	21/04/2017	15	-£13,678.49	£-	-£13,678.49
22/04/2017	28/04/2017	16	-£4,915.60	£-	-£4,915.60

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 £-3,239.11 and a cost to Participants of up to £-13,678.49. Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

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

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

Date Of Invoice	Capacity Month	Currency Costs For Capacity Settlement
11/04/2017	April 2017	£3,162.94

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
€100,663,433.04	-€2,196,036.98	€1,842,478.02	-€41,556,464.63

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.

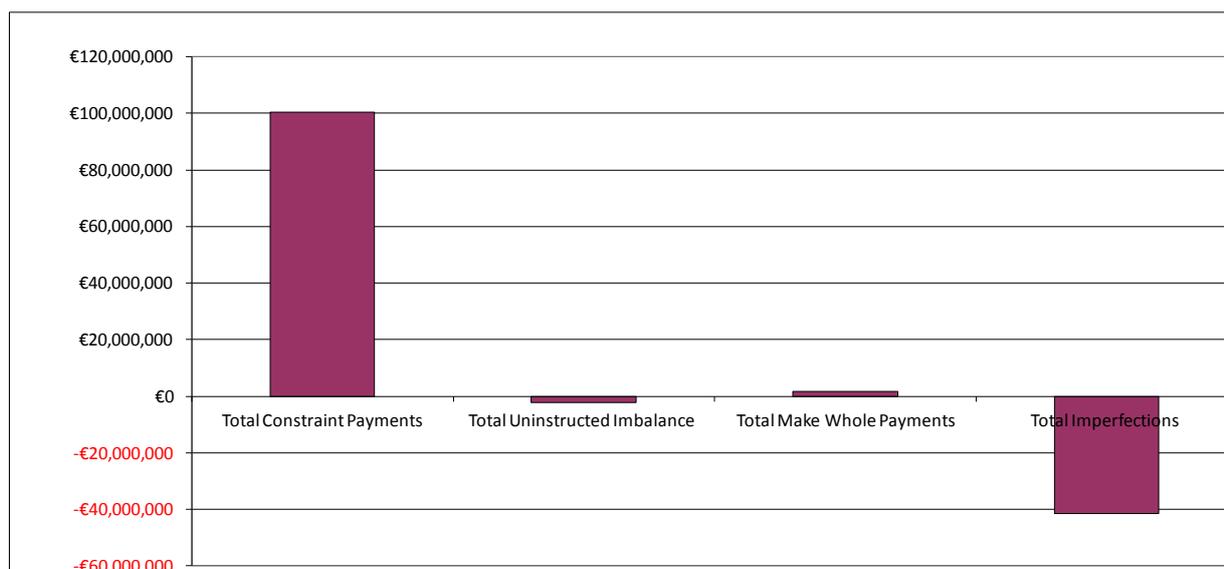


Figure 4 - Cumulative Imperfections Costs Vs Budget

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 December 2016 and M+13 resettlement period of March 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

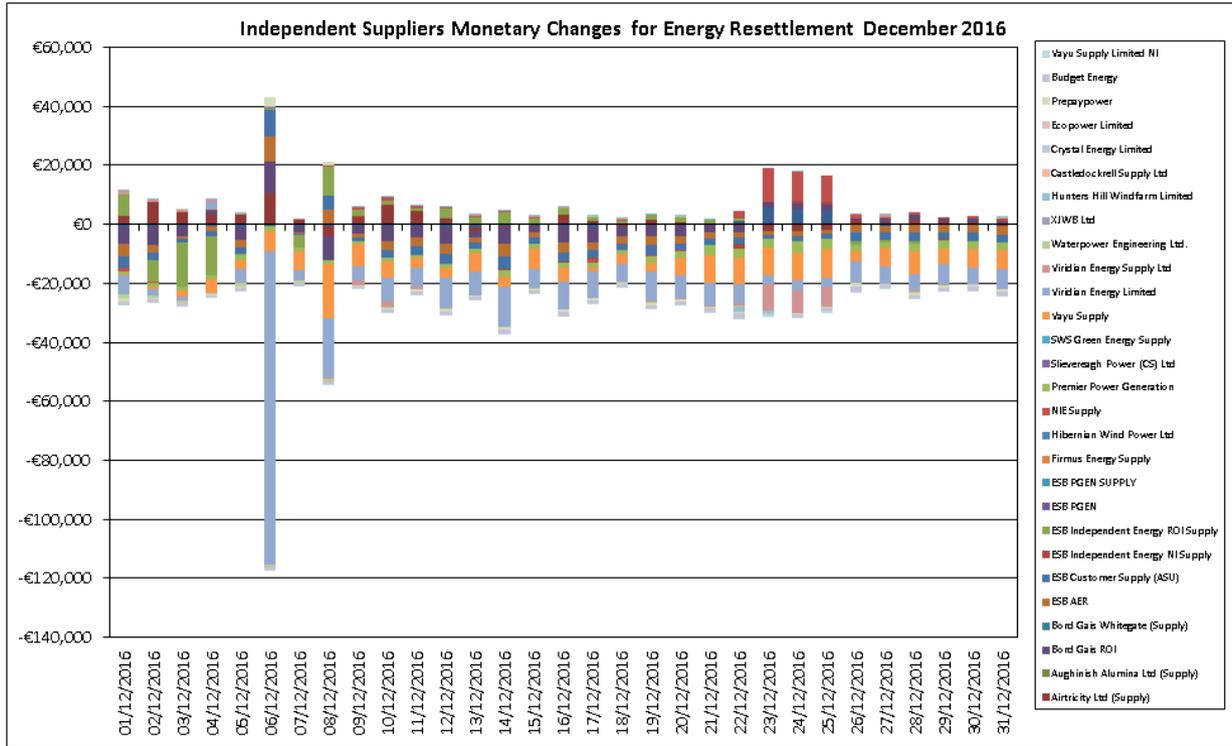


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – December 2016

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

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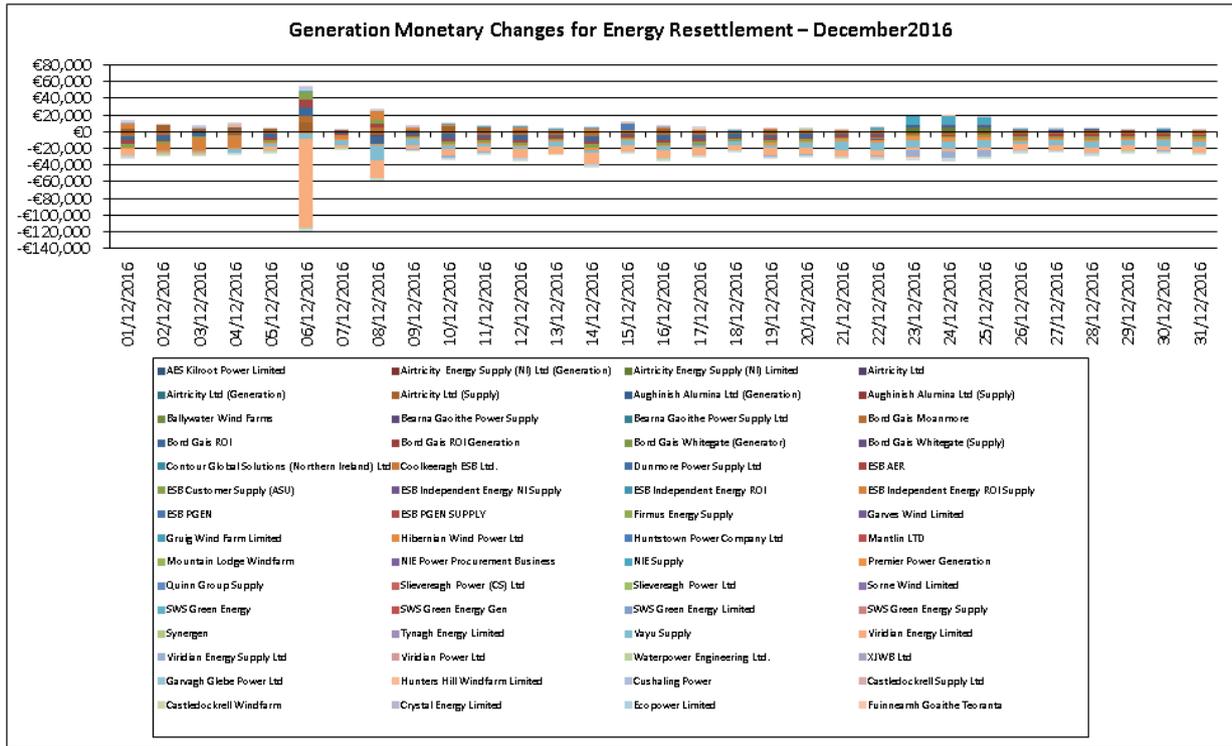


