



Market Operator Monthly Report

July 2018

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Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of July 2018 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 July 2018, there were 2 late Settlement publication as per the Trading and Settlement Code.

During the month of July 2018, there was no late Credit Report publication as per the Trading and Settlement Code timelines.

There were 10 defaults by Participants during July 2018. The largest of these was a Capacity June 2018 Initial invoice for €31,848.49 which was remedied on the same day.

There were no Credit Cover Increase defaults during July 2018 as per the Trading and Settlement code timelines.

155 general queries were received in July 2018. During the same period 155 general queries were resolved.

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

Monthly Statistics

Trading and Settlement Code Breaches

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

Trading and Settlement Code Breaches			
Area		Major	Minor
Data Providers		-	2
Market Participants	Pricing & Scheduling	-	-
	Settlement	-	-
	Funds Transfer	10	-
	Credit Risk Management	2	-
SEMO	Pricing & Scheduling	-	-
	Settlement	-	1
	Funds Transfer	-	-
	Credit Risk Management	-	-
	Other	-	-
Total		12	3

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

One new Party joined the Market in July 2018

- PY_034046 Statkraft GmbH

There were no terminating parties in July 2018.

The below units went effective in the Market in July 2018.

- PT_500034_NIE Supply Generation - GU_501750 Cornavarrow
- PT_400234_Brookfield Renewable Supply 4 Limited - SU_400231 Brookfield Renewable Supply 4 Limited
- PT_400192_Pallas Energy Supply Limited - GU_401980 Clahane Wind Farm Extension
- PT_400193_Pallas Energy Supply Limited - SU_400203 Pallas Energy Supply Limited
- PT_500115_Energy Trading Ireland Limited - DSU_501600 ETD
- PT_500091_Energy Trading Ireland Limited - SU_500092 ETI (NI) TSSU4
- PT_500021_SSE Airtricity Energy Supply NI Ltd- GU_501730 Castlecraig Wind Farm
- PT_500034_NIE Supply Generation - GU_501740 Teiges Wind Farm
- PT_400021_SSE Airtricity Limited - GU_402220 Carrickallen

One unit de-registered from the Market in July 2018.

- PT_500046_Firmus Energy (Supply) Ltd - SU_500071 Firmus Energy Supply Unit

Suspension of Participants

No Suspension Orders were issued by the Market Operator in July 2018.

Financial Statistics

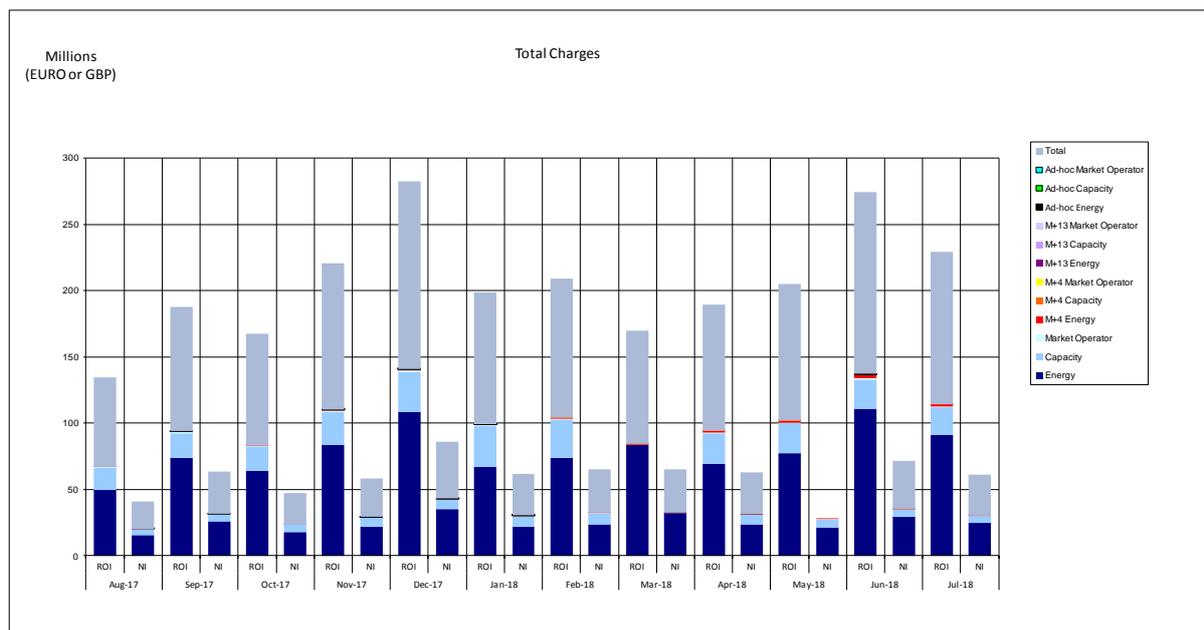


Figure 1 - Total Charges for Each Currency

Market	Jul-18	
	ROI	NI
Energy	£91,566,909	£24,824,845
Capacity	£20,553,253	£5,305,704
Market Operator	£732,984	£169,676
M+4 Energy	£1,335,293	£164,048
M+4 Capacity	£324,878	£26,544
M+4 Market Operator	£6,367	£654
M+13 Energy	£47,651	£124,634
M+13 Capacity	£89,704	£100,028
M+13 Market Operator	£431	£1,063
Ad-hoc Energy	£0	£0
Ad-hoc Capacity	£0	£0
Ad-hoc Market Operator	£0	£0
Total	£114,657,469	£30,717,196

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

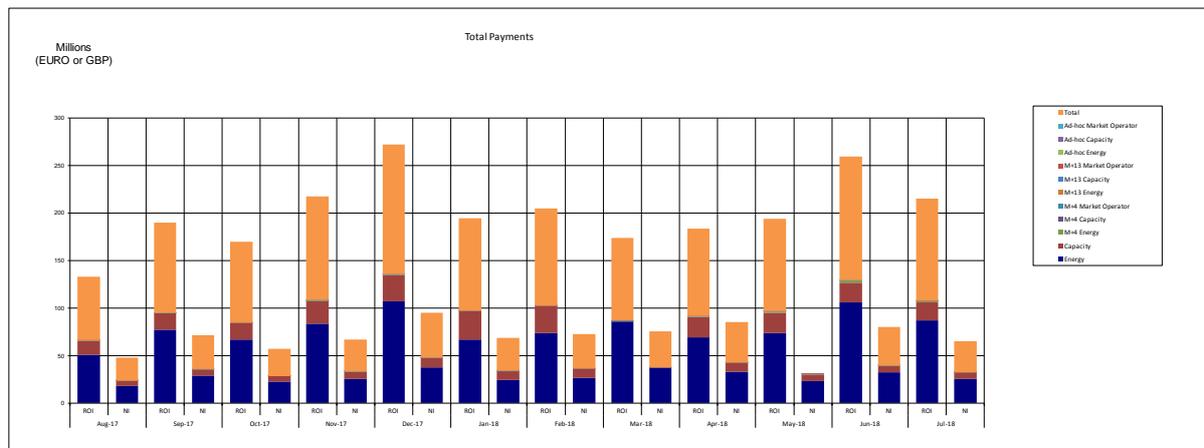


Figure 2 - Total Payments for Each Currency

Market	Jul-18	
	ROI	NI
Energy	£86,768,139	£25,508,813
Capacity	£19,045,125	£6,579,825
M+4 Energy	£1,383,691	£161,500
M+4 Capacity	£307,142	£42,347
M+4 Market Operator	£4,724	£738
M+13 Energy	£47,761	£124,667
M+13 Capacity	£123,685	£69,402
M+13 Market Operator	£431	£1,063
Ad-hoc Energy	£0	£0
Ad-hoc Capacity	£0	£0
Ad-hoc Market Operator	£0	£0
Total	€107,680,698	£32,488,356

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

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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:

July 2018	
Imbalance (Energy Only)	-€3,252,683.21

Table 4 - Balancing Costs for Energy Settlement

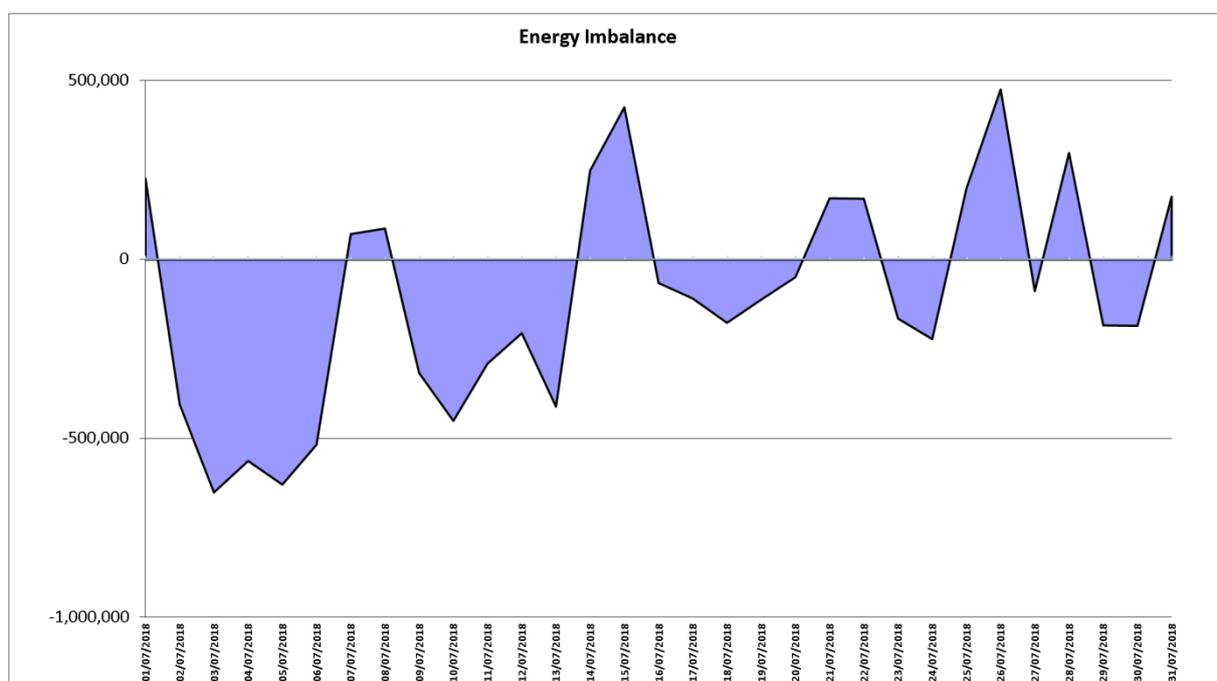


Figure 3 – Energy Imbalances

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.

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:

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- 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
06/07/2018	25	€1,423,194.26	€0
13/07/2018	26	-€49,824.63	€0
20/07/2018	27	€932,000.12	€0
27/07/2018	28	-€201,547.96	€0

Table 5 – Balancing Costs for Trading Payments and Charges

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

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

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

July 2018	
Capacity Charges	€-36,493,690.88
Capacity Payments	€ 36,493,465.11
Balancing Costs	€ -225.77
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

Market Operator Monthly Report

Settlement) and the Exchange Rate on the Date of Invoice (being the date of issue of the Invoice) for Trading Payments and Charges.

2) Payment Period Currency Costs: - in respect of the difference between the Exchange Rates between the Date of Invoice and the Date of Payment.

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

Last Date Of Billing Period	Date Of Invoice	Week No	Currency Costs For Energy Settlement (Invoice and Payment)	Currency Cost Adjustment for Inter-jurisdictional SRAs	Total Currency Cost
30/06/2018	06/07/2018	25	£18,165.86	£-	£18,165.86
07/07/2018	13/07/2018	26	-£13,081.04	£-	-£13,081.04
14/07/2018	20/07/2018	27	£8,105.96	£-	£8,105.96
21/07/2018	27/07/2018	28	£23,099.00	£-	£23,099.00

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 £23,099.00 and a loss of up to -£13,081.04 . Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

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

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

Date Of Invoice	Capacity Month	Currency Costs For Capacity Settlement
10/07/2018	June 2018	-£69,265.48

Table 8 - Total Currency Costs for Capacity Payments and Charges

Cumulative Imperfections Costs Vs Budget

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

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

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

Total Constraint Payments	Total Uninstructed Imbalance	Total Make Whole Payments	Total Imperfections
€209,504,989.69	-€3,068,214.04	€6,589,248.33	-€144,876,080.29

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.