Figure 6 – Generation Monetary Changes for Energy Resettlement – December 2016

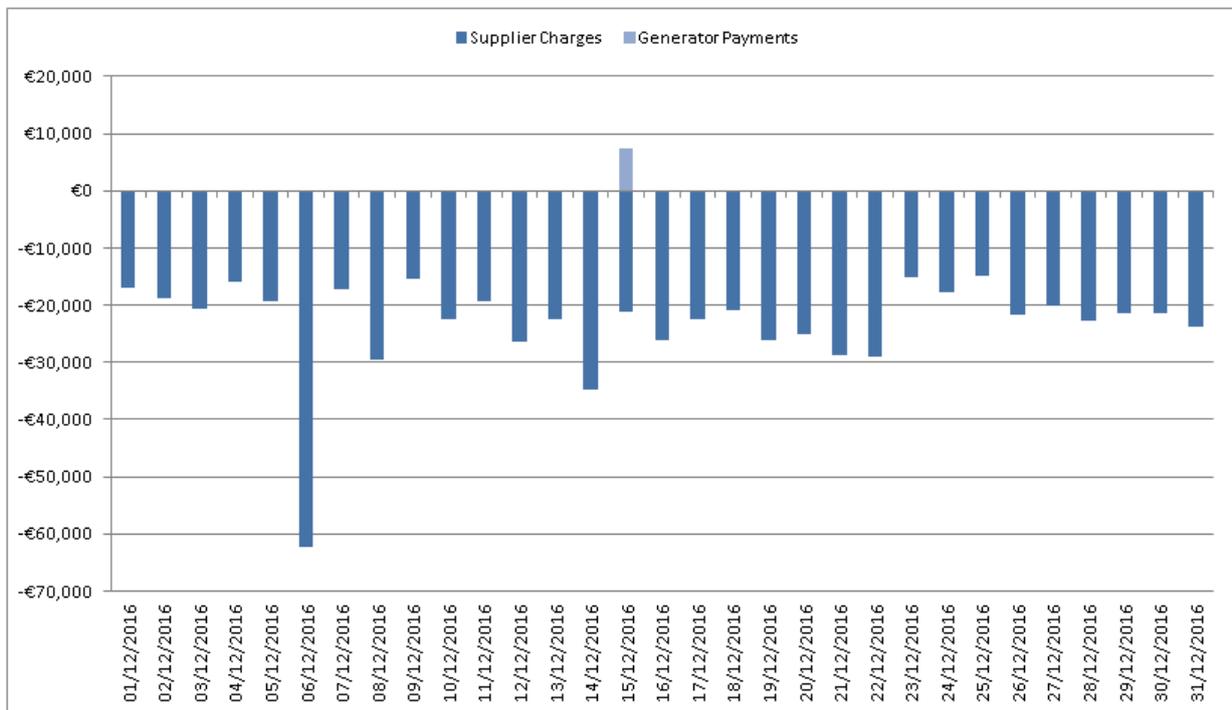


Figure 7 – Total Monetary Changes for Energy Resettlement – December 2016

M+13 Resettlement

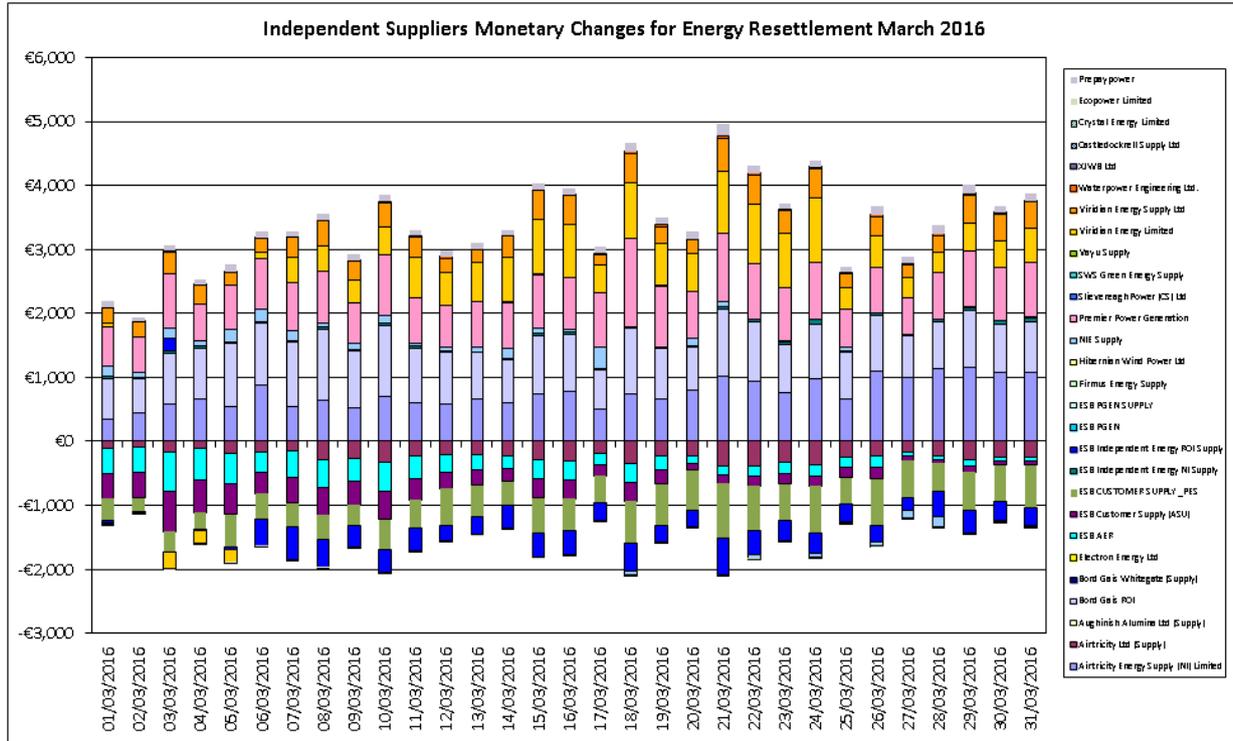


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – March 2016

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

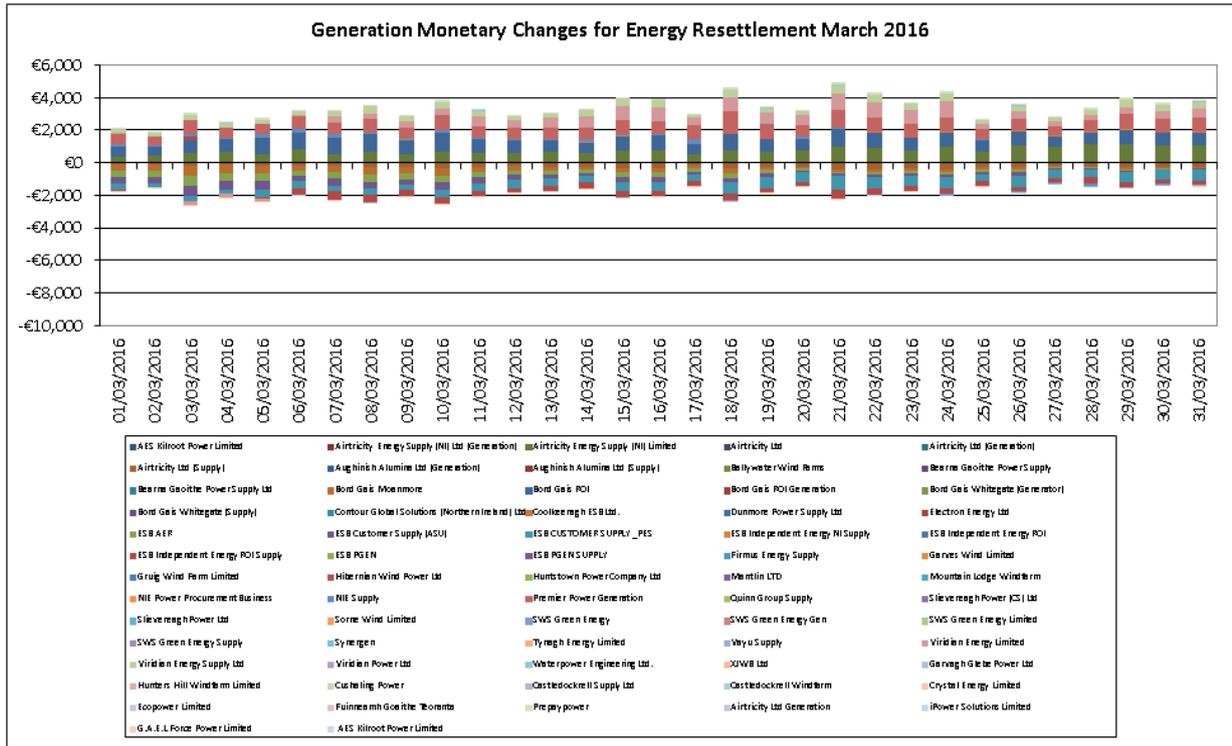


Figure 9 - Generation Monetary Changes for Energy Resettlement – March 2016

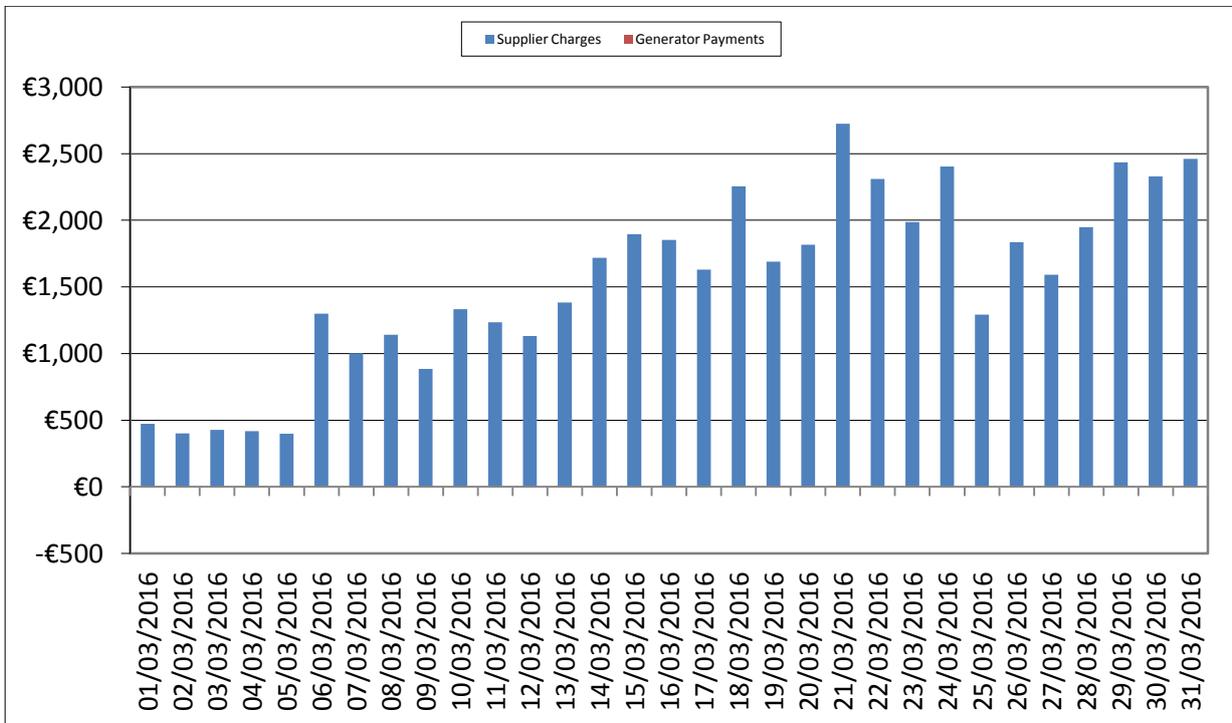


Figure 10 - Total Monetary Changes for Energy Resettlement – March 2016

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.