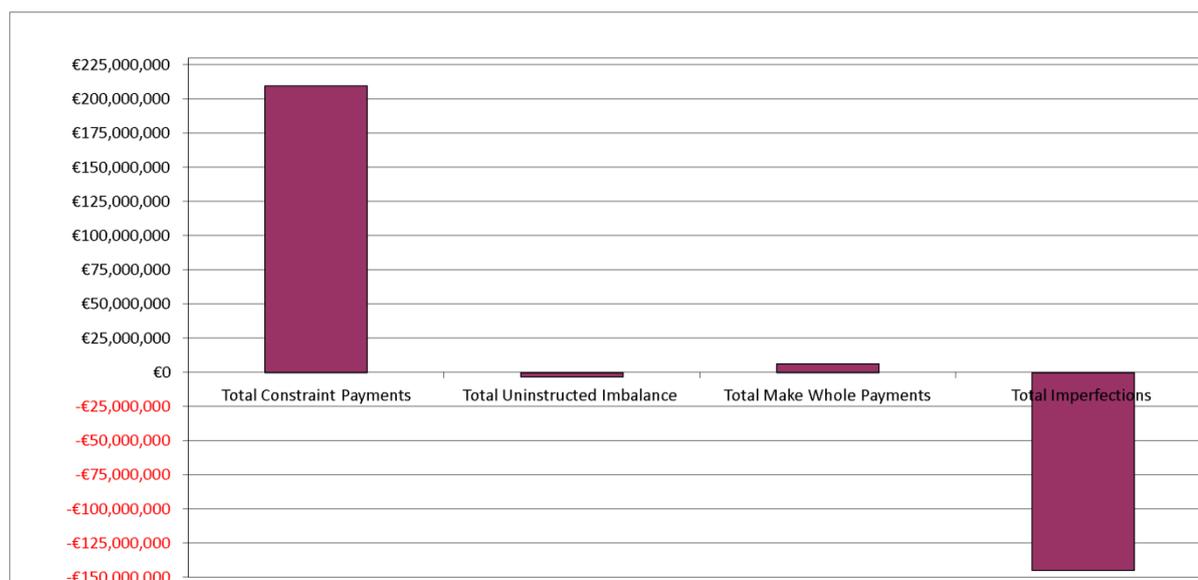


Figure 4 - Cumulative Imperfections Costs Vs Budget

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 March 2018 and the M+13 period of June 2017 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

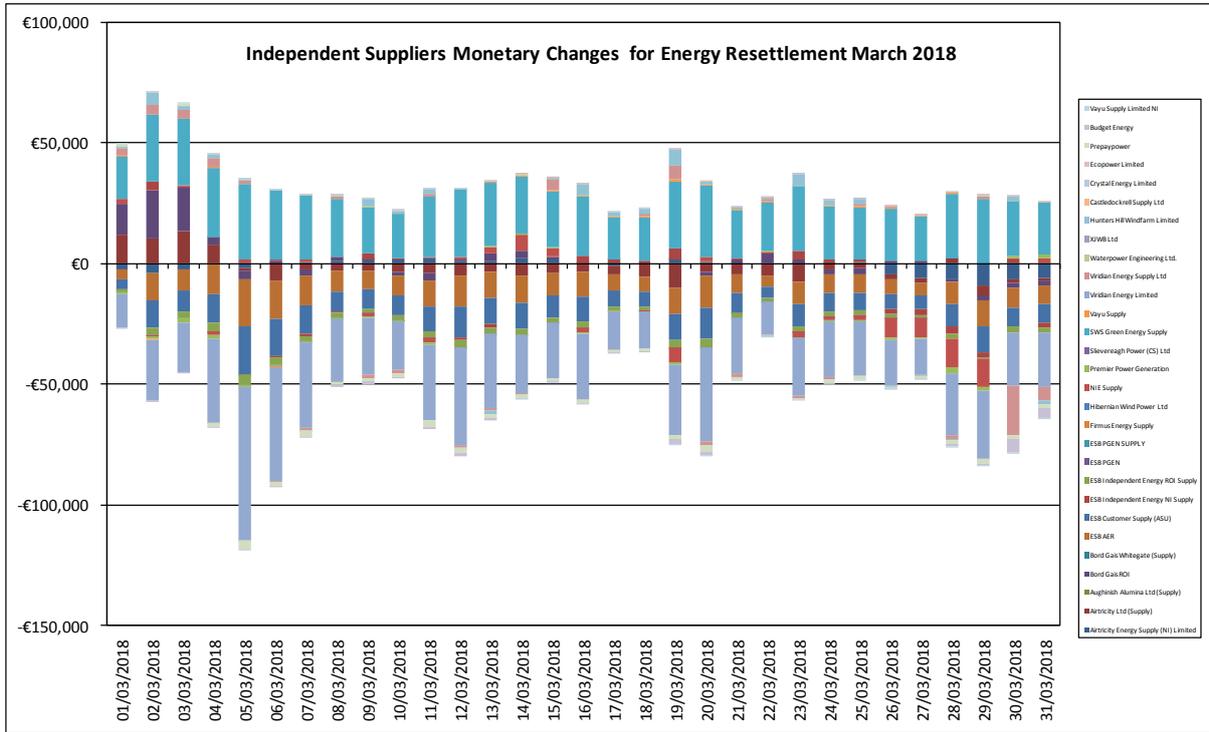


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – March 2018

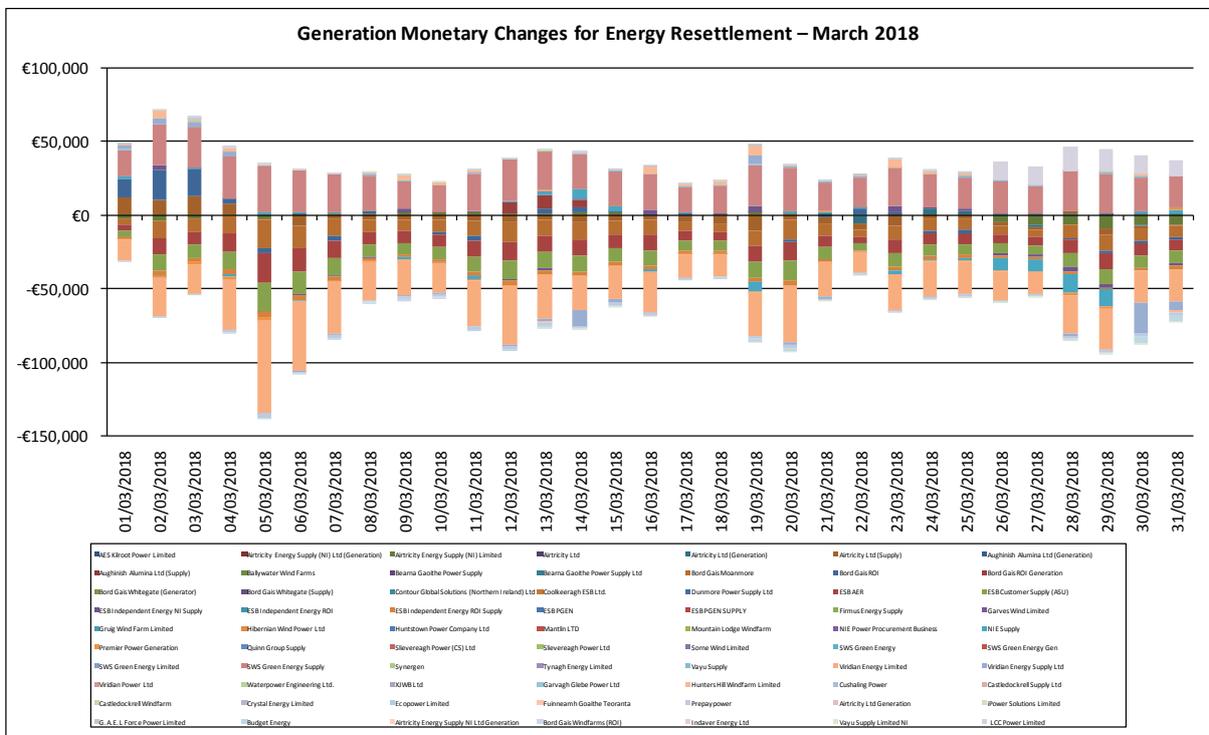


Figure 6 – Generation Monetary Changes for Energy Resettlement – March 2018

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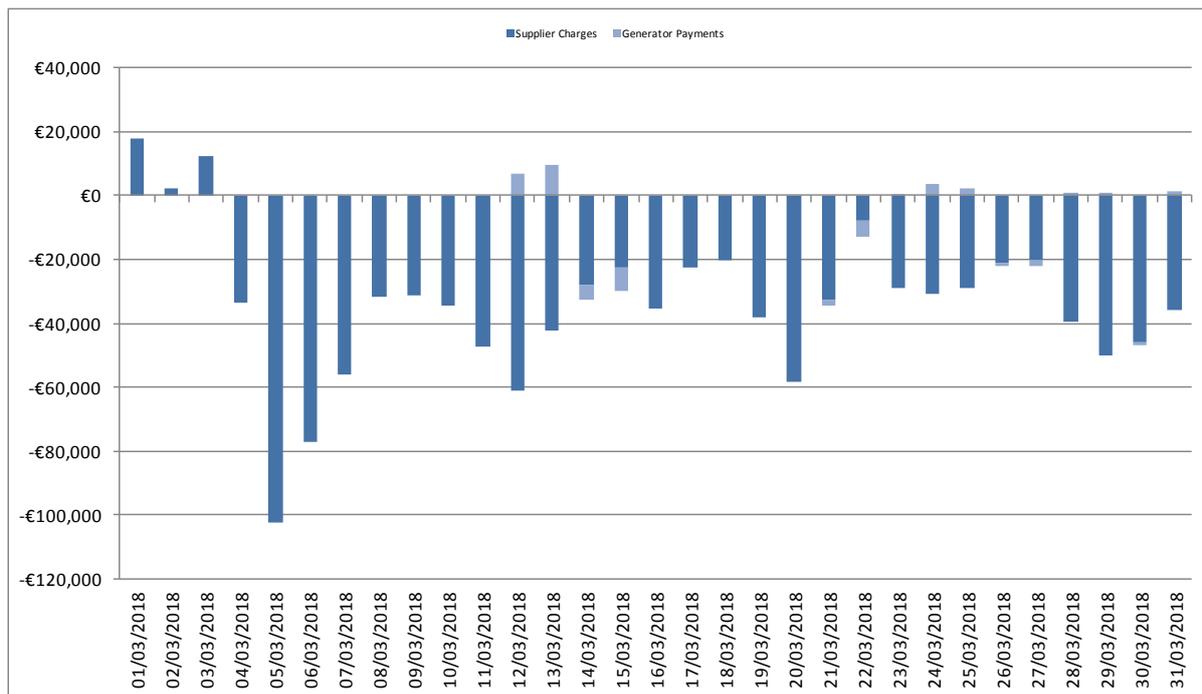


Figure 7 – Total Monetary Changes for Energy Resettlement – March 2018

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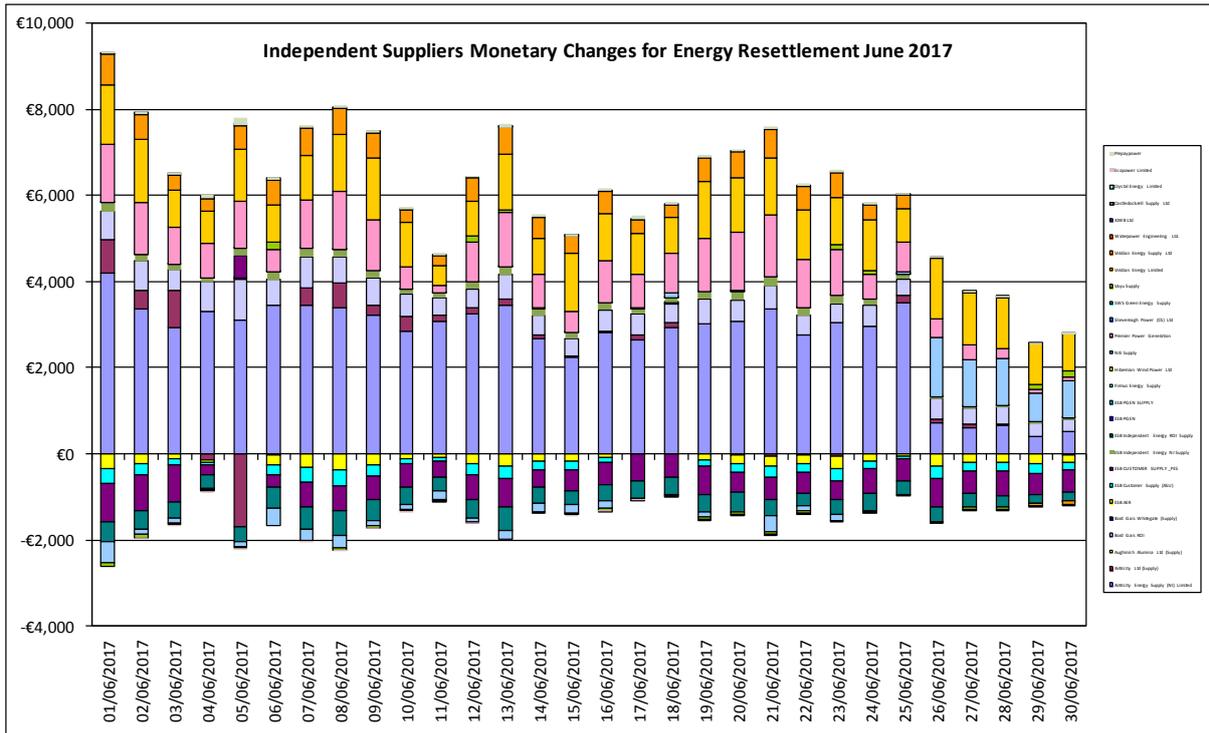