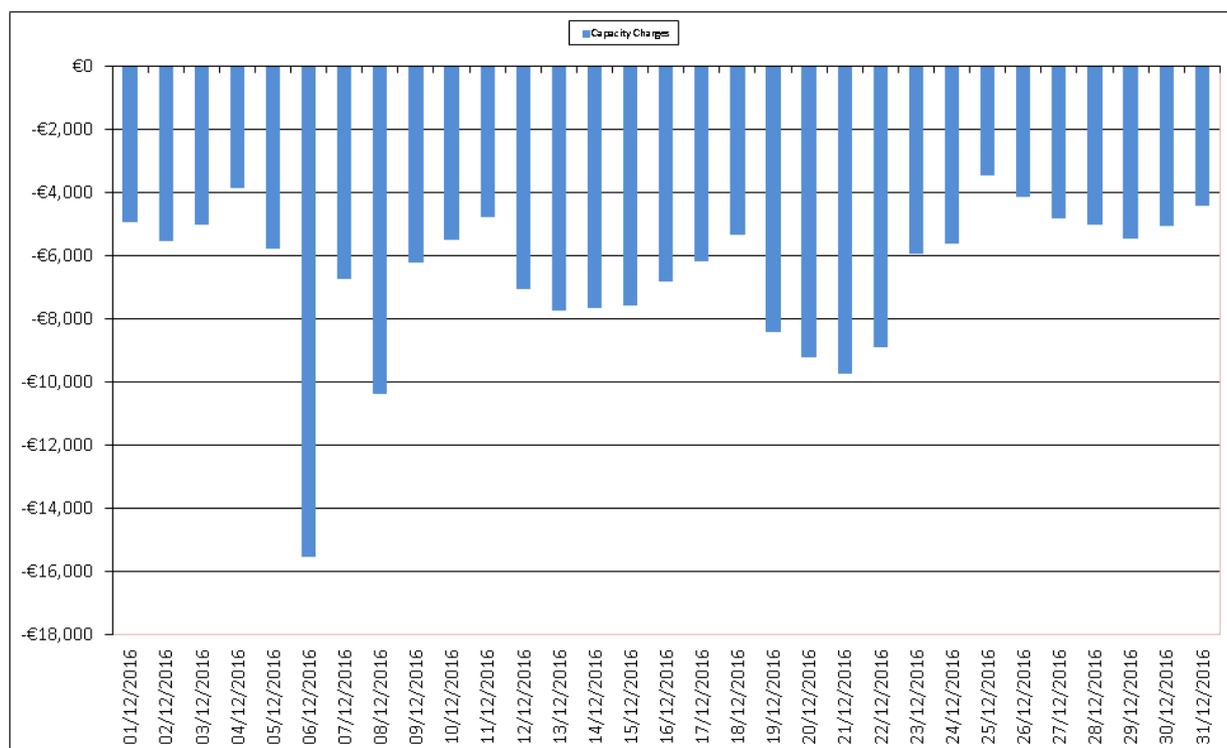


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – December 2016

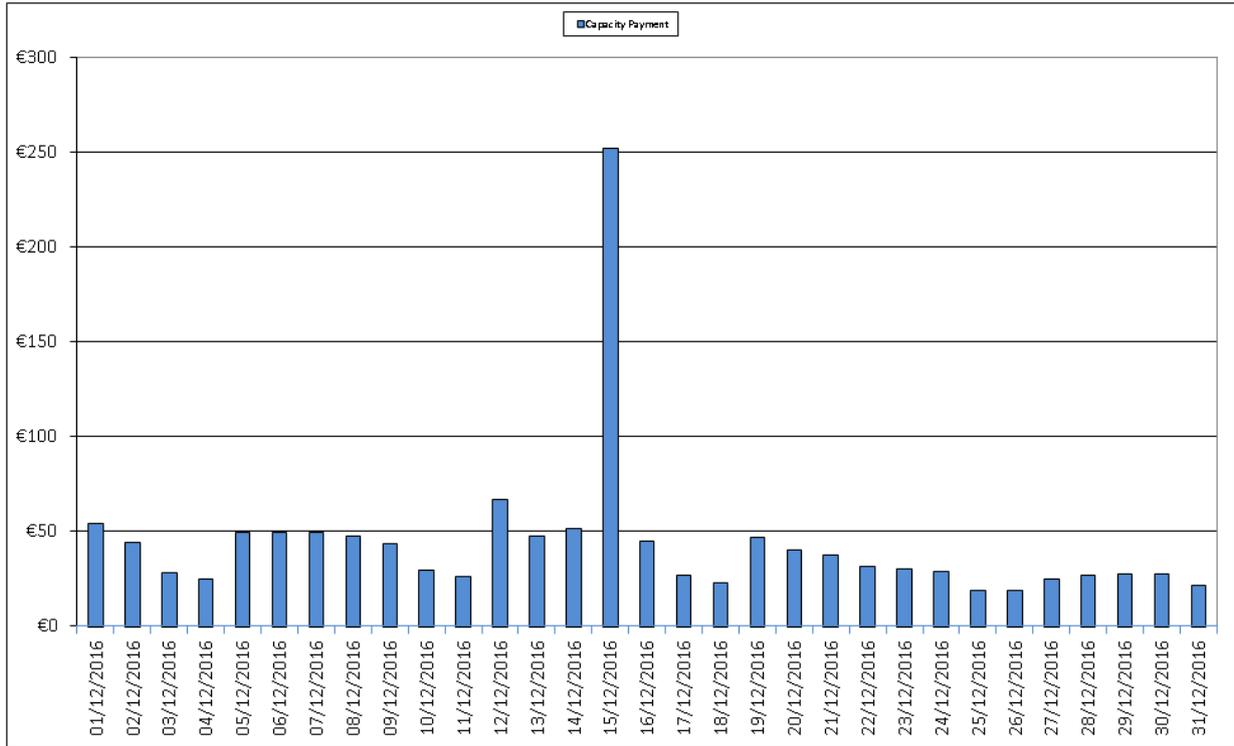


Figure 12 - All Generation Monetary Change for Capacity Resettlement – December 2016

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

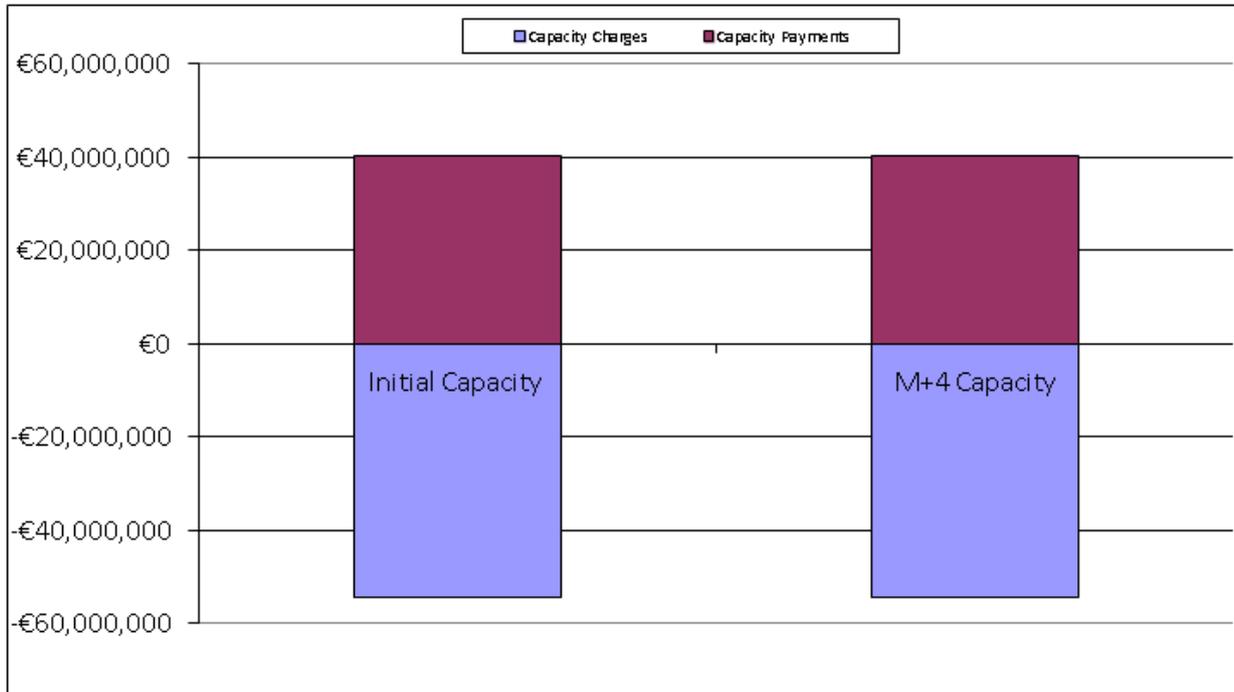


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement December 2016

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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

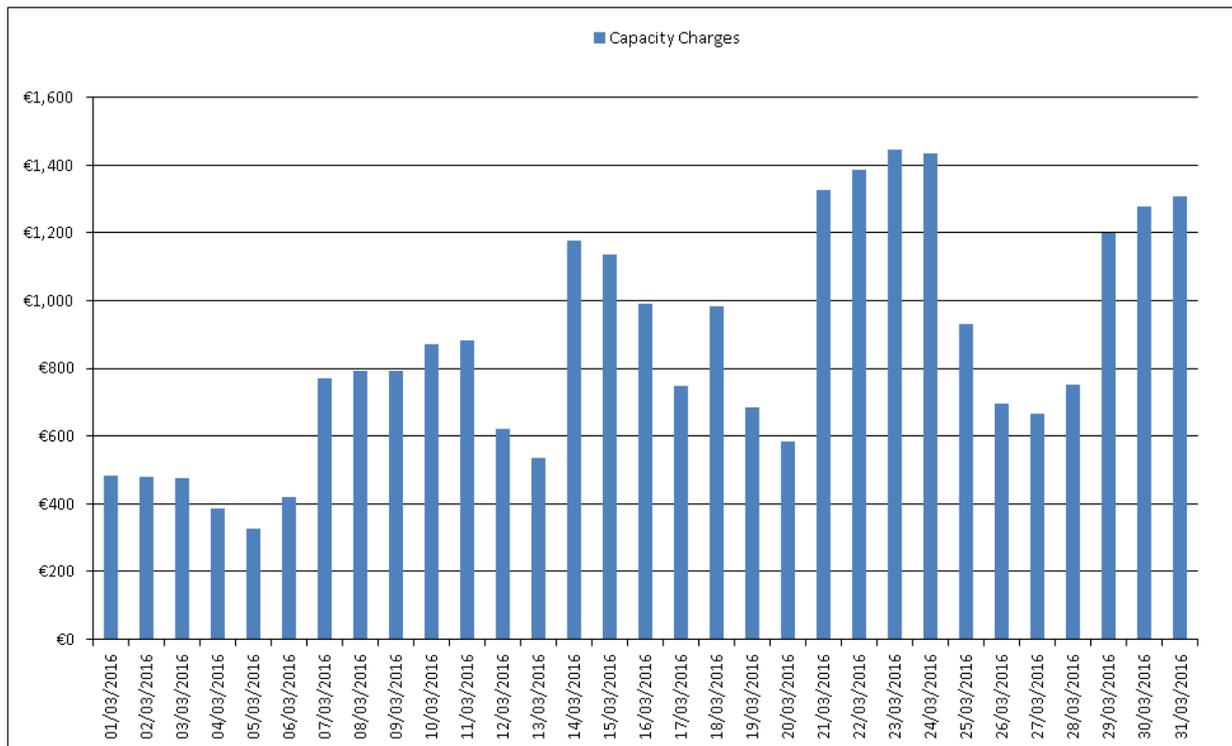


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – March 2016

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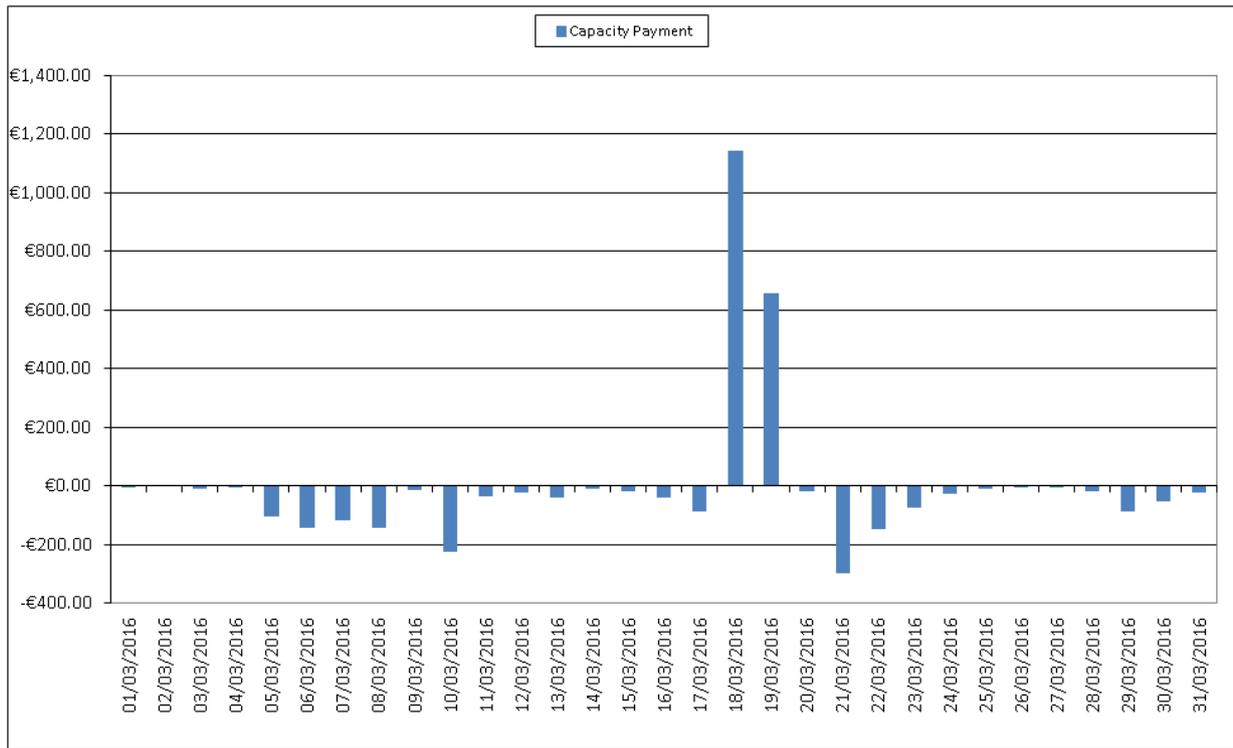


Figure 15 – All Generation Monetary Change for Capacity Resettlement – March 2016

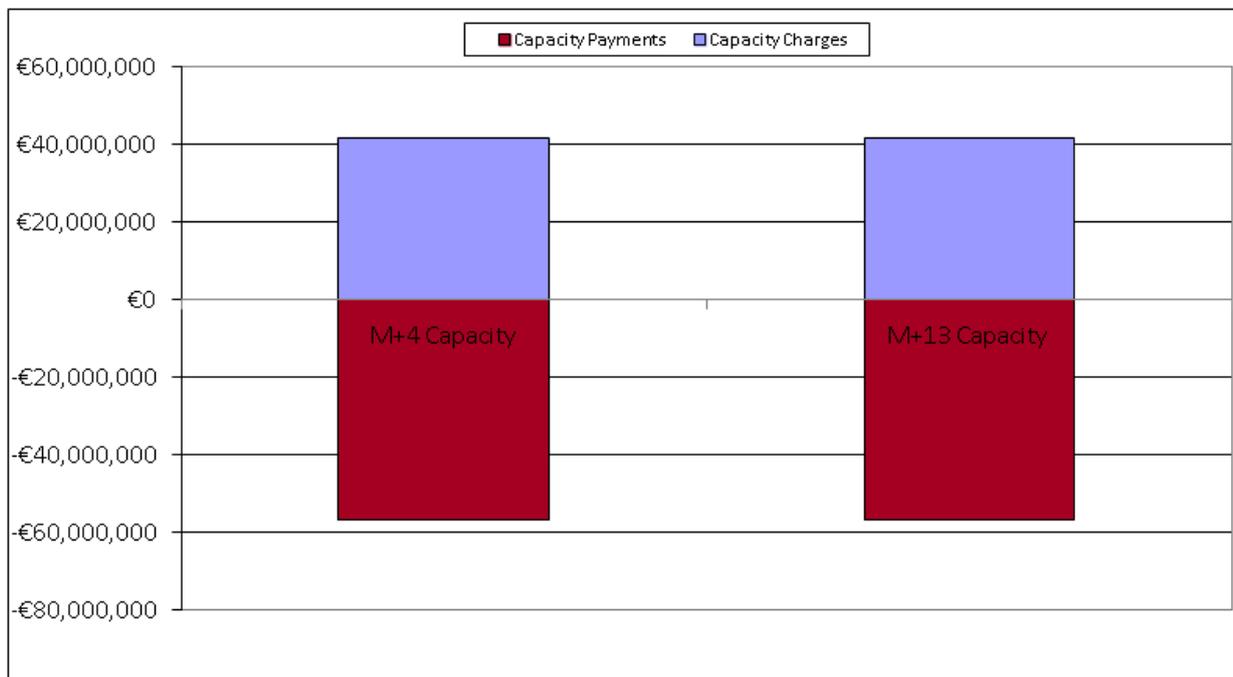


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – March 2016

Helpdesk Call Statistics

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

Market Helpdesk Report: 01/04/17 to 30/04/17

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	142	130	12	153	0.99	145
Important	0	0	0	0	0.00	0
Urgent	3	3	0	3	2.58	0
Settlement	9	8	1	10	4.08	10
Credit	0	0	0	0	0.00	0
Dispute	0	0	0	0	0.00	0
Data	0	0	0	0	0.00	0
Total/Average	154	141	13	166	1.53	155

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of April 2017.
- Resolved in the Period refers to queries resolved within April 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 April 2017.
- Not Resolved refers to queries raised but not resolved within April 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 1.38 working days from 2.40 in March 2017 to 1.02 working days in April 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 April 2017 with regard to formal Settlement Queries.

Disputes and Queries

5.1.1 Disputes

No Dispute was raised during the month of April 2017.

5.1.2 Data Queries

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

5.1.3 Settlement Queries

There were nine formal Settlement queries raised in April 2017. Seven queries were upheld and have been resolved.

Topic	Number Of Queries
Availability	1
Dispatch Instructions	1
SO Trades	2
Meter Generation	3

Table 11 – Upheld Settlement Queries by Topic

- One query relating to Availability was raised. No Material Impact on upheld query.
- One query relating to Dispatch Instructions was raised. This has been deemed to be of Low Materiality and will be corrected within M+13 Resettlement.
- Two queries relating to SO Trades were raised. These were deemed to be of Low Materiality and will be corrected within M+4 Resettlement.
- Three queries relating to Meter Generation were raised. These were deemed to be of Low materiality and will be corrected within M+13 Resettlement

Unresolved Queries

There is one unresolved settlement query as of the 12th May 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, 66.12% of data used was submitted by Participants through the normal Bid-Offer process. 33.88% 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 April 2017.

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

There was a delay to the publication of WD1 MIUNs for Trade Date 13/04/2017.

6.3.2 System Errors

There were no Market Application defects found in April 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.

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

1.4.1 MSP Postings April 2017

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	30-30	0	0	0
Post EA1	30-30	0	0	0
Post EA2	30-30	0	0	0
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	100%	0%	0%	0%
Post EA2	100%	0%	0%	0%
Post WD1	100%	0%	0%	0%

Process	On Time	< 1 hr late	> 1 hr late	Not done
Post EP1	100%	0%	0%	0%
Post EP2	100%	0%	0%	0%

Table 13 - Operational Timings (% on time)