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – June 2017

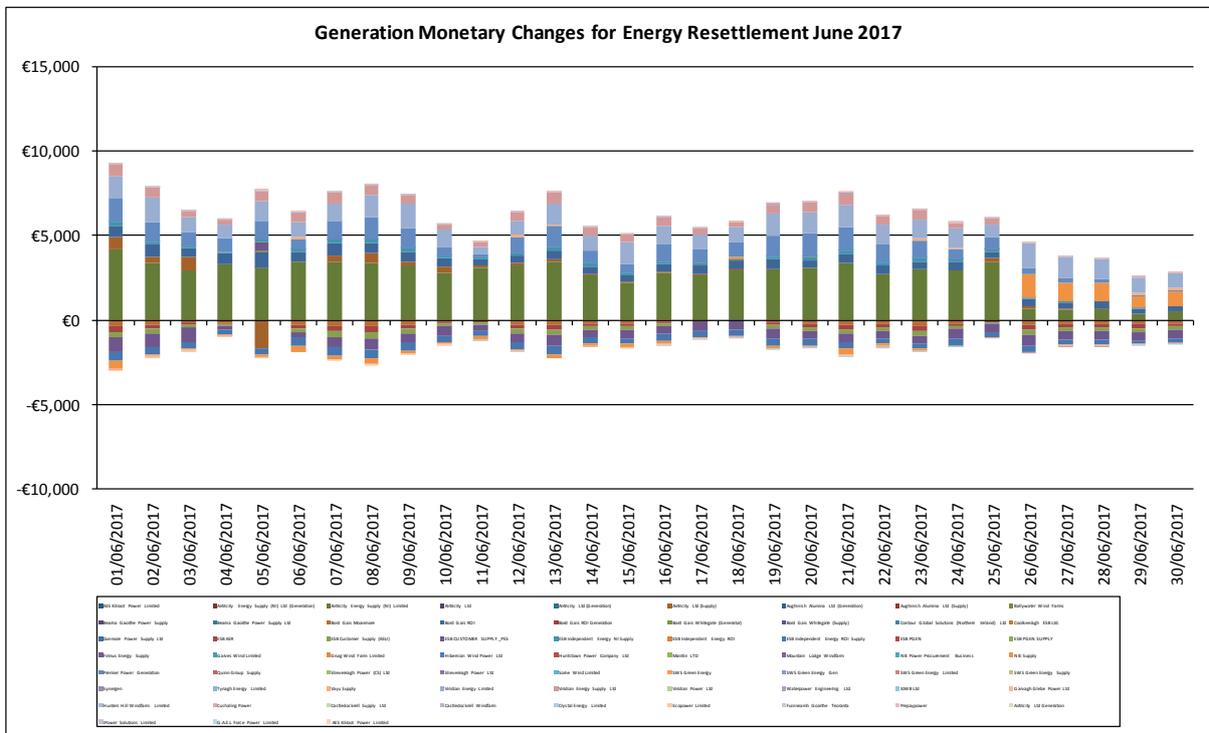


Figure 9 - Generation Monetary Changes for Energy Resettlement – June 2017

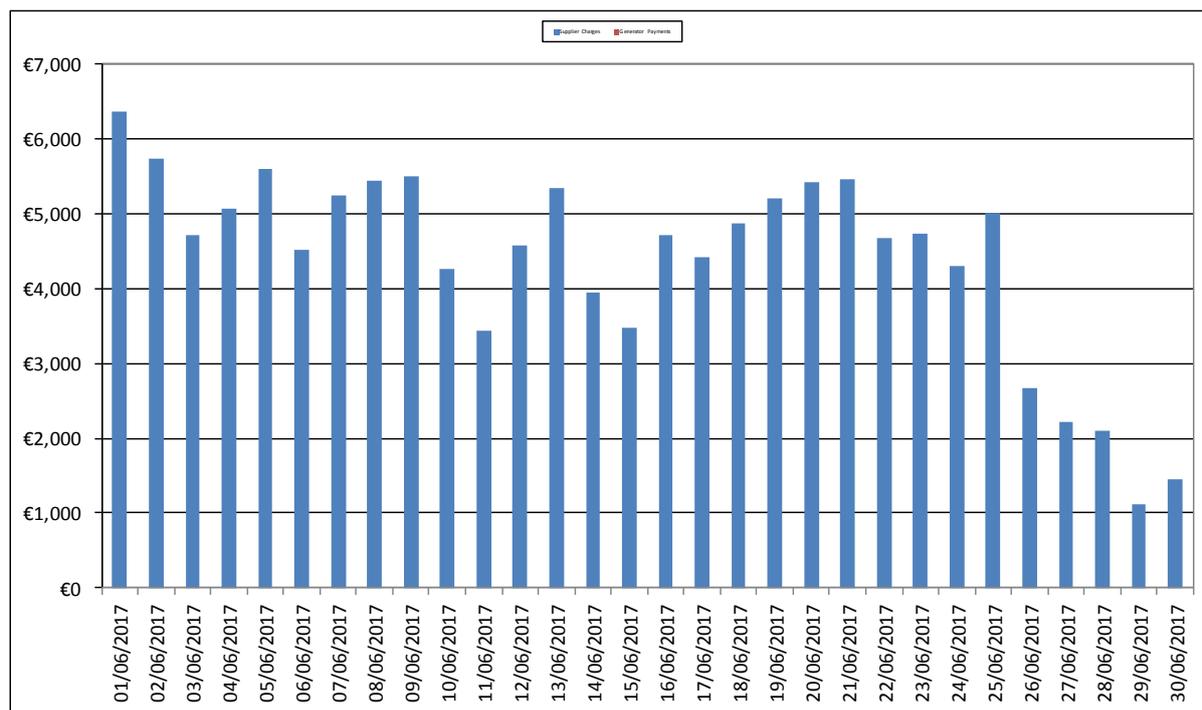


Figure 10 - Total Monetary Changes for Energy Resettlement – June 2017

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

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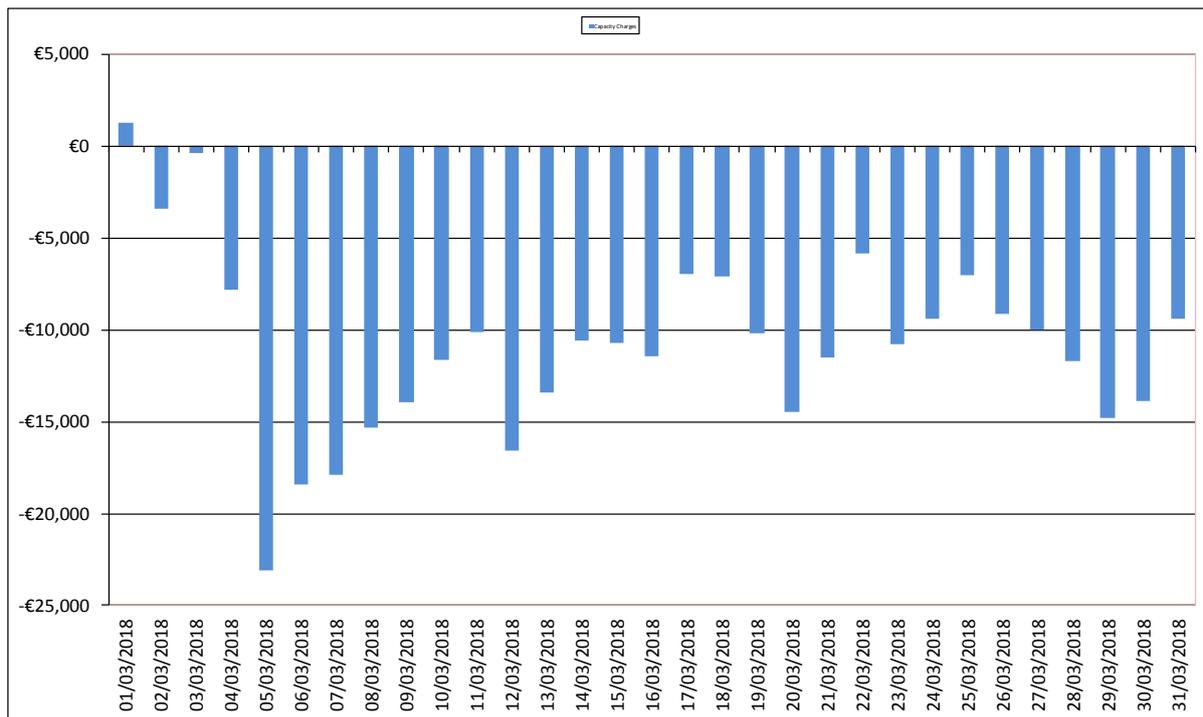


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – March 2018

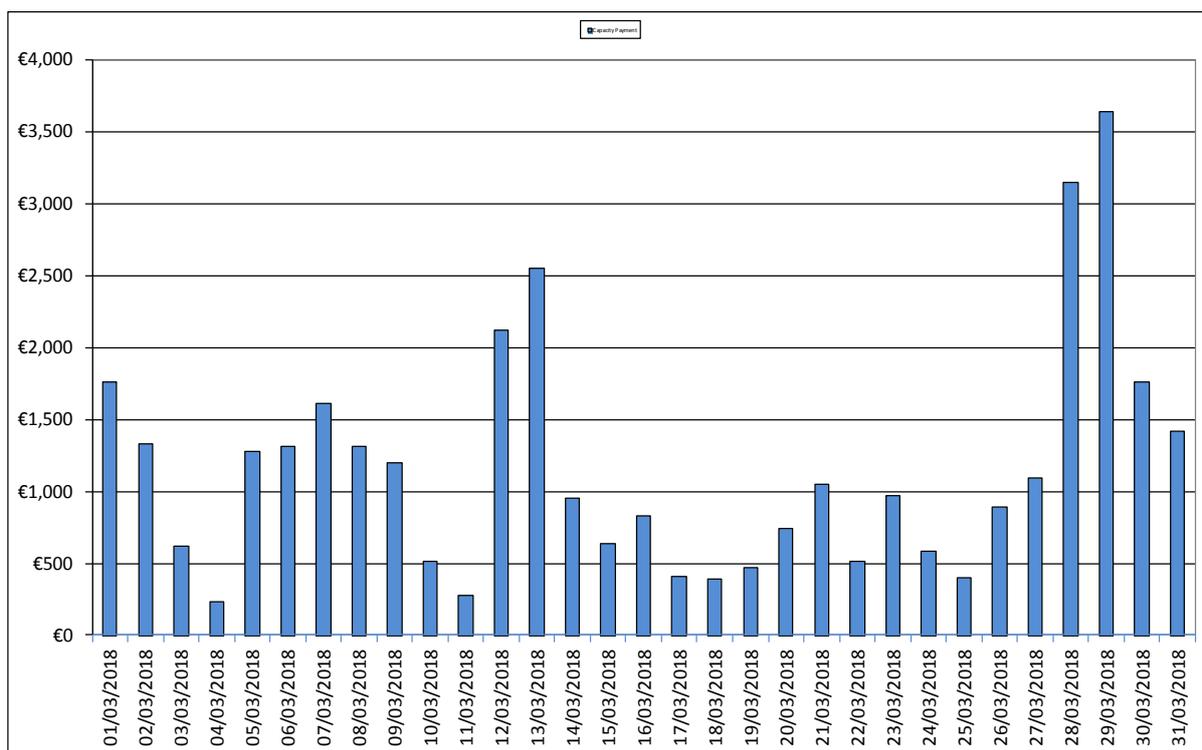


Figure 12 - All Generation Monetary Change for Capacity Resettlement – March 2018