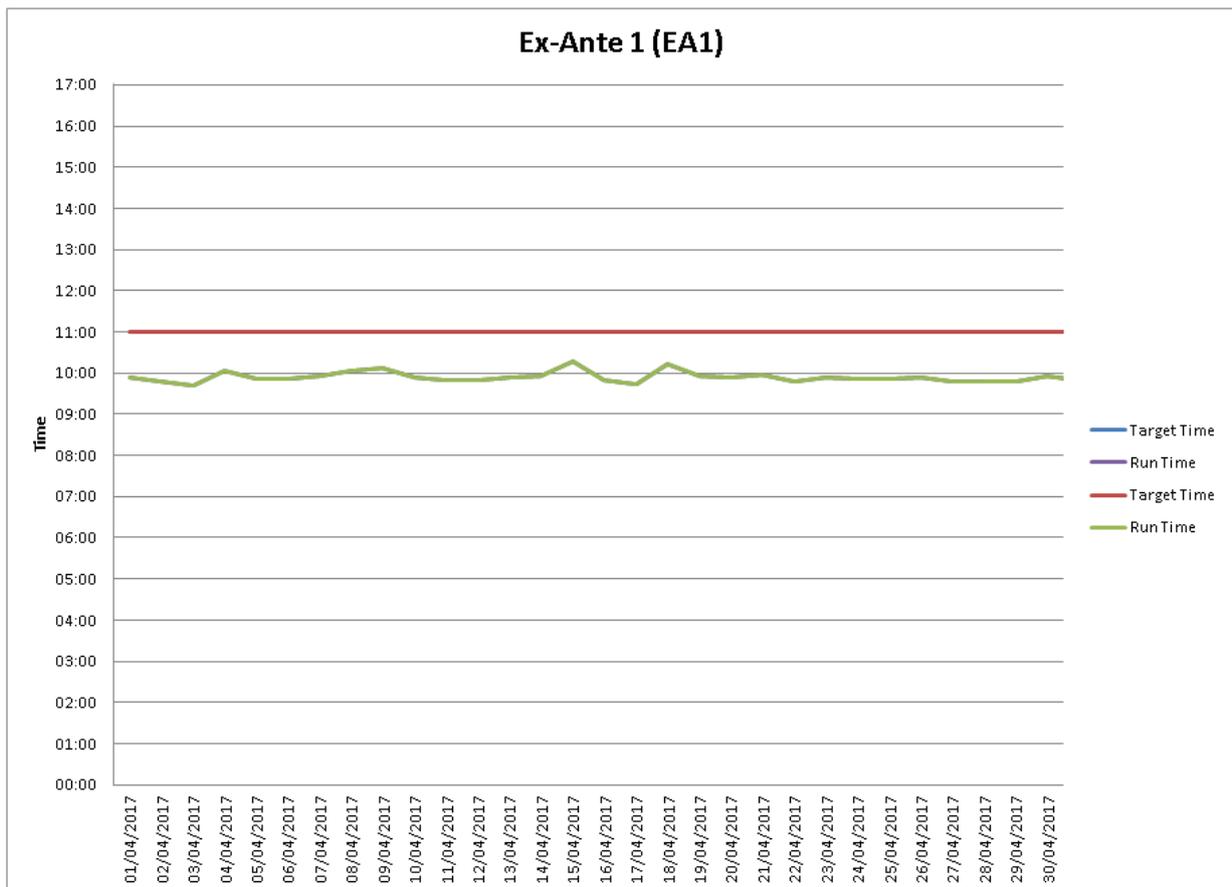


Figure 17 – Ex-Ante 1

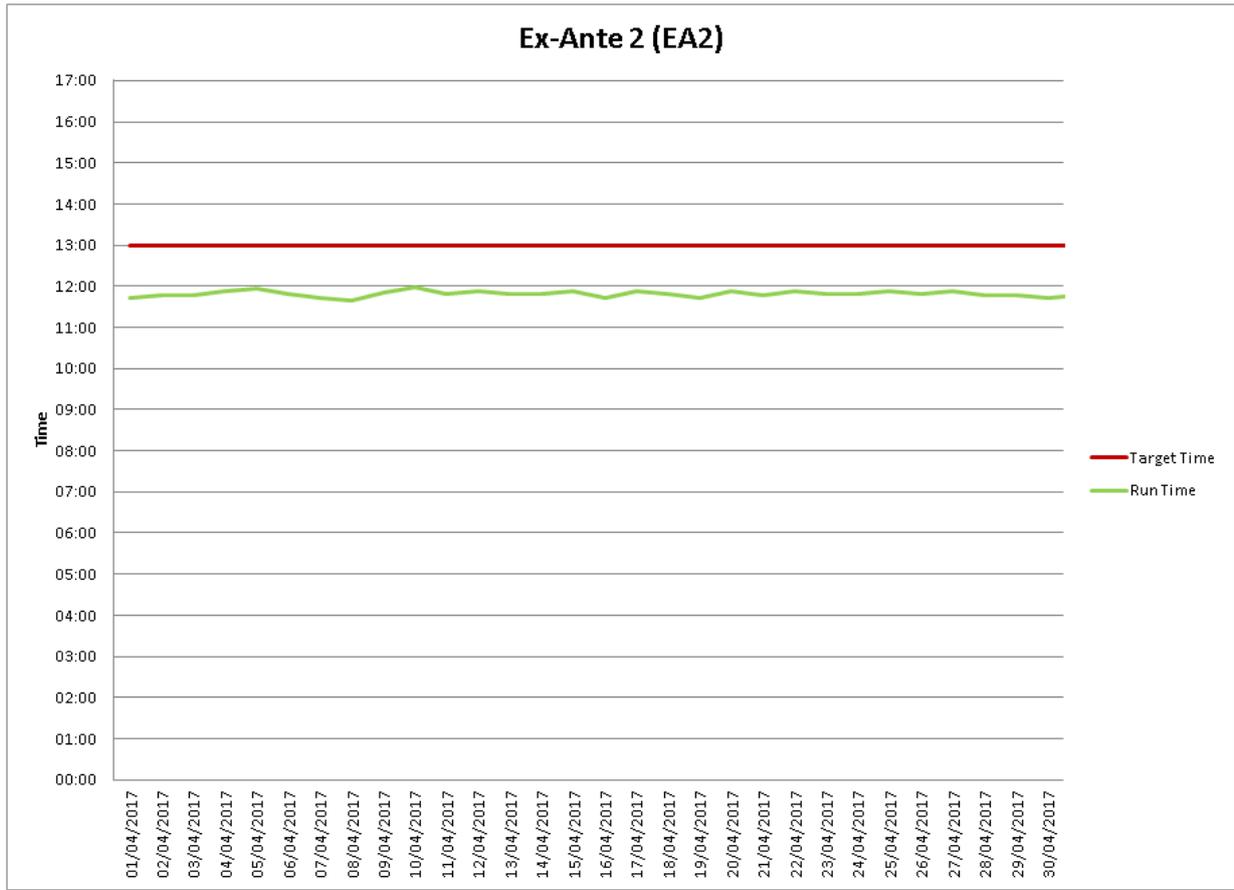


Figure 18 – Ex-Ante 2

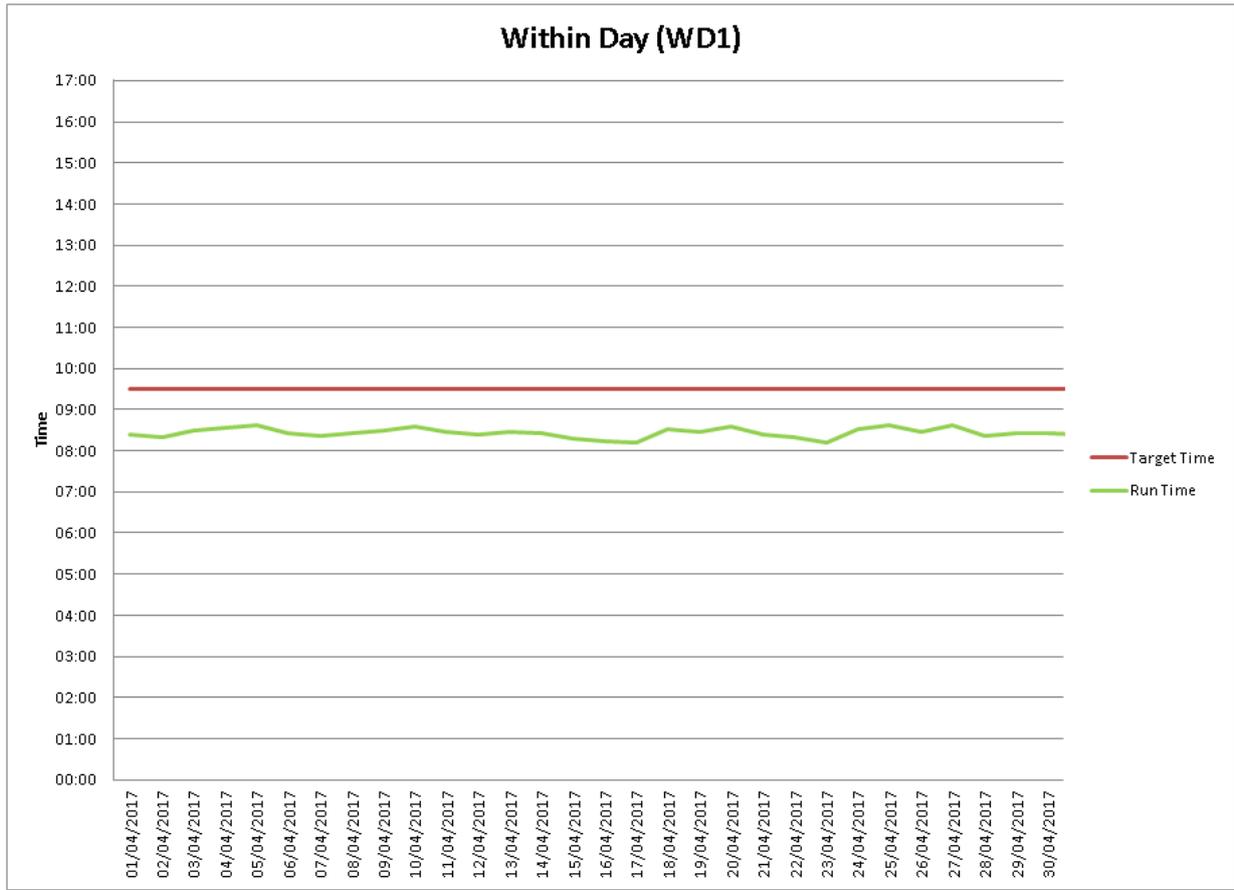


Figure 19 – Within Day 1

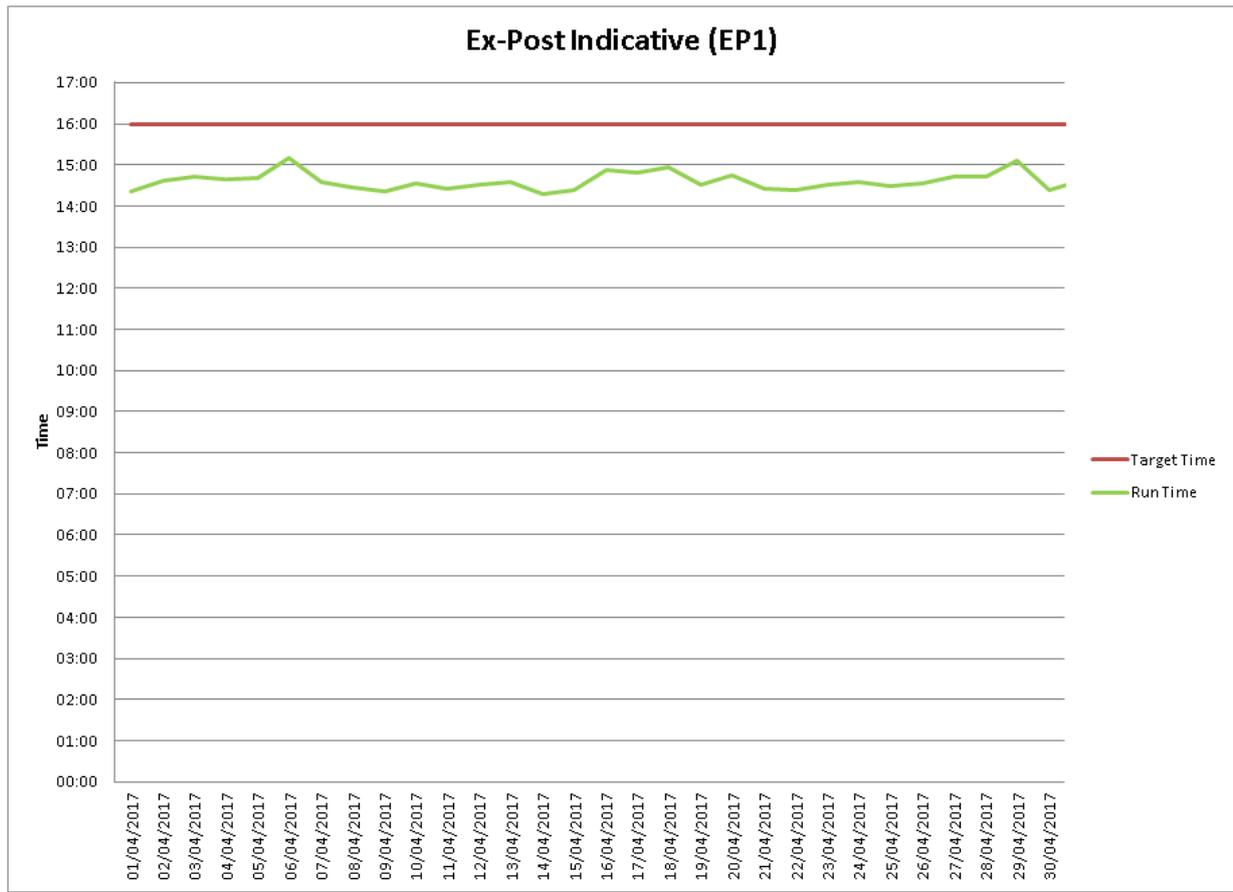


Figure 20 - Ex-Post Indicative

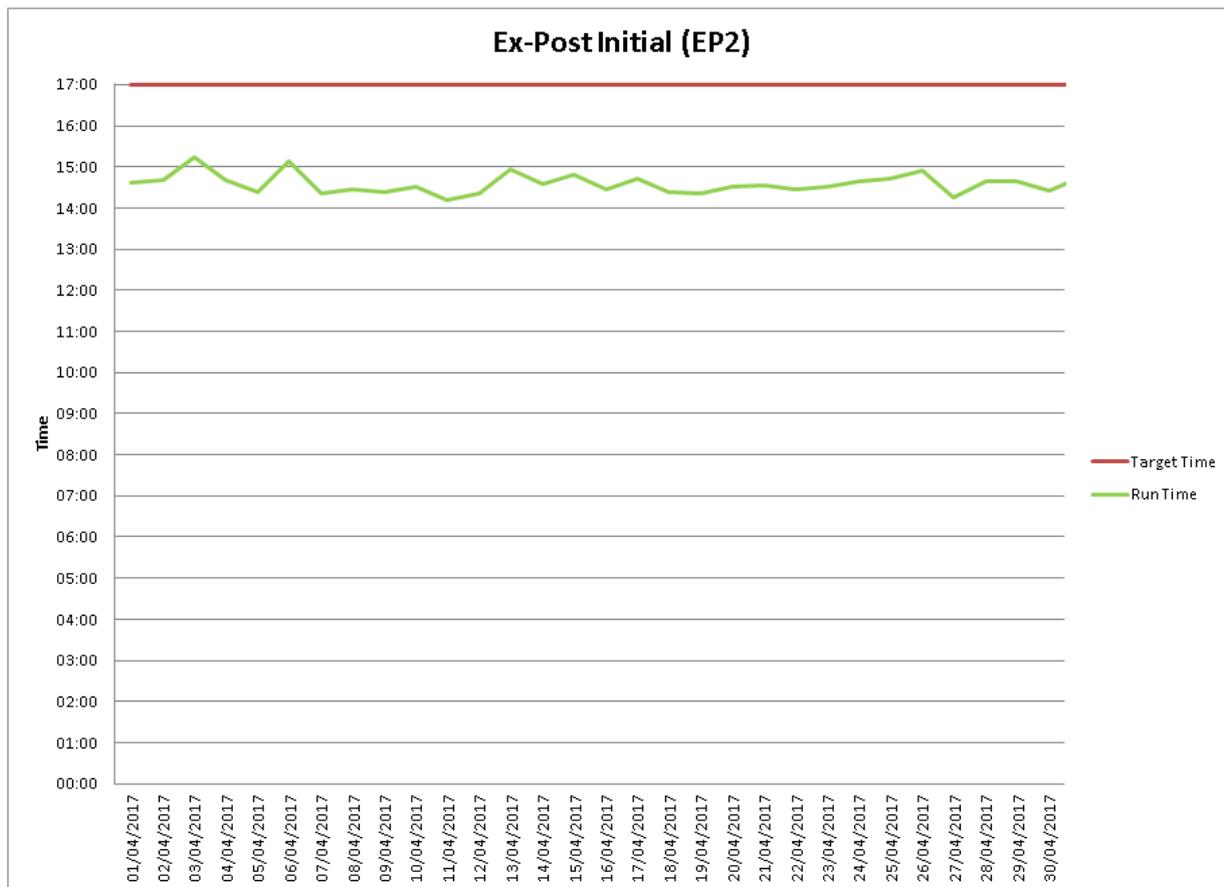


Figure 21 - Ex-Post Initial

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 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 April 2017, there were 6 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 April 2017

The publication timings for Settlement runs are provided below.