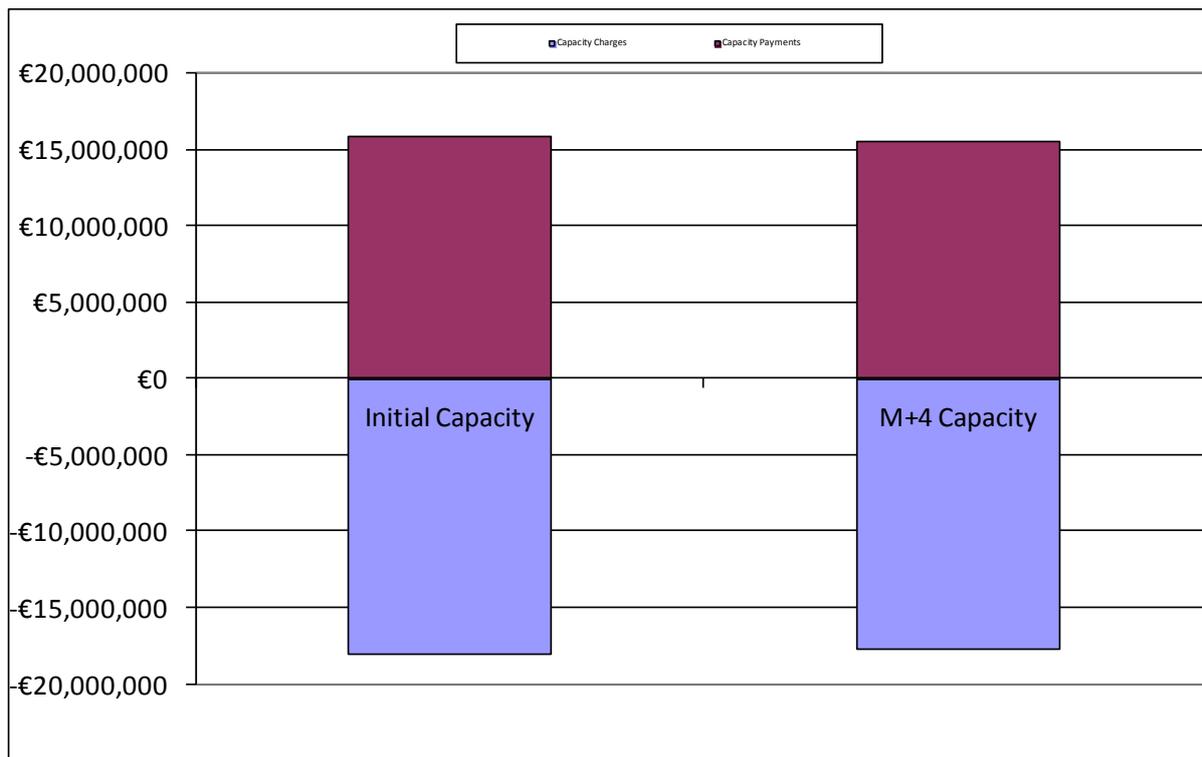


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement March 2018.

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

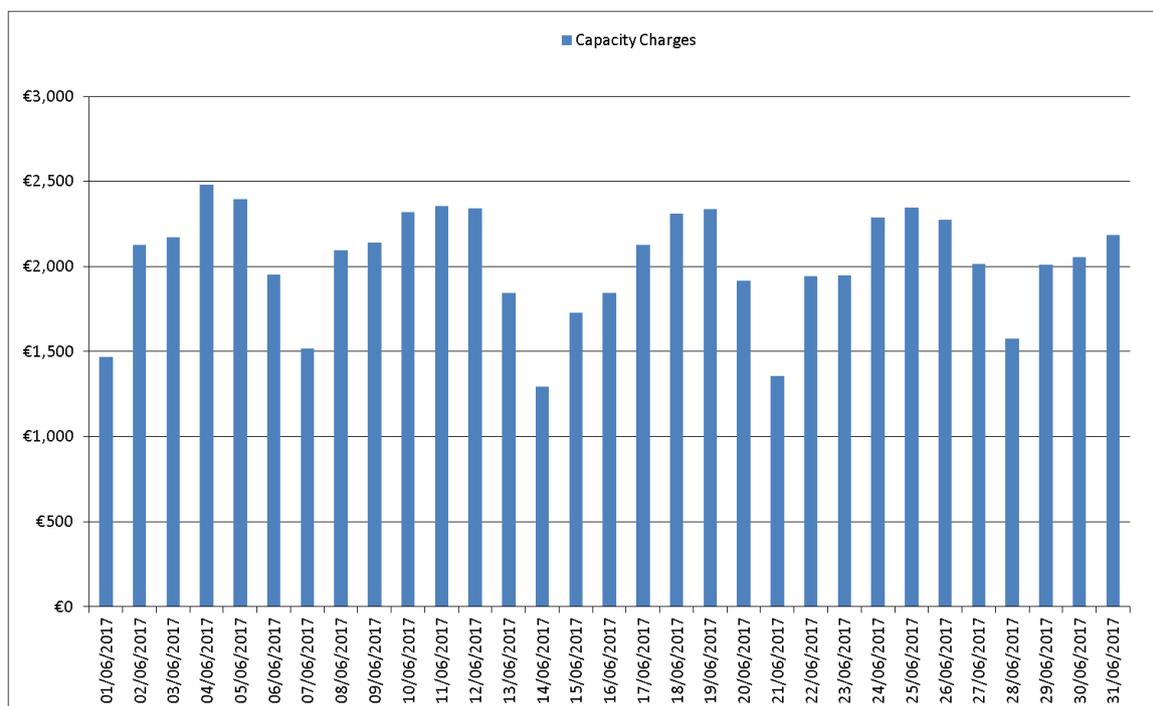


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement - June 2017.

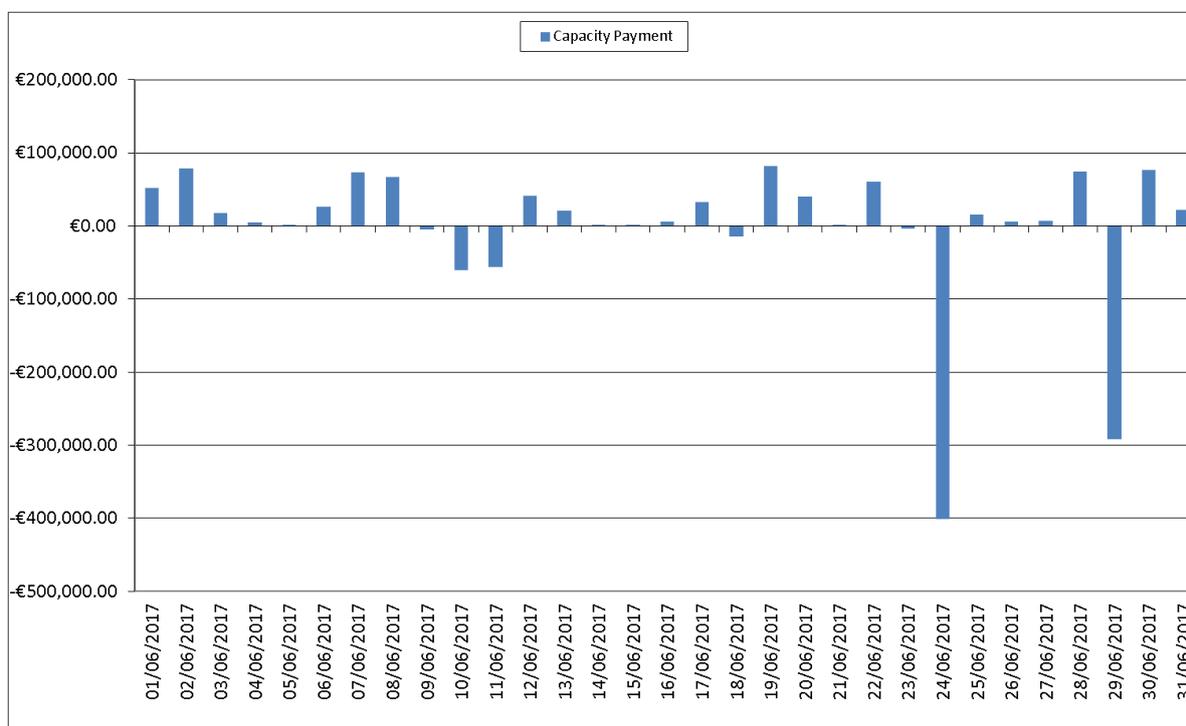


Figure 15 – All Generation Monetary Change for Capacity Resettlement – June 2017.

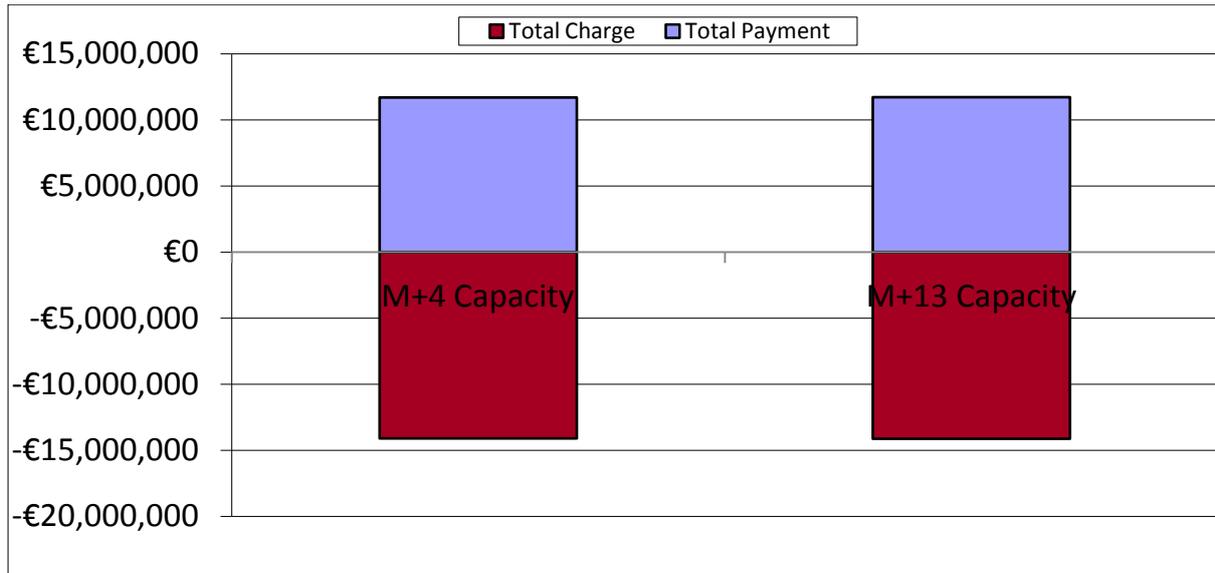


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – June 2017.

Helpdesk Call Statistics

The statistics presented in Table 10 - Helpdesk Call Statistics covers the month of July 2018.

Market Helpdesk Report: 01/07/18 to 31/07/18

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	155	134	21	155	6.51	141
Important	0	0	0	0	0.00	0
Urgent	0	0	0	0	0.00	0
Settlement	8	8	0	9	6.31	9
Credit	0	0	0	0	0.00	0
Dispute	0	0	0	0	0.00	0
Data	1	1	0	1	9.26	1
Total/Average	164	143	21	165	4.42	151

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of July 2018.
- Resolved in the Period refers to queries resolved within July 2018, 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 July 2018.
- Not Resolved refers to queries raised but not resolved within July 2018.
- Urgent are general queries which may have an impact on market operations. SEMO has an internal objective to resolve these within 3 working days; however, this is not a mandated service level under the Trading and Settlement Code.
- Disputes are where a dispute has been raised over the outcome of a data or settlement query.

The average resolution time for General Queries has increased by 3.58 working days from 2.93 in June 2018 to 6.51 in July 2018. 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 July 2018 with regard to formal Settlement Queries.

Disputes and Queries

5.1.1 Disputes

No Disputes were raised during the month of July 2018.

Topic	Number Of Queries

Table 11– Upheld Dispute Queries by Topic

5.1.2 Data Queries

There was one formal data query received during the month of July 2018 and it was upheld.

Topic	Number Of Queries
Actual Availabilities, Dispatch Instructions and Meter Data Submission issues	1

Table 12– Upheld Data Queries by Topic

5.1.3 Settlement Queries

There were eight formal Settlement queries raised in July 2018 and all were upheld.

Topic	Number Of Queries
Dispatch Quantities	5
Meter Data Submission Issue	2
Availabilities	1

Table 13 – Upheld Settlement Queries by Topic

- Five queries relating to incorrect Dispatch quantities were raised. Despite being deemed to be of low materiality, these are to be corrected as part of an Adhoc Resettlement which is scheduled relating to the same period.
- Two queries relating to incorrect Meter Data Submissions were raised and both were deemed to be of Low Materiality. Both of these queries are to be corrected within M+4 Resettlement.
- One query relating to incorrect Availabilities was raised. This is to be corrected within M+4 Resettlement and is deemed to be of low materiality.

Unresolved Queries

There are no unresolved Data Queries or Settlement Queries as of the 8th of August 2018.

A full list of all the Data and Settlement queries raised in July 2018 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, 56.37% of data used was submitted by Participants through the normal Bid-Offer process. 43.63% 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 Ad hoc Re-Settlement runs carried out in July 2018.

There were MIUN delays in July 2018.

6.3.2 System Errors

There were no Market Application defects found in July 2018.

Details are provided in [Appendix C](#): List of All Systems Errors and Failures

6.4 Operational Timings

Market Operator Monthly Report

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 July 2018.

1.4.1 MSP Postings July 2018

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	31-31	0	0	0
Post EA1	31-31	0	0	0
Post EA2	31-31	0	0	0
Post WD1	31-31	0	0	0
Post EP1	30-31	1	0	0
Post EP2	31-31	0	0	0

Table 14 - Operational Timings

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

Table 15 - Operational Timings (% on time)

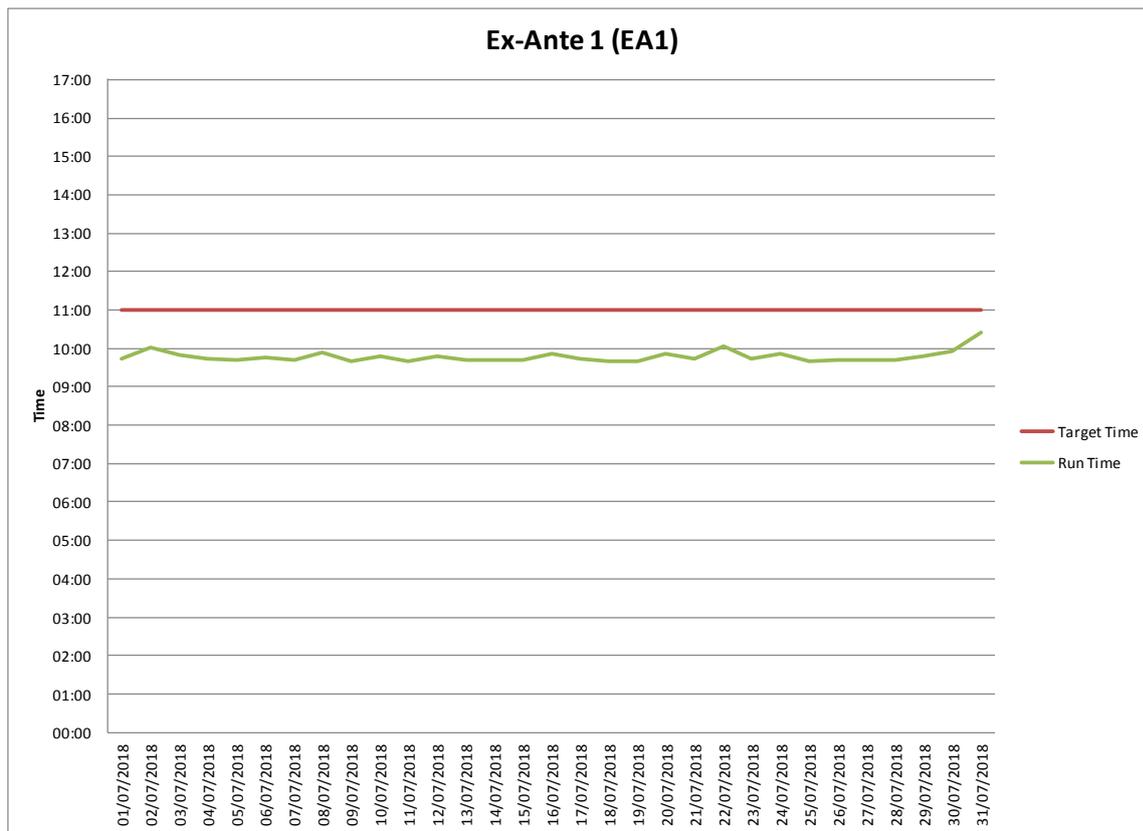


Figure 17 – Ex-Ante 1

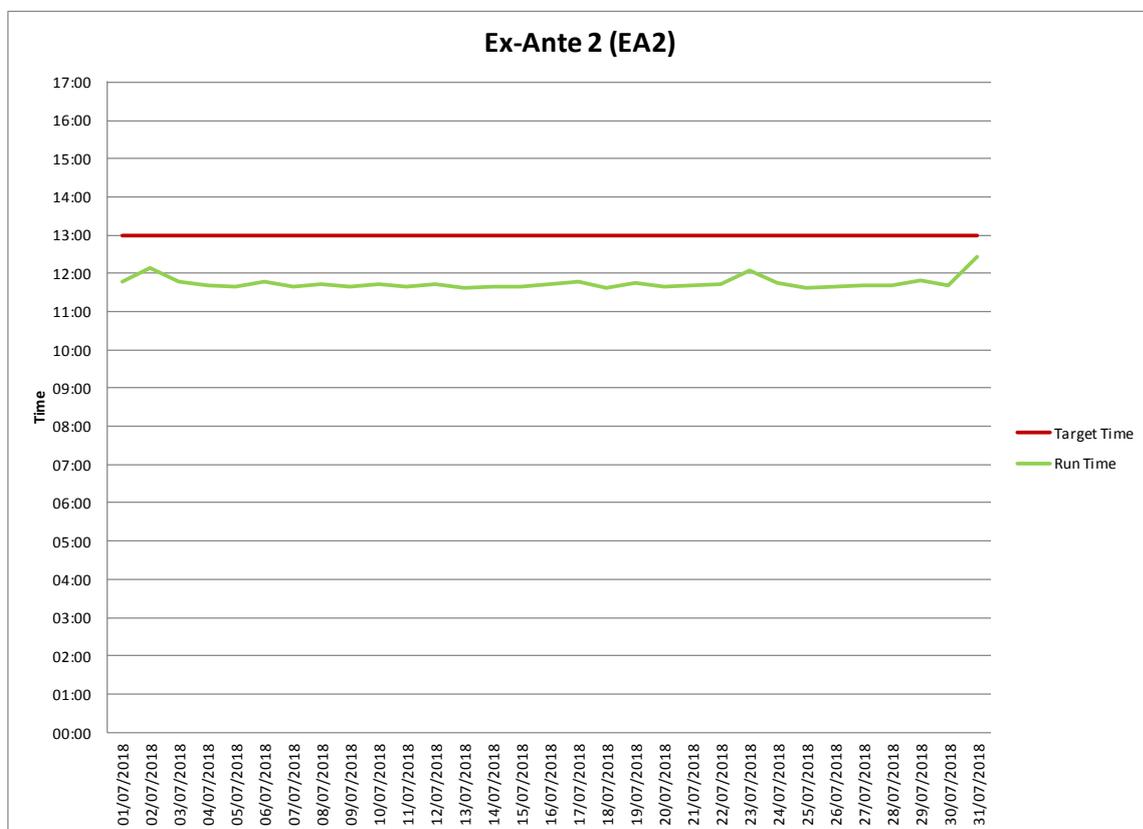


Figure 18 – Ex-Ante 2

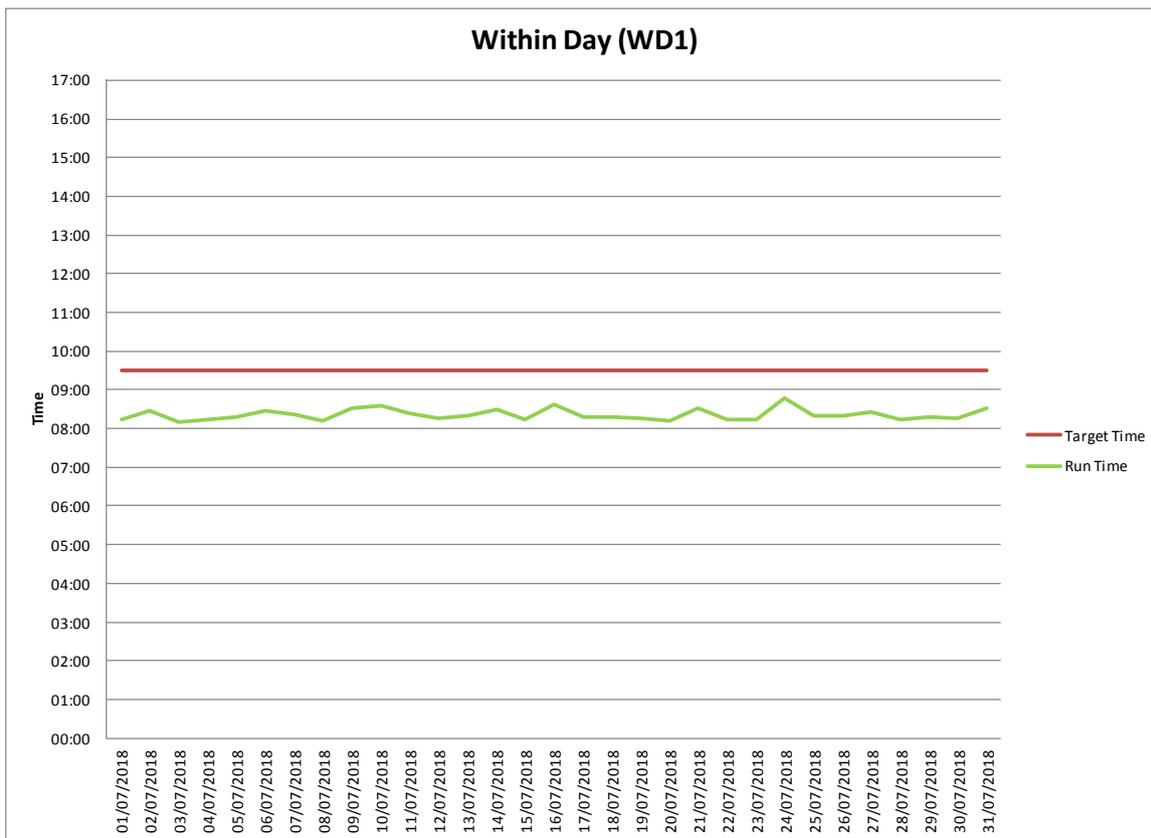


Figure 19 – Within Day 1

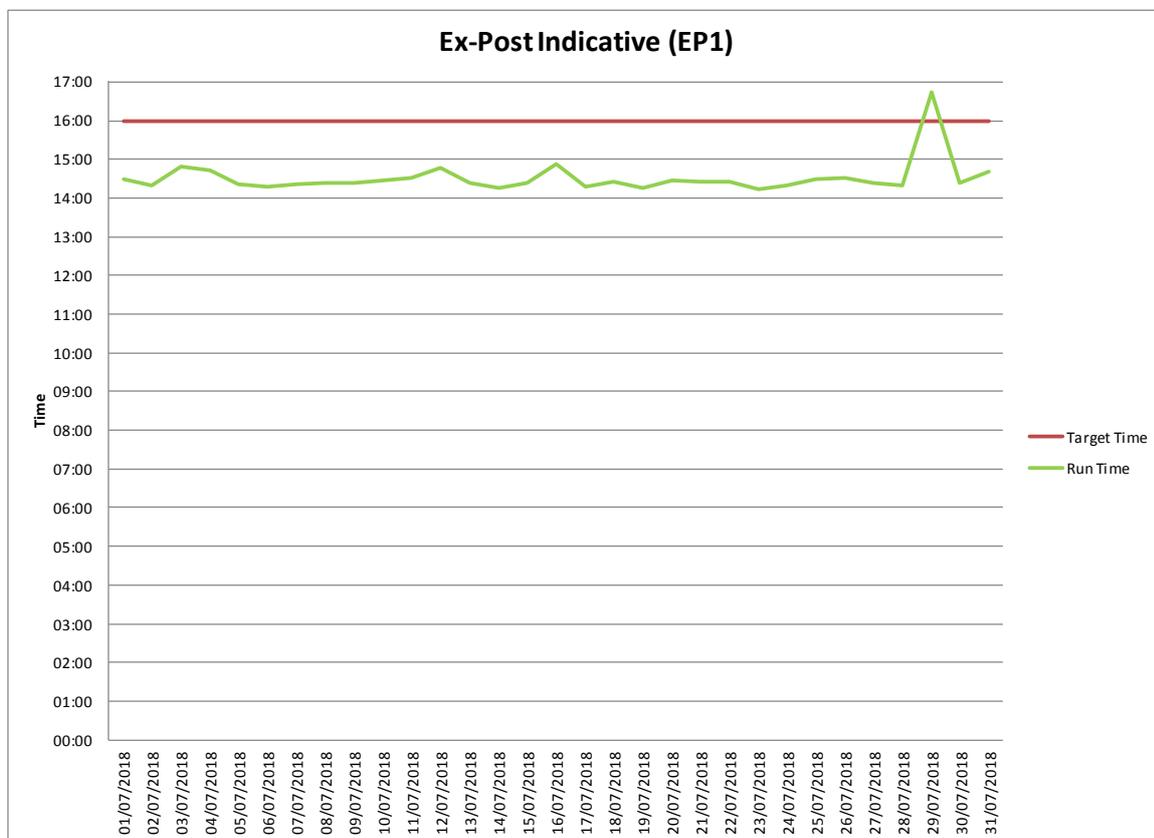


Figure 20 - Ex-Post Indicative

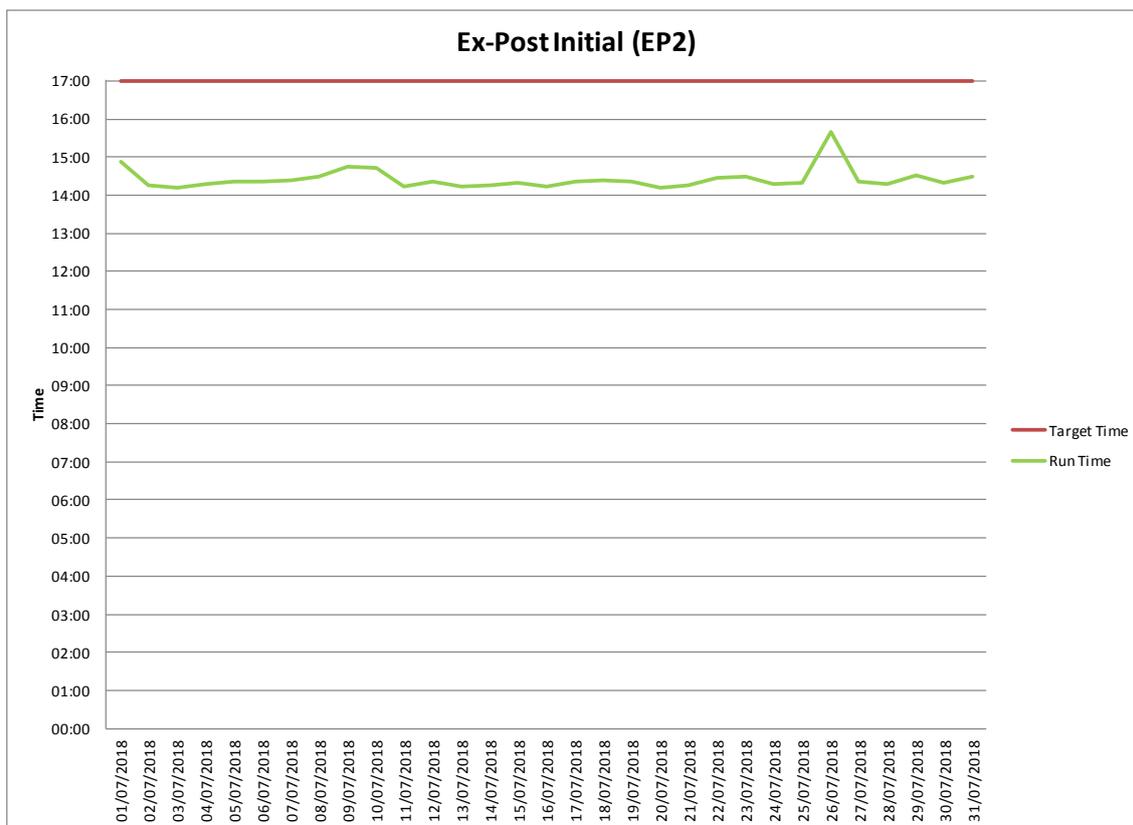


Figure 21 - Ex-Post Initial

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

6.4.2 MSP Algorithms

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

The primary solver used in the SEM is Lagrangian Relaxation (LR). Under certain schedule outcomes where a significant pricing event is observed, the MSP software is re-run using the Mixed Integer Programming (MIP) solver. The outcomes of the two solvers are compared. Where solution determined using the MIP solver provides a better overall solution, this solution 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 July 2018, there was 1 instance 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 July 2018

The publication timings for Settlement runs are provided below.

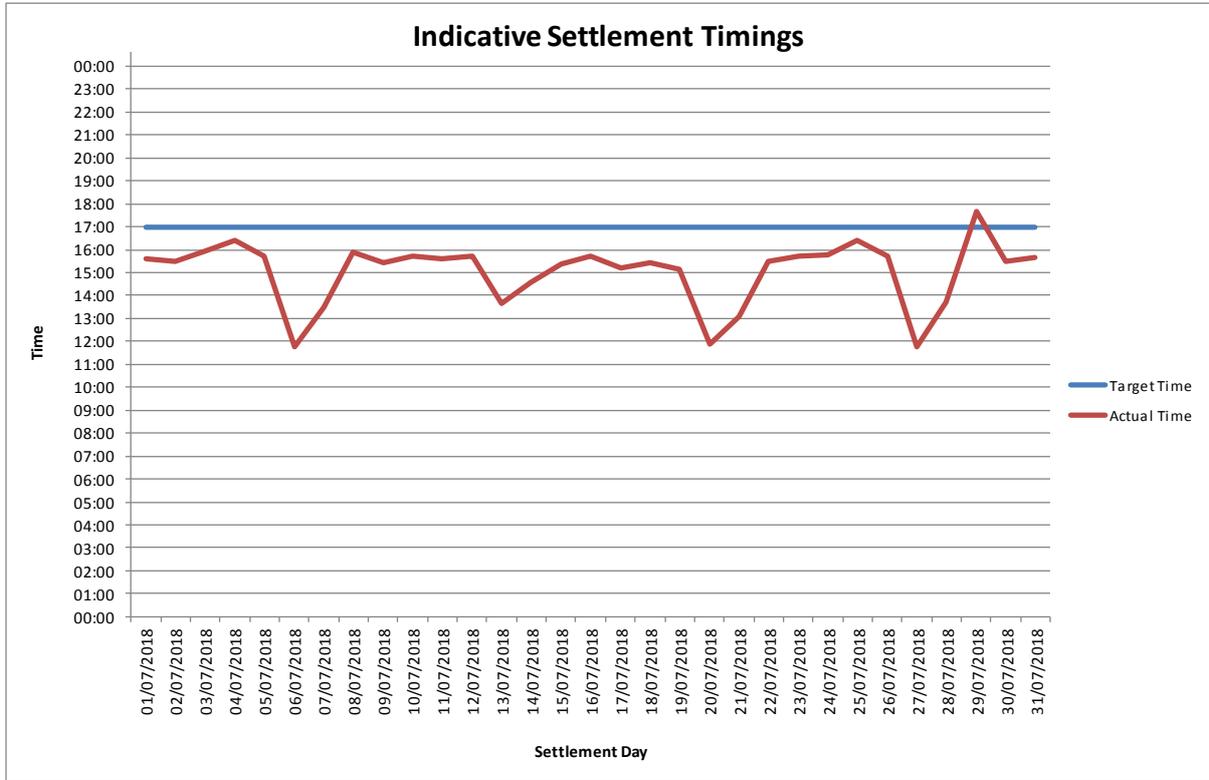


Figure 22 - Indicative Settlement Postings

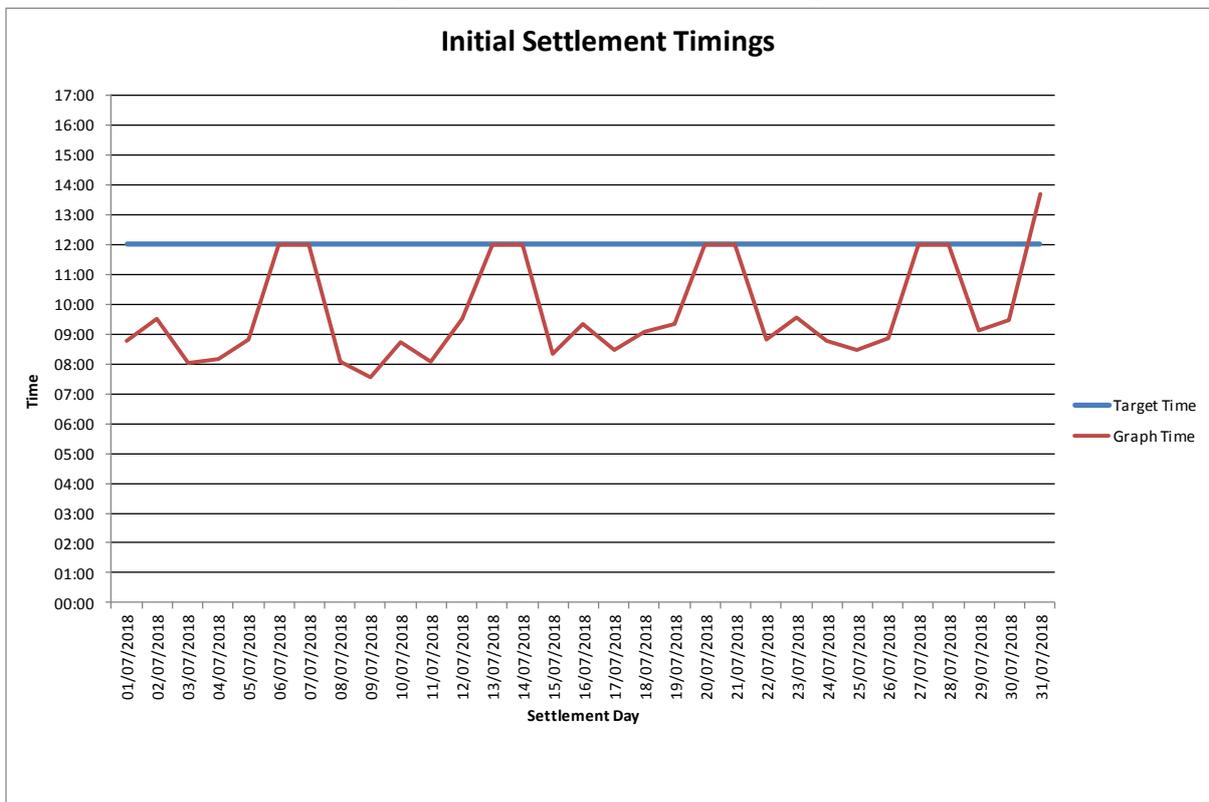


Figure 23 - Initial Settlement Postings

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

6.5. – No update for July 2018

Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

There were no scheduled Business Continuity tests performed during July 2018.

7.2 Communications or Systems Failures

There were no communication failures during July 2018.

7.3 Denial of Service Attacks

There was no Denial of Service Attacks during July 2018.

7.4 Submission of Parameters to RAs for Approval

Work on confirming the extension of SEM parameters in the context the new I-SEM go live date of 1st October was ongoing during July 2018.

Appendix A: Detail of Trading and Settlement Code Breaches

Data Provider

Issue Number	Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
5270	30/07/2018	EP1; EP2	Timing	EirGrid MDP	File Submission	SONI TSO/MDP failed to submit Actual Availabilities on time. System Operator Actual Availabilities files weren't submitted by 14:00 on 30/07/2018 for the Ex-Post Indicative (EP1) & Ex-Post Initial (EP2) Pricing & Scheduling (P&S) run for 29/07/2018 & 27/07/2018.	This was caused due to the Revised & Regular Gate being closed at 14:00 for Trading Day 29/07/2018 & 27/07/2018 and no communication being received.	Gate was re-opened to allow for file submission.	Minor
5259	04/07/2018	EP1	Timing	EirGrid TSO	File Submission	EirGrid TSO failed to submit the System Operator Dispatch Instructions (SO_DISPATCH_INSTRUCTIONS) files by 14:00 on 04/07/2018 for the Ex-Post Indicative (EP1) Pricing & Scheduling (P&S) run for 03/07/2018.	This was caused due to the Regular Gate being closed at 14:00 for Trading Day 03/07/2018 and no communication being received.	Gate was re-opened to allow for file submission.	Minor