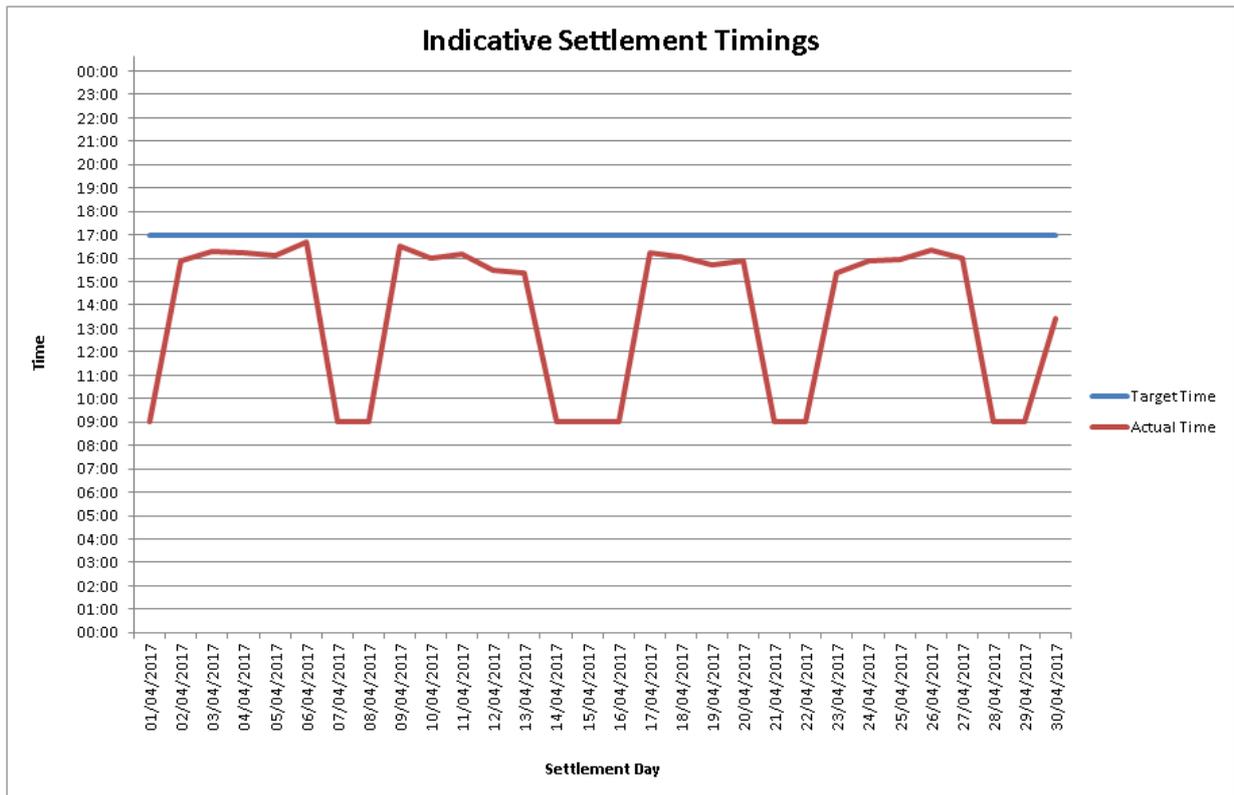


Figure 22 - Indicative Settlement Postings

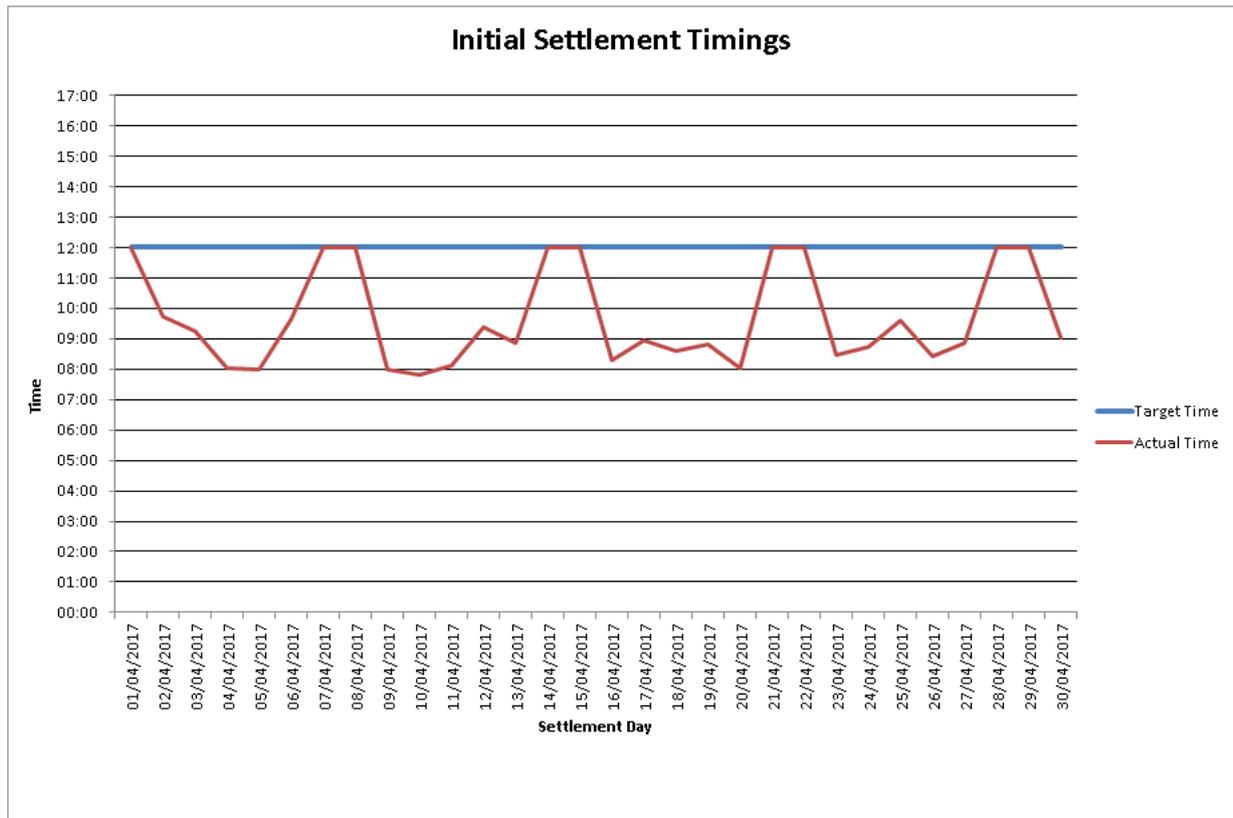


Figure 23 - Initial Settlement Postings

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

6.5.1 – No deployments in April 2017

Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

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

7.3 Communications or Systems Failures

There were no Communications Failures in April 2017

7.4 Denial of Service Attacks

There was no Denial of Service Attacks during April 2017.

7.5 Submission of Parameters to RAs for Approval

There has been no requirement for submission of parameters in April 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
13/04/2017	EP1	Timing	EirGrid MDP	File Submission	The Eirgrid Meter Data files for Trading Day 12/04/2017 were not received by the submission deadline of 14:00.	Eirgrid experienced an operational issue which resulted in a delay to the submission of this files.	The file was received successfully from Eirgrid at 14:06.	Minor

Table 14 – Trading and Settlement Code Breaches – Data Providers

Market Participant

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
05/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Capacity M+4 Nov 2016 and on a Capacity M+13 Feb 2016 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Energy Week 48 2016 M+4 and on a Energy Week 9 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
05/04/2017	Money In	Timing	Participant	Payment Default	Shell Energy Europe Ltd (PT_500087) defaulted on a Capacity M+13 Feb 2016 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
07/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 48 2016 M+4 and on a VMOC Week 9 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
12/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 49 2016 M+4 and Week 10 2016 M+13 on an Energy Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a FMOC March 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 49 2016 M+4 and on a VMOC Week 10 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/04/2017	Money In	Timing	Participant	Payment Default	Activation Energy DSU LTD (PT_500098) defaulted on a FMOC March 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/04/2017	Money In	Timing	Participant	Payment Default	Activation Energy DSU LTD (PT_500097) defaulted on a FMOC March 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
18/04/2017	Money In	Timing	Participant	Payment	Quinn Windfarm(PT_400049) defaulted on a FMOC March 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
21/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 50 2016 M+4 Invoice & Week 11 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
25/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an VMOC Week 50 2016 M+4 Invoice & Week 11 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
26/04/2017	Money In	Timing	Participant	Payment Default	Generator – DWL Energy Supply Limited (PT_400165) defaulted on an Energy Week 12 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
26/04/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 12 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major

Table 15 – Trading and Settlement Code Breaches – Market Participants

SEMO - Pricing and Scheduling

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
13/04/2017	WD1	Timing	SEMO	System	There was a delay to the publication of WD1 Modified Interconnector Unit Nominations (MILUNs) for Trading Day 13/04/2017.	There was an issue with the SmartFTP application that transfers the files over to the calculator.When the WD1 run was DSP'd for 13/04/2017 the files were not transferred to the calculator. The root cause of this failure was disk space on a server.	WD1 MILUNs for Trading Day 13/04/2017 were published at 09:45am.	Minor

Table 16 - Trading and Settlement Code Breaches – Pricing and Scheduling

SEMO – Settlements

There were no issues to report in April 2017.

SEMO - Funds Transfer

There were no issues to report in April 2017.

SEMO - Credit Management

There were no issues to report in April 2017.

SEMO – Other

There were no issues to report in April 2017.

Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Availability	<p>It was brought to our attention that units B31 (GU_500130), B32 (GU_500131) & B10 (GU_500140) were not declared correctly whilst under market test on the above dates. I have since updated their EDIL declarations to match their dispatch instructions.</p> <p>Date B31 B32 B10 21/03/2017 On Market Test On Market Test 22/03/2017 On Market Test 23/03/2017 On Market Test 24/03/2017 On Market Test 27/03/2017 On Market Test On Market Test</p> <p>Let me know when I can resubmit the feeds for these dates.</p>	TSO_SONI	2017-04-06	2017-04-10	Settlement
Dispatch Instructions	A LOCL and LCLO were incorrectly issued at the same time (14/12/2016 03:06) for GU_401060. The LOCL should have been issued at this time and the LCLO issued at 03:07.	TSO_EIRGRID	2017-04-10	2017-04-19	Settlement
Metered Generation	Updated meter data is available for Ballylumford B5 (GU_500281) for 19/3/2016. Please let me know when to resend the feed in order to be included in M+13 resettlement. Please see attachment for meter data comparison.	TSO_SONI	2017-04-11	2017-04-11	Settlement
SO-SO Trades	Due to a delay in receiving correct costs, Expost SO Trade costs require updating for trade date 13/03/17	TSO_SONI	2017-04-11	2017-04-13	Settlement
SO-SO Trades	Late trade prices were received from Statkraft for EMIIC for Trade Date 13.03.2017. The periods affected are from (period ending) 01:00 until (period ending) 06:00. Please see attached excel workbook which details the amendments.	TSO_EIRGRID	2017-04-11	2017-04-13	Settlement
Meter Generation	Updated meter data is available for Ballylumford B5 (GU_500281) for 18/3/2016. Please let me know when to resend the feed in order to be included in M+13 resettlement. Please see attachment for meter data comparison.	TSO_SONI	2017-04-12	2017-04-12	Settlement
Meter Generation	Updated meter data is available for Empower AGU (GU_501230) for 22/3/2016. Please let me know when to resend the feed in order to be included in M+13 resettlement. The update is for one value only – period starting 15:00. The D+3 submission contained 0MW for this period.	TSO_SONI	2017-04-19	2017-04-20	Settlement
Dispatch Instructions	<p>Powerhouse Generation did not receive payment for a period of De-Sync. See details below</p> <p>Powerhouse Generation received a de-Sync notice at 21:00 hrs with an Effective time of 21:10 on the 18th March 2017 for 4 MW. This was from the TSO Control Engineer John O'Higgins. On the 19th Powerhouse were Sync'd on at 10:40 with an Effective time of 10:50. There was a Payment of £60.10 for hour 11 (2nd part) on 19th</p> <p>SEM-O responded.</p> <p>From Hour 23 on the 18/03/2017 to Hour 10 on the 19/03/2017, you will see that the unit has neither been scheduled within the Market, nor has it been Dispatched by the TSO, therefore no constraint payment would be calculated within these trading periods)</p>	Powerhouse Generation	2017-04-21		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 April 2017.

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			EPI Postings			EP2 Postings		
	Target	Actual	Target	Actual	Actual	Target	Actual	Actual	Target	Actual	Actual	Target	Actual	Actual
01/04/2017	11:00	09:53	13:00	11:43	09:30	08:23	16:00	14:22	17:00	14:37				
02/04/2017	11:00	09:48	13:00	11:46	09:30	08:20	16:00	14:37	17:00	14:40				
03/04/2017	11:00	09:42	13:00	11:47	09:30	08:30	16:00	14:43	17:00	15:15				
04/04/2017	11:00	10:03	13:00	11:52	09:30	08:33	16:00	14:39	17:00	14:41				
05/04/2017	11:00	09:51	13:00	11:56	09:30	08:37	16:00	14:41	17:00	14:23				
06/04/2017	11:00	09:52	13:00	11:48	09:30	08:25	16:00	15:10	17:00	15:08				
07/04/2017	11:00	09:56	13:00	11:43	09:30	08:22	16:00	14:36	17:00	14:21				
08/04/2017	11:00	10:03	13:00	11:40	09:30	08:25	16:00	14:28	17:00	14:28				
09/04/2017	11:00	10:07	13:00	11:51	09:30	08:29	16:00	14:21	17:00	14:24				
10/04/2017	11:00	09:53	13:00	11:59	09:30	08:35	16:00	14:33	17:00	14:31				
11/04/2017	11:00	09:49	13:00	11:49	09:30	08:28	16:00	14:25	17:00	14:12				
12/04/2017	11:00	09:50	13:00	11:52	09:30	08:24	16:00	14:31	17:00	14:21				
13/04/2017	11:00	09:53	13:00	11:48	09:30	08:27	16:00	14:36	17:00	14:56				
14/04/2017	11:00	09:55	13:00	11:48	09:30	08:25	16:00	14:17	17:00	14:35				
15/04/2017	11:00	10:18	13:00	11:53	09:30	08:18	16:00	14:23	17:00	14:48				
16/04/2017	11:00	09:49	13:00	11:44	09:30	08:14	16:00	14:52	17:00	14:27				
17/04/2017	11:00	09:43	13:00	11:53	09:30	08:12	16:00	14:48	17:00	14:42				
18/04/2017	11:00	10:14	13:00	11:48	09:30	08:32	16:00	14:57	17:00	14:24				
19/04/2017	11:00	09:56	13:00	11:44	09:30	08:27	16:00	14:31	17:00	14:21				
20/04/2017	11:00	09:54	13:00	11:53	09:30	08:35	16:00	14:44	17:00	14:31				
21/04/2017	11:00	09:58	13:00	11:47	09:30	08:24	16:00	14:26	17:00	14:34				
22/04/2017	11:00	09:48	13:00	11:53	09:30	08:20	16:00	14:23	17:00	14:28				
23/04/2017	11:00	09:54	13:00	11:48	09:30	08:12	16:00	14:32	17:00	14:32				
24/04/2017	11:00	09:52	13:00	11:48	09:30	08:32	16:00	14:35	17:00	14:38				
25/04/2017	11:00	09:52	13:00	11:52	09:30	08:38	16:00	14:30	17:00	14:42				
26/04/2017	11:00	09:53	13:00	11:48	09:30	08:27	16:00	14:34	17:00	14:55				
27/04/2017	11:00	09:47	13:00	11:52	09:30	08:38	16:00	14:42	17:00	14:16				
28/04/2017	11:00	09:48	13:00	11:46	09:30	08:22	16:00	14:43	17:00	14:39				
29/04/2017	11:00	09:47	13:00	11:47	09:30	08:26	16:00	15:07	17:00	14:38				
30/04/2017	11:00	09:55	13:00	11:44	09:30	08:26	16:00	14:24	17:00	14:25				