Table 16 – Trading and Settlement Code Breaches – Data Provider

Market Participant

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
27/07/2018	Money In	Timing	Participant	Payment Default	3T Power Ltd (PT_500123) defaulted on an VMOC Week 27 2018 Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
30/07/2018	Money In	Timing	Participant	Payment Default	Activation Energy DSU LTD (PT_500097) defaulted on an FMOC June 2018 Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
16/07/2018	Money In	Timing	Participant	Payment Default	Garves Wind Limited (PT_500044) defaulted on an FMOC June 2018 Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
26/07/2018	Money In	Timing	Participant	Payment Default	Powerhouse Generation Limited (PT_500078) defaulted on an June 2018 FMOC Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
17/07/2018	Money In	Timing	Participant	Payment Default	Activation Energy Trading Site Supplier ID (PT_400091) defaulted on an FMOC June 2018 Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
11/07/2018	Money In	Timing	Participant	Payment Default	Oak Energy Supply Limited (PT_400210) defaulted on an Energy Week 25 2018 Initial invoice.	Participant Error	A default letter was issued to the Participant.	Major
04/07/2018	Money In	Timing	Participant	Payment Default	Just Energy (Ireland) Limited (PT_400211) defaulted on an Energy Week 8 2018 M+4 invoice	Participant Error	A default letter was issued to the Participant.	Major
18/07/2018	Money In	Timing	Participant	Payment Default	Oak Energy Supply Limited (PT_400210) defaulted on an Energy Week 26 2018 Initial invoice	Participant Error	A default letter was issued to the Participant.	Major
18/07/2018	Money In	Timing	Participant	Payment Default	Dan Twomey Waterpower Engineering Limited (PT_400045) defaulted on Energy Week 26 2018 Initial and Week 10 2018 M+4 Invoices	Participant Error	A default letter was issued to the Participant.	Major
04/07/2018	Money In	Timing	Participant	Payment Default	Arden Energy Limited (PT_400149) defaulted on Energy Week 24 2018 Initial.	Participant Error	A default letter was issued.	Major
03/07/2018	CRM	Timing	Participant	Credit	Just Energy (CP_400211) defaulted on a CCIN issued on 29/06/2018	CCIN was not resolved within the T&SC timeframes	Just Energy (CP_400211) paid outstanding invoices on the 29/06/2018 which closed the CCIN.	Major
03/07/2018	CRM	Timing	Participant	Credit	Just Energy (CP_400211) defaulted on a CCIN issued on 29/06/2018	CCIN was not resolved within the T&SC timeframes	Just Energy (CP_400211) paid outstanding invoices on the 04/07/2018 which closed the CCIN.	Major

Table 17 – Trading and Settlement Code Breaches – Market Participants

SEMO – Settlements

Ops Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
30/07/2018	Indicative Statements and PIRs	Timing	SEMO	System	Indicative Energy & VMOC Statements and Participant Information Reports (PIRs) for Settlement day 29/07/2018 were published after the 17:00 deadline.	Delay was due to a system issue	Indicative Energy & VMOC Statements and PIRs were published at 17:44	Minor

Table 18 – Trading and Settlement Code Breaches – SEMO

SEMO - Pricing and Scheduling

There were no breaches to report in July 2018.

SEMO - Funds Transfer

There were no breaches to report in July 2018.

SEMO - Credit Management

There were no breaches to report in July 2018.

SEMO – Other

There were no breaches to report in July 2018.

Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Dispatch Quantities	error in the data and charges.	F0079531	2018-07-10	2018-07-30	settlement
Meter Data	Meter data missing	F0079546	2018-07-11	2018-07-19	Settlement
Meter Data	Meter data missing	F0079600	2018-07-11	2018-07-19	Settlement
Dispatch Quantities	Dispatch Quantities issued for first 6 hours of 28th June are incorrect.	F0079629	2018-07-17	2018-07-30	SETTLEMENT
Dispatch Quantities	Variances in the Statements and PIR's compared to ours	F0079634	2018-07-18	2018-01-11	Settlement
Dispatch Quantities	Variances in the Statements and PIR's compared to ours	F0079635	2018-07-18	2018-07-30	Settlement
ACTA, DI and METER data	Following the issues last weekend, attached is a Data query in relation to ACTA, DI and METER data for settlement days 27/06/2018 and 28/06/2018, reference DF 041 ,	F00779429	2018-07-03	2018-07-17	Data Query
Actual Availabilities	Incorrect availabilities submitted at D+3 for GU_500130 (B31) for one minute - 01:31 - 01:32. D+3 Availability was submitted at 01:31 to 255MW, this has now been corrected to 236MW at 01:31 in EDIL and can be resubmitted to SEM systems on request in advance of M+4 resettlement - please advise when submission is required.	F0079710	2018-07-23	2018-07-24	Settlement
Dispatch Instructions	DI submissions for these settlement dates (calendar day submission of 27/06/2018) were incorrect for 2 units - GU_400183 (Aghada CT14) and GU_402030 (Dublin Waste to Energy). The DI application (used to submit data to the market) was unavailable so the contingency process was executed. This called for the D+1 files for this date to be amended and submitted as D+3. These units had updated DIs from the D+1 data.	F0079747	2018-07-26	2018-07-30	Settlement

Table 19- Formal Queries

Appendix C: List of All System Errors and Failures

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

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

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

There were no Market Application defects found in July 2018.

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

Table 20 - List of System Errors and Failures

Appendix D: Details of Operational Timings

Market Schedule and Price Runs

Operational Day	EA1 Postings		EA2 Postings		WD1 Postings		EP1 Postings		EP2 Postings	
	Target	Actual								
01/07/2018	11:00	09:44	13:00	11:46	09:30	08:14	16:00	14:30	17:00	14:52
02/07/2018	11:00	10:01	13:00	12:08	09:30	08:27	16:00	14:19	17:00	14:15
03/07/2018	11:00	09:49	13:00	11:46	09:30	08:10	16:00	14:49	17:00	14:12
04/07/2018	11:00	09:43	13:00	11:42	09:30	08:13	16:00	14:42	17:00	14:17
05/07/2018	11:00	09:41	13:00	11:40	09:30	08:18	16:00	14:21	17:00	14:21
06/07/2018	11:00	09:45	13:00	11:47	09:30	08:28	16:00	14:17	17:00	14:21
07/07/2018	11:00	09:41	13:00	11:39	09:30	08:21	16:00	14:21	17:00	14:23
08/07/2018	11:00	09:53	13:00	11:43	09:30	08:11	16:00	14:24	17:00	14:29
09/07/2018	11:00	09:40	13:00	11:40	09:30	08:31	16:00	14:24	17:00	14:44
10/07/2018	11:00	09:47	13:00	11:44	09:30	08:35	16:00	14:27	17:00	14:43
11/07/2018	11:00	09:40	13:00	11:40	09:30	08:24	16:00	14:31	17:00	14:13
12/07/2018	11:00	09:48	13:00	11:44	09:30	08:15	16:00	14:47	17:00	14:21
13/07/2018	11:00	09:41	13:00	11:38	09:30	08:19	16:00	14:23	17:00	14:13
14/07/2018	11:00	09:42	13:00	11:40	09:30	08:30	16:00	14:15	17:00	14:15
15/07/2018	11:00	09:42	13:00	11:39	09:30	08:13	16:00	14:24	17:00	14:20
16/07/2018	11:00	09:52	13:00	11:44	09:30	08:38	16:00	14:53	17:00	14:13
17/07/2018	11:00	09:43	13:00	11:46	09:30	08:18	16:00	14:18	17:00	14:22
18/07/2018	11:00	09:40	13:00	11:38	09:30	08:18	16:00	14:25	17:00	14:24
19/07/2018	11:00	09:40	13:00	11:45	09:30	08:15	16:00	14:16	17:00	14:22
20/07/2018	11:00	09:51	13:00	11:39	09:30	08:12	16:00	14:27	17:00	14:11
21/07/2018	11:00	09:44	13:00	11:41	09:30	08:32	16:00	14:26	17:00	14:15
22/07/2018	11:00	10:03	13:00	11:44	09:30	08:13	16:00	14:26	17:00	14:28
23/07/2018	11:00	09:43	13:00	12:04	09:30	08:14	16:00	14:14	17:00	14:29
24/07/2018	11:00	09:52	13:00	11:45	09:30	08:47	16:00	14:19	17:00	14:18
25/07/2018	11:00	09:40	13:00	11:38	09:30	08:19	16:00	14:30	17:00	14:20
26/07/2018	11:00	09:41	13:00	11:40	09:30	08:19	16:00	14:32	17:00	15:39
27/07/2018	11:00	09:42	13:00	11:42	09:30	08:25	16:00	14:24	17:00	14:21
28/07/2018	11:00	09:42	13:00	11:41	09:30	08:14	16:00	14:20	17:00	14:18
29/07/2018	11:00	09:48	13:00	11:49	09:30	08:17	16:00	16:44	17:00	14:32
30/07/2018	11:00	09:55	13:00	11:42	09:30	08:16	16:00	14:24	17:00	14:19
31/07/2018	11:00	10:24	13:00	12:27	09:30	08:32	16:00	14:40	17:00	14:30

Table 21 – MSP Runs

Market Operator Monthly Report

Settlement Runs

Indicative				Initial			
Trading	Actual	Target	Actual	Trading	Actual	Target	Actual
Day	Date	Time	Time	Day	Date	Time	Time
01/07/2018	02/07/2018	17:00	15:35	01/07/2018	06/07/2018	12:00	08:46
02/07/2018	03/07/2018	17:00	15:30	02/07/2018	09/07/2018	12:00	09:30
03/07/2018	04/07/2018	17:00	15:56	03/07/2018	10/07/2018	12:00	08:02
04/07/2018	05/07/2018	17:00	16:25	04/07/2018	11/07/2018	12:00	08:09
05/07/2018	06/07/2018	17:00	15:43	05/07/2018	12/07/2018	12:00	08:48
06/07/2018	09/07/2018	17:00	11:45	06/07/2018	13/07/2018	12:00	12:00
07/07/2018	09/07/2018	17:00	13:29	07/07/2018	13/07/2018	12:00	12:00
08/07/2018	09/07/2018	17:00	15:52	08/07/2018	13/07/2018	12:00	08:05
09/07/2018	10/07/2018	17:00	15:26	09/07/2018	16/07/2018	12:00	07:34
10/07/2018	11/07/2018	17:00	15:43	10/07/2018	17/07/2018	12:00	08:43
11/07/2018	12/07/2018	17:00	15:35	11/07/2018	18/07/2018	12:00	08:04
12/07/2018	13/07/2018	17:00	15:42	12/07/2018	19/07/2018	12:00	09:31
13/07/2018	16/07/2018	17:00	13:40	13/07/2018	20/07/2018	12:00	12:00
14/07/2018	16/07/2018	17:00	14:35	14/07/2018	20/07/2018	12:00	12:00
15/07/2018	16/07/2018	17:00	15:24	15/07/2018	20/07/2018	12:00	08:21
16/07/2018	17/07/2018	17:00	15:44	16/07/2018	23/07/2018	12:00	09:20
17/07/2018	18/07/2018	17:00	15:12	17/07/2018	24/07/2018	12:00	08:28
18/07/2018	19/07/2018	17:00	15:26	18/07/2018	25/07/2018	12:00	09:05
19/07/2018	20/07/2018	17:00	15:10	19/07/2018	26/07/2018	12:00	09:20
20/07/2018	23/07/2018	17:00	11:52	20/07/2018	27/07/2018	12:00	12:00
21/07/2018	23/07/2018	17:00	13:06	21/07/2018	27/07/2018	12:00	12:00
22/07/2018	23/07/2018	17:00	15:31	22/07/2018	27/07/2018	12:00	08:49
23/07/2018	24/07/2018	17:00	15:44	23/07/2018	30/07/2018	12:00	09:33
24/07/2018	25/07/2018	17:00	15:46	24/07/2018	31/07/2018	12:00	08:47
25/07/2018	26/07/2018	17:00	16:24	25/07/2018	01/08/2018	12:00	08:27
26/07/2018	27/07/2018	17:00	15:43	26/07/2018	02/08/2018	12:00	08:51
27/07/2018	30/07/2018	18:00	11:45	27/07/2018	03/08/2018	09:38	12:00
28/07/2018	30/07/2018	19:00	13:42	28/07/2018	03/08/2018	08:45	12:00
29/07/2018	30/07/2018	19:00	17:39	29/07/2018	03/08/2018	11:46	09:06
30/07/2018	31/07/2018	19:00	15:29	30/07/2018	06/08/2018	13:14	09:28
31/07/2018	01/08/2018	19:00	15:38	31/07/2018	07/08/2018	13:14	13:43

Table 22 – Settlement Runs

Appendix E: Imperfections Charge

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

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

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

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

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21/10/2017	€910,633.73	-€6,523.05	-€420,863.08
22/10/2017	€746,292.37	-€6,931.78	-€410,457.17
23/10/2017	€583,009.53	€33,581.90	-€477,473.82
24/10/2017	€609,201.47	-€5,455.37	-€486,607.12
25/10/2017	€747,119.39	€5,407.90	-€487,567.97
26/10/2017	€724,380.32	-€9,639.67	-€513,633.27
27/10/2017	€741,948.87	-€21,049.38	-€501,594.81
28/10/2017	€638,373.17	€16,917.71	-€429,220.57
29/10/2017	€504,486.15	€11,661.56	-€430,541.95
30/10/2017	€560,302.03	€18,097.04	-€450,579.60
31/10/2017	€774,526.45	-€7,313.17	-€475,411.26
01/11/2017	€522,537.15	-€54,408.10	-€502,971.73
02/11/2017	€667,226.11	-€1,203.71	-€515,643.12
03/11/2017	€726,570.51	-€25,267.52	-€502,673.40
04/11/2017	€769,822.68	-€9,968.68	-€440,739.94
05/11/2017	€815,933.21	€3,136.73	-€433,513.98
06/11/2017	€869,216.20	-€31,404.29	-€480,267.16
07/11/2017	€968,443.23	-€52,023.59	-€514,093.72
08/11/2017	€1,063,769.89	-€34,250.52	-€523,176.99
09/11/2017	€748,505.97	-€5,215.86	-€501,360.57
10/11/2017	€881,798.99	-€12,788.24	-€493,615.16
11/11/2017	€637,400.22	-€4,835.74	-€472,590.85
12/11/2017	€771,718.43	€63.67	-€431,160.80
13/11/2017	€1,081,045.42	-€42,751.20	-€523,259.42
14/11/2017	€663,735.71	-€22,404.48	-€531,518.99
15/11/2017	€997,262.39	-€1,454.74	-€522,872.63
16/11/2017	€619,867.11	-€12,376.26	-€514,328.91
17/11/2017	€717,301.60	-€19,322.09	-€527,547.76