Table 19 – MSP Runs

Settlement Runs

Indicative				Initial			
Trading	Actual	Target	Actual	Trading	Actual	Target	Actual
Day	Date	Time	Time	Day	Date	Time	Time
01/04/2017	03/04/2017	17:00	09:00	01/04/2017	07/04/2017	12:00	12:00
02/04/2017	03/04/2017	17:00	15:53	02/04/2017	07/04/2017	12:00	09:43
03/04/2017	04/04/2017	17:00	16:19	03/04/2017	10/04/2017	12:00	09:16
04/04/2017	05/04/2017	17:00	16:14	04/04/2017	11/04/2017	12:00	08:02
05/04/2017	06/04/2017	17:00	16:06	05/04/2017	12/04/2017	12:00	07:59
06/04/2017	07/04/2017	17:00	16:42	06/04/2017	13/04/2017	12:00	09:38
07/04/2017	10/04/2017	17:00	09:00	07/04/2017	14/04/2017	12:00	12:00
08/04/2017	10/04/2017	17:00	09:00	08/04/2017	14/04/2017	12:00	12:00
09/04/2017	10/04/2017	17:00	16:32	09/04/2017	14/04/2017	12:00	08:00
10/04/2017	11/04/2017	17:00	16:00	10/04/2017	18/04/2017	12:00	07:50
11/04/2017	12/04/2017	17:00	16:10	11/04/2017	18/04/2017	12:00	08:08
12/04/2017	13/04/2017	17:00	15:30	12/04/2017	19/04/2017	12:00	09:22
13/04/2017	14/04/2017	17:00	15:24	13/04/2017	20/04/2017	12:00	08:51
14/04/2017	18/04/2017	17:00	09:00	14/04/2017	21/04/2017	12:00	12:00
15/04/2017	18/04/2017	17:00	09:00	15/04/2017	21/04/2017	12:00	12:00
16/04/2017	18/04/2017	17:00	09:00	16/04/2017	21/04/2017	12:00	08:18
17/04/2017	18/04/2017	17:00	16:14	17/04/2017	24/04/2017	12:00	08:57
18/04/2017	19/04/2017	17:00	16:05	18/04/2017	25/04/2017	12:00	08:36
19/04/2017	20/04/2017	17:00	15:44	19/04/2017	26/04/2017	12:00	08:50
20/04/2017	21/04/2017	17:00	15:53	20/04/2017	27/04/2017	12:00	08:01
21/04/2017	24/04/2017	17:00	09:00	21/04/2017	28/04/2017	12:00	12:00
22/04/2017	24/04/2017	17:00	09:00	22/04/2017	28/04/2017	12:00	12:00
23/04/2017	24/04/2017	17:00	15:23	23/04/2017	28/04/2017	12:00	08:28
24/04/2017	25/04/2017	17:00	15:55	24/04/2017	02/05/2017	12:00	08:43
25/04/2017	26/04/2017	17:00	15:56	25/04/2017	02/05/2017	12:00	09:37
26/04/2017	27/04/2017	17:00	16:21	26/04/2017	03/05/2017	12:00	08:25
27/04/2017	28/04/2017	17:00	16:00	27/04/2017	04/05/2017	12:00	08:52
28/04/2017	02/05/2017	17:00	09:00	28/04/2017	05/05/2017	12:00	12:00
29/04/2017	02/05/2017	17:00	09:00	29/04/2017	05/05/2017	12:00	12:00
30/04/2017	02/05/2017	17:00	13:25	30/04/2017	05/05/2017	12:00	09:02

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

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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
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

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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
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
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

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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
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
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

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

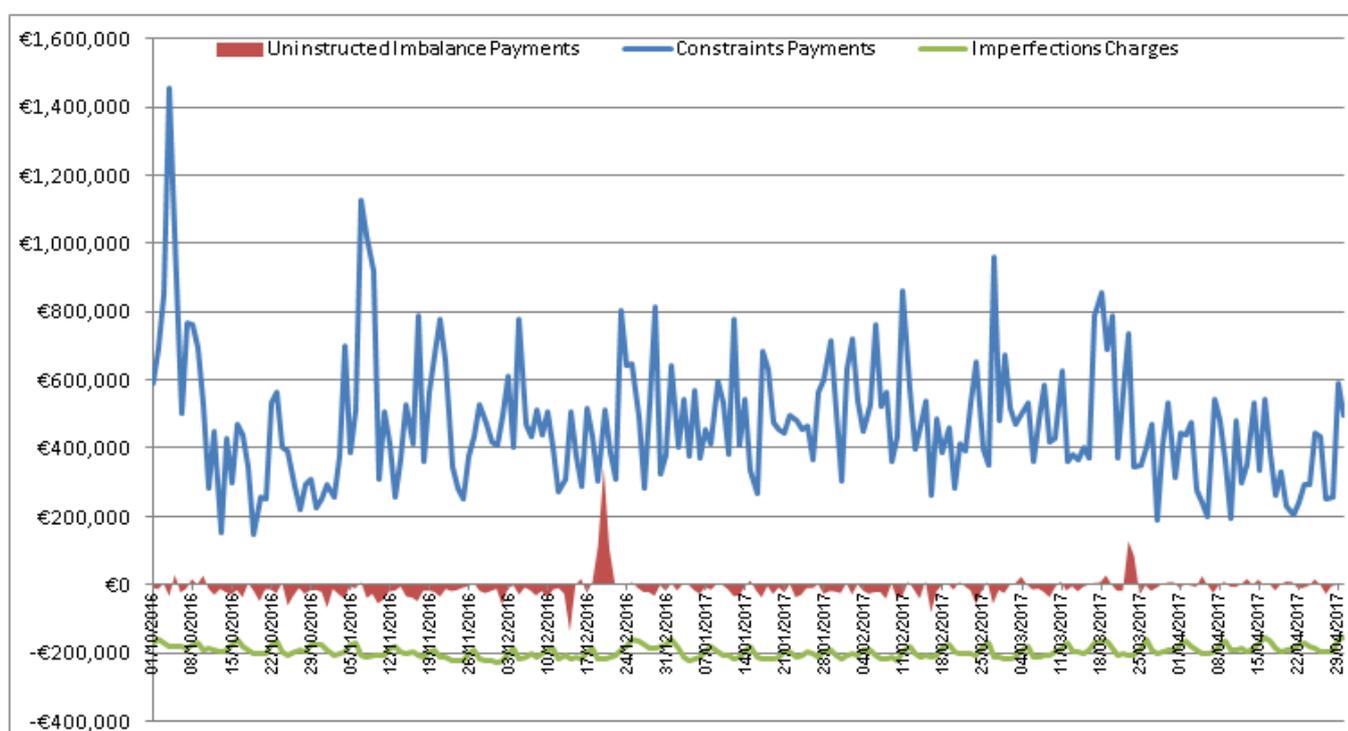


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
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

Table 22 - Make Whole Payments

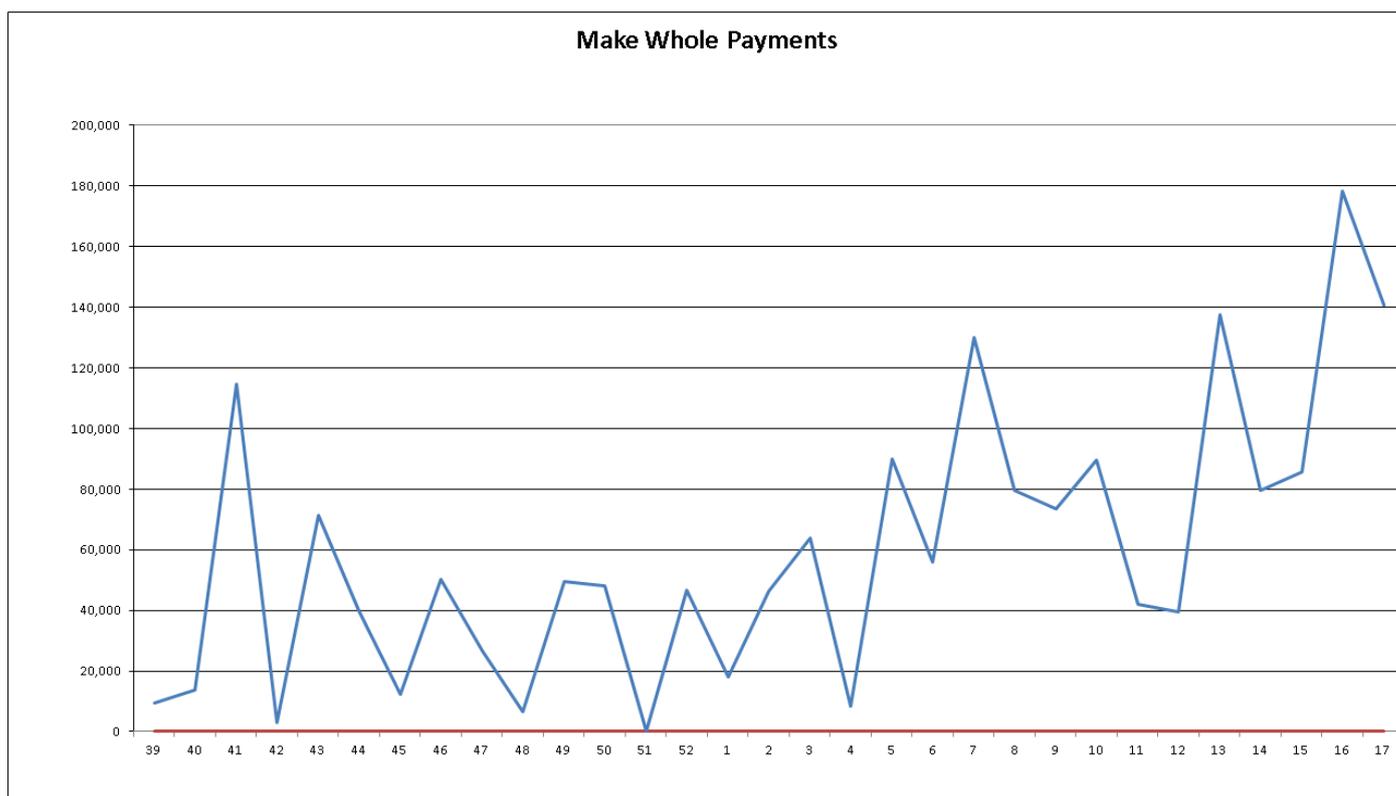


Figure 25 - Make Whole Payments

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

Table 23 - Testing Charges

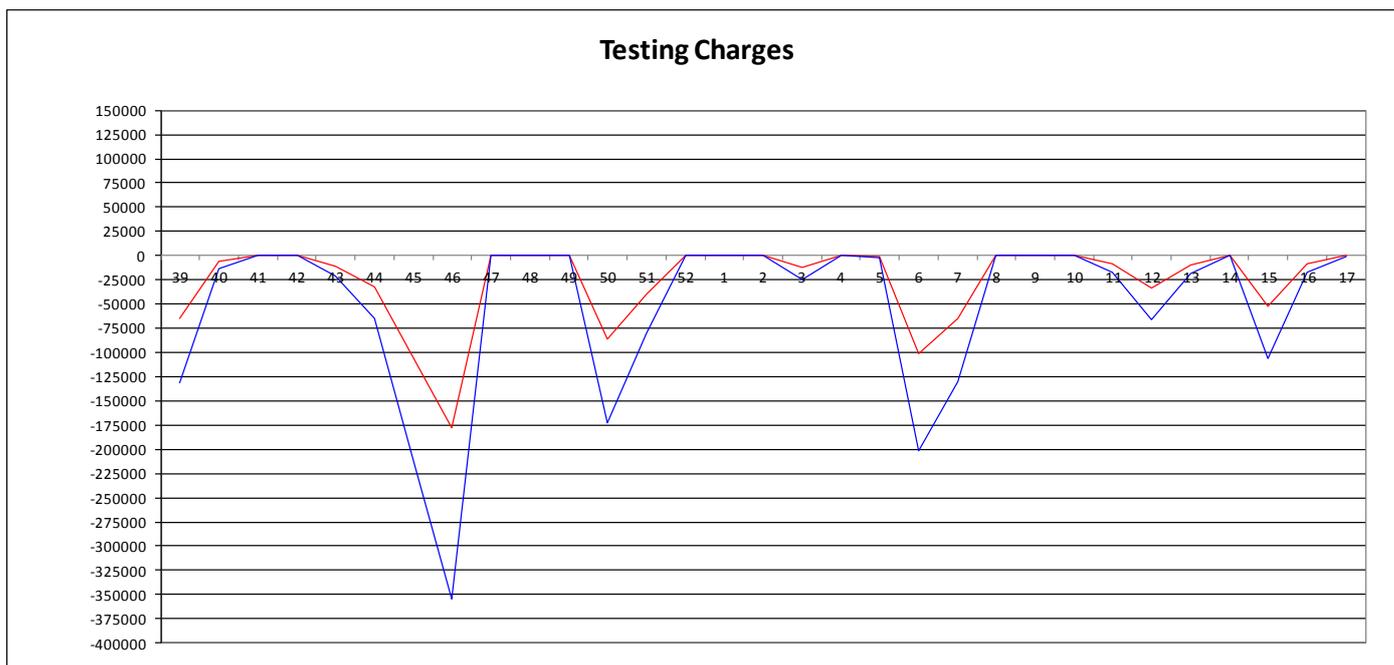


Figure 26 - Testing Charges

Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during April 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_400138	DSU_401590	30			30
PT_400090	DSU_401610	30			30
PT_400124	DSU_401880	13			13
PT_400133	DSU_401910	20			20
PT_400116	DSU_401400	30			30
PT_400090	DSU_401620	30			30
PT_500067	DSU_501380	6			6
PT_400116	DSU_401870	11			11
PT_400106	DSU_401330	32			32
PT_400090	DSU_401270	30			30
PT_400133	DSU_401530	19			19
PT_400124	DSU_401490	22			22
PT_400024	GU_400120	30			30
PT_400024	GU_400121	30			30
PT_400030	GU_400180	34			34
PT_400030	GU_400181	35			35
PT_400030	GU_400182	35			35
PT_400030	GU_400183	35			35
PT_400030	GU_400200	36			36
PT_400030	GU_400201	37			37
PT_400030	GU_400202	35			35
PT_400030	GU_400203	38			38
PT_400030	GU_400210	35			35
PT_400030	GU_400211	34			34
PT_400030	GU_400220	34			34
PT_400030	GU_400221	34			34
PT_400030	GU_400240	34			34
PT_400030	GU_400250	34			34
PT_400030	GU_400251	35			35
PT_400030	GU_400252	36			36
PT_400030	GU_400260	35			35
PT_400030	GU_400270	34			34
PT_400030	GU_400271	36			36
PT_400030	GU_400272	35			35
PT_400030	GU_400280	34			34
PT_400030	GU_400281	35			35
PT_400030	GU_400290	35			35
PT_400030	GU_400300	35			35
PT_400030	GU_400311	35			35
PT_400030	GU_400324	35			35
PT_400030	GU_400325	35			35
PT_400030	GU_400360	34			34

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PT_400030	GU_400361	35		35
PT_400030	GU_400362	34		34
PT_400030	GU_400363	35		35
PT_400030	GU_400370	35		35
PT_400030	GU_400850	35		35
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	52		52
PT_400037	GU_400500	31		31
PT_400041	GU_400530	69		69
PT_400044	GU_400540	52		52
PT_400050	GU_401920	15		15
PT_400050	GU_401930	26		26
PT_400054	GU_400620	30		30
PT_400055	GU_400630	30		30
PT_400064	GU_400750	30		30
PT_400064	GU_400751	30		30
PT_400064	GU_400752	30		30
PT_400064	GU_400753	30		30
PT_400064	GU_400762	30		30
PT_400064	GU_400770	30		30
PT_400064	GU_400771	30		30
PT_400064	GU_400780	30		30
PT_400064	GU_400781	30		30
PT_400075	GU_400930	38		38
PT_400077	GU_400950	30		30
PT_400078	GU_401010	31		31
PT_400078	GU_401011	31		31
PT_400087	GU_401230	1		1
PT_400172	GU_401860	31		31
PT_500021	GU_501500	6		6
PT_500021	GU_501520	6		6
PT_500024	GU_500040	33		33
PT_500024	GU_500041	29		29
PT_500027	GU_500130	86		86
PT_500027	GU_500131	86		86
PT_500027	GU_500140	84		84
PT_500032	GU_501530	6		6
PT_500034	GU_501350	30		30
PT_500040	GU_500281	59		59
PT_500040	GU_500282	59		59
PT_500040	GU_500283	30		30
PT_500040	GU_500284	30		30
PT_500045	GU_500820	30		30
PT_500045	GU_500821	30		30
PT_500045	GU_500822	30		30
PT_500045	GU_500823	30		30
PT_500045	GU_500824	30		30
PT_500045	GU_500825	30		30
PT_500048	GU_500904	45		45

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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	30		30
PT_500066	GU_501210	30		30
PT_500083	I_NIMOYLE	90		90
PT_400021	I_ROIEWIC	22		22
PT_500075	I_NIMOYLE	89		89
PT_500024	I_NIMOYLE	30		30
PT_500021	I_NIMOYLE	22		22
PT_400163	I_ROIEWIC	51		51
PT_500031	I_NIMOYLE	30		30
PT_400157	I_ROIEWIC	17		17
PT_500069	I_NIMOYLE	90		90
PT_500037	I_NIMOYLE	33		33
PT_400096	I_ROIEWIC	50		50
PT_500112	I_NIMOYLE	15		15
PT_400168	I_ROIEWIC	27		27
PT_400136	I_ROIEWIC	48		48
PT_400115	I_ROIEWIC	30		30
PT_500081	I_NIMOYLE	30		30
PT_400037	I_ROIEWIC	18		18
PT_400108	I_ROIEWIC	34		34
PT_500070	I_NIMOYLE	60		60
PT_400170	I_ROIEWIC	34		34
PT_400171	I_ROIEWIC	15		15
PT_400164	I_ROIEWIC	6		6
PT_400030	I_ROIEWIC	18		18
PT_500092	I_NIMOYLE	35		35
PT_500085	I_NIMOYLE	22		22
PT_500088	I_NIMOYLE	50		50
PT_400099	I_ROIEWIC	18		18
PT_400124	DSU_401490		8	8
PT_400144	DSU_401660		30	30
PT_500064	DSU_501200		30	30
PT_500078	DSU_501330		30	30
PT_400090	DSU_401850		30	30
PT_400090	DSU_401800		30	30
PT_500099	DSU_501460		30	30
PT_400111	DSU_401390		30	30
PT_400106	DSU_401330		1	1
PT_500067	DSU_501380		25	25
PT_400116	DSU_401870		20	20
PT_400133	DSU_401530		12	12
PT_500108	DSU_501560		30	30
PT_500098	DSU_501450		30	30
PT_400124	DSU_401880		18	18
PT_400021	GU_400021		30	30
PT_400021	GU_400050		30	30
PT_400021	GU_400060		30	30
PT_400021	GU_400070		30	30
PT_400021	GU_400080		30	30

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PT_400021	GU_400591			30	30
PT_400021	GU_400600			30	30
PT_400021	GU_400910			30	30
PT_400021	GU_400920			30	30
PT_400021	GU_401080			30	30
PT_400021	GU_401380			30	30
PT_400021	GU_401640			30	30
PT_400025	GU_400130			30	30
PT_400037	GU_400500			1	1
PT_400038	GU_400550			30	30
PT_400050	GU_400650			30	30
PT_400050	GU_400660			30	30
PT_400050	GU_401000			30	30
PT_400050	GU_401060			30	30
PT_400050	GU_401150			30	30
PT_400050	GU_401240			30	30
PT_400050	GU_401250			30	30
PT_400050	GU_401280			30	30
PT_400050	GU_401290			30	30
PT_400050	GU_401360			30	30
PT_400050	GU_401790			30	30
PT_400050	GU_401920			16	16
PT_400050	GU_401930			5	5
PT_400062	GU_400730			30	30
PT_400062	GU_400731			30	30
PT_400062	GU_400840			30	30
PT_400066	GU_401540			30	30
PT_400066	GU_401820			30	30
PT_400082	GU_401100			30	30
PT_400087	GU_401230			29	29
PT_400148	GU_401690			30	30
PT_400150	GU_401700			30	30
PT_400151	GU_401770			30	30
PT_400151	GU_401780			30	30
PT_400152	GU_401710			30	30
PT_400152	GU_401720			30	30
PT_400152	GU_401730			30	30
PT_400152	GU_401740			30	30
PT_400152	GU_401750			30	30
PT_400152	GU_401760			30	30
PT_400162	GU_401830			30	30
PT_400197	GU_402020			30	30
PT_500021	GU_500010			30	30
PT_500021	GU_500740			30	30
PT_500021	GU_501160			30	30
PT_500024	GU_500041			1	1
PT_500032	GU_500211			30	30
PT_500032	GU_501120			30	30
PT_500032	GU_501280			30	30
PT_500032	GU_501290			30	30
PT_500032	GU_501300			30	30
PT_500032	GU_501400			30	30
PT_500039	GU_500270			30	30

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PT_500044	GU_500720			30	30
PT_500047	GU_500790			30	30
PT_500061	GU_501170			30	30
PT_500062	GU_501180			30	30
PT_500073	GU_501230			30	30
PT_500074	GU_501250			30	30
PT_500089	GU_501360			30	30
	Total	4306	0	2206	6512
	Percentage	66.12%	0.00%	33.88%	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	£22,256,309.33	£1,235,987.38	£320,699.87	£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	24,034,599.78
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	£1,042.33	£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	£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
Jul-16	ROI	£57,935,825.17	£17,084,463.29	£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	£4,995,559.58	£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	£143,756.91	£161,777.77	£822.69	£56,371.33	£22,956.28	£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

Table 25 – 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	€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
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

Table 26 - 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
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
03/02/2017	4	€1,885,524.05	€0

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Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
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

Table 27 – 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 2016	-€373.17	€0
November 2016	-€395.27	€0
December 2016	-€400.31	€0

Invoice Month	SEM Balancing Costs	VAT Balancing Costs
January 2017	-€345.12	€0
February 2017	-€284.026	€0
March 2017	-€276.22	€0
April 2017	-€232.70	€0

Table 28 - Balancing Costs for Capacity Settlement

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

Appendix I: MSP Algorithms

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

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

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

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

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

Table 29 - MIP Algorithms

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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
30/11/2016	29/11/2016	EP1	€541.87	€270.18	MIP

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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

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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
20/03/2017	19/03/2017	EP1	€531.42	€420.26	MIP

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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

Table 30 - MIP Vs LR Peak Price Comparison