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18/11/2017	€641,678.53	-€12,312.51	-€483,698.00
19/11/2017	€681,550.58	-€210.80	-€457,825.35
20/11/2017	€690,457.41	-€9,436.02	-€502,410.50
21/11/2017	€881,388.63	-€14,900.47	-€505,386.09
22/11/2017	€814,158.91	€21,134.19	-€530,166.05
23/11/2017	€765,003.37	€1,455.10	-€522,381.63
24/11/2017	€746,628.87	-€23,375.05	-€540,392.09
25/11/2017	€727,927.70	-€32,238.40	-€482,715.14
26/11/2017	€1,026,529.88	-€52,461.86	-€463,393.98
27/11/2017	€668,953.92	€8,690.26	-€514,024.06
28/11/2017	€668,857.78	-€23,316.60	-€530,834.78
29/11/2017	€672,507.63	€17,955.74	-€545,922.34
30/11/2017	€873,915.32	-€22,024.34	-€545,436.84
01/12/2017	€490,061.93	-€37,529.60	-€558,052.50
02/12/2017	€735,776.23	-€43,949.95	-€495,965.05
03/12/2017	€863,967.41	-€3,763.51	-€466,912.21
04/12/2017	€540,667.50	-€30,111.37	-€542,729.15
05/12/2017	€570,663.31	-€8,695.06	-€533,471.16
06/12/2017	€1,056,861.68	-€2,868.66	-€505,987.39
07/12/2017	€791,442.49	€35,812.48	-€511,088.42
08/12/2017	€658,684.84	-€22,832.55	-€535,597.53
09/12/2017	€633,297.68	-€10,548.00	-€524,370.77
10/12/2017	€974,343.61	€12,449.52	-€493,040.09
11/12/2017	€858,812.76	-€23,430.21	-€557,015.20
12/12/2017	€661,568.64	-€33,525.06	-€572,922.46
13/12/2017	€969,727.15	-€32,067.79	-€547,643.48
14/12/2017	€826,830.20	-€40,511.63	-€547,119.02
15/12/2017	€492,430.48	-€17,215.00	-€534,149.99

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16/12/2017	€593,022.52	-€23,860.19	-€512,250.90
17/12/2017	€510,323.80	-€11,485.40	-€475,824.38
18/12/2017	€381,066.43	-€25,323.29	-€554,350.08
19/12/2017	€408,521.30	-€26,218.06	-€530,127.96
20/12/2017	€589,087.85	-€24,212.41	-€541,635.65
21/12/2017	€395,008.92	-€15,727.05	-€528,633.55
22/12/2017	€704,163.60	-€29,023.77	-€502,975.18
23/12/2017	€605,894.69	-€2,097.68	-€446,615.17
24/12/2017	€745,480.37	-€2,837.73	-€417,920.96
25/12/2017	€505,582.39	€28,749.08	-€428,742.86
26/12/2017	€494,665.97	-€4,325.18	-€419,663.54
27/12/2017	€511,537.54	-€16,064.34	-€451,850.34
28/12/2017	€467,815.85	-€33,753.24	-€501,168.94
29/12/2017	€482,934.53	-€17,451.57	-€469,482.14
30/12/2017	€658,719.76	-€12,195.60	-€451,320.89
31/12/2017	€904,660.41	-€40,768.23	-€425,145.60
01/01/2018	€775,208.86	-€10,640.96	-€419,530.35
02/01/2018	€922,626.05	-€44,248.00	-€485,871.83
03/01/2018	€904,404.93	-€18,470.33	-€505,911.62
04/01/2018	€725,077.05	-€15,779.87	-€531,010.75
05/01/2018	€640,798.97	€7,789.61	-€537,058.78
06/01/2018	€610,789.68	€4,051.32	-€477,798.09
07/01/2018	€688,000.68	-€22,364.69	-€479,227.00
08/01/2018	€589,926.31	-€170.49	-€534,857.69
09/01/2018	€694,966.79	-€1,675.99	-€535,114.79
10/01/2018	€402,382.71	-€31,199.83	-€569,704.58
11/01/2018	€632,040.94	-€44,137.51	-€566,701.32
12/01/2018	€759,337.10	-€17,732.30	-€506,319.53

Market Operator Monthly Report

13/01/2018	€572,312.20	-€15,711.00	-€479,697.73
14/01/2018	€791,290.51	-€3,023.32	-€448,796.82
15/01/2018	€871,334.50	-€1,991.16	-€500,288.14
16/01/2018	€755,258.89	-€9,948.20	-€529,605.64
17/01/2018	€809,885.00	-€4,644.94	-€541,765.49
18/01/2018	€651,083.41	-€15,048.94	-€543,035.16
19/01/2018	€980,820.52	-€35,475.47	-€542,052.53
20/01/2018	€781,591.50	-€6,285.19	-€512,776.02
21/01/2018	€608,994.29	€7,307.58	-€463,736.30
22/01/2018	€575,618.47	-€6,551.94	-€517,831.32
23/01/2018	€896,302.79	-€7,389.49	-€496,860.62
24/01/2018	€629,768.31	-€1,477.38	-€501,551.23
25/01/2018	€596,738.71	-€8,426.56	-€521,626.72
26/01/2018	€480,919.87	-€9,989.15	-€534,089.78
27/01/2018	€841,553.07	-€6,094.47	-€454,557.11
28/01/2018	€1,374,400.45	€1,518.44	-€427,481.55
29/01/2018	€535,764.79	€59.43	-€511,888.74
30/01/2018	€546,337.65	€35,971.05	-€529,861.07
31/01/2018	€638,281.84	€28,651.29	-€514,816.59
01/02/2018	€605,783.83	€76,252.88	-€517,155.65
02/02/2018	€526,771.26	-€59,486.01	-€539,412.92
03/02/2018	€697,093.47	-€3,403.10	-€469,546.66
04/02/2018	€600,190.56	-€34,664.36	-€477,079.17
05/02/2018	€480,292.36	-€48,622.76	-€556,317.44
06/02/2018	€807,121.00	-€12,158.88	-€541,407.79
07/02/2018	€841,989.92	-€11,272.45	-€564,695.15
08/02/2018	€819,667.40	-€13,240.74	-€542,786.00
09/02/2018	€632,655.24	-€23,398.89	-€527,514.20

Market Operator Monthly Report

10/02/2018	€1,023,520.82	-€23,874.68	-€465,646.42
11/02/2018	€953,601.69	€1,163.67	-€459,202.69
12/02/2018	€940,888.52	-€14,590.82	-€525,142.82
13/02/2018	€762,441.45	-€30,460.93	-€532,396.16
14/02/2018	€799,781.94	-€37,681.25	-€512,397.62
15/02/2018	€662,385.10	-€20,326.90	-€516,927.30
16/02/2018	€408,767.59	€2,876.95	-€523,234.43
17/02/2018	€596,799.99	-€98,483.02	-€495,611.52
18/02/2018	€1,029,823.75	-€26,929.77	-€467,318.77
19/02/2018	€1,097,784.00	-€14,594.86	-€520,192.93
20/02/2018	€524,687.91	-€7,647.53	-€532,938.13
21/02/2018	€735,100.27	€2,533.38	-€548,515.62
22/02/2018	€434,068.15	€1,799.08	-€529,638.08
23/02/2018	€1,010,678.65	€1,983.96	-€500,439.34
24/02/2018	€1,024,739.76	-€5,556.54	-€473,301.48
25/02/2018	€970,771.64	-€7,767.53	-€446,538.82
26/02/2018	€572,758.45	€15,746.25	-€536,825.84
27/02/2018	€1,063,391.46	-€9,774.48	-€558,132.57
28/02/2018	€853,196.97	-€89,425.88	-€539,292.29
01/03/2018	€1,673,576.58	€39,766.24	-€505,992.98
02/03/2018	€2,387,741.41	€57,247.65	-€477,352.17
03/03/2018	€1,850,850.15	-€11,319.52	-€478,505.71
04/03/2018	€679,734.93	-€17,982.83	-€493,636.11
05/03/2018	€525,538.64	-€50,048.77	-€574,984.39
06/03/2018	€466,841.00	-€50,329.88	-€570,179.25
07/03/2018	€436,699.43	-€3,194.18	-€545,326.34
08/03/2018	€457,206.42	-€40,898.33	-€546,318.56
09/03/2018	€667,804.54	-€41,309.38	-€541,700.80

Market Operator Monthly Report

10/03/2018	€579,280.82	-€9,281.61	-€476,237.81
11/03/2018	€600,883.52	-€733.19	-€469,611.25
12/03/2018	€616,524.61	-€42,008.30	-€530,433.67
13/03/2018	€880,333.65	-€28,961.46	-€520,106.43
14/03/2018	€1,074,296.73	-€455.47	-€508,968.98
15/03/2018	€914,920.27	-€31,250.28	-€508,212.21
16/03/2018	€505,224.23	-€6,746.70	-€509,139.88
17/03/2018	€760,355.76	€8,582.12	-€449,759.11
18/03/2018	€873,584.92	-€12,408.31	-€452,945.22
19/03/2018	€491,146.54	-€55,508.98	-€484,017.51
20/03/2018	€555,311.01	-€16,136.62	-€550,631.10
21/03/2018	€513,331.67	-€25,003.30	-€535,584.82
22/03/2018	€559,345.04	-€18,447.02	-€511,885.66
23/03/2018	€590,627.06	-€30,661.41	-€515,058.55
24/03/2018	€474,029.73	€3,486.40	-€477,583.01
25/03/2018	€483,321.55	-€14,141.11	-€439,970.35
26/03/2018	€562,187.38	-€27,584.42	-€509,600.64
27/03/2018	€617,932.24	-€4,537.66	-€494,059.40
28/03/2018	€531,244.22	-€13,750.60	-€519,819.31
29/03/2018	€591,604.63	€173,474.88	-€528,636.87
30/03/2018	€2,048,695.73	-€73,133.41	-€501,729.35
31/03/2018	€2,407,665.11	-€107,253.54	-€472,708.10
01/04/2018	€1,178,541.68	-€38,339.78	-€434,281.27
02/04/2018	€1,380,685.42	€8,159.63	-€439,229.36
03/04/2018	€2,244,475.06	-€70,234.37	-€494,489.66
04/04/2018	€1,365,175.16	-€30,579.05	-€497,607.24
05/04/2018	€1,573,857.83	-€3,899.85	-€505,972.98
06/04/2018	€1,381,828.83	-€13,999.42	-€472,441.22

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07/04/2018	€1,161,156.27	-€2,305.86	-€472,166.34
08/04/2018	€1,372,099.63	-€7,122.34	-€452,499.54
09/04/2018	€702,740.43	-€9,167.80	-€498,838.23
10/04/2018	€583,576.21	-€10,737.09	-€500,212.70
11/04/2018	€533,956.19	-€30,802.00	-€524,870.66
12/04/2018	€558,768.74	€7,795.75	-€520,769.44
13/04/2018	€488,973.11	-€21,638.22	-€517,521.80
14/04/2018	€689,192.33	-€56.82	-€437,553.49
15/04/2018	€1,121,156.75	-€29.67	-€403,802.28
16/04/2018	€1,269,708.55	€10,012.98	-€459,294.66
17/04/2018	€1,098,934.94	-€5,035.43	-€452,850.14
18/04/2018	€785,325.38	-€15,097.84	-€456,886.42
19/04/2018	€554,763.30	-€17,661.73	-€480,983.83
20/04/2018	€359,598.13	-€3,970.01	-€471,663.90
21/04/2018	€522,798.70	€3,325.51	-€423,512.91
22/04/2018	€592,109.00	-€4,715.07	-€395,016.70
23/04/2018	€612,121.90	-€13,006.14	-€453,955.74
24/04/2018	€494,605.91	-€6,468.25	-€486,151.47
25/04/2018	€533,625.30	-€62,351.82	-€461,256.28
26/04/2018	€588,971.43	-€48,257.38	-€477,021.89
27/04/2018	€630,654.78	-€40,174.26	-€489,237.37
28/04/2018	€544,063.95	-€28,379.58	-€451,274.97
29/04/2018	€648,268.00	-€22,996.68	-€430,933.71
30/04/2018	€361,039.04	-€2,681.23	-€483,155.20
01/05/2018	€495,896.76	-€13,117.84	-€470,524.60
02/05/2018	€479,977.02	€14,566.65	-€464,726.92
03/05/2018	€360,631.47	-€9,621.09	-€481,876.35
04/05/2018	€277,963.89	€8,493.16	-€474,168.71

Market Operator Monthly Report

05/05/2018	€277,595.68	-€14,409.34	-€418,012.42
06/05/2018	€364,420.95	€504.33	-€399,907.51
07/05/2018	€327,952.42	€2,387.59	-€407,865.14
08/05/2018	€384,417.89	-€3,349.26	-€443,292.23
09/05/2018	€485,526.22	€4,792.57	-€449,767.52
10/05/2018	€577,907.02	-€18,319.20	-€451,157.24
11/05/2018	€456,257.18	€17,142.82	-€450,717.98
12/05/2018	€606,009.52	-€14,918.08	-€426,342.26
13/05/2018	€780,576.06	-€18,733.59	-€405,510.11
14/05/2018	€544,665.20	€36,612.82	-€472,836.46
15/05/2018	€706,143.70	-€15,420.14	-€468,826.45
16/05/2018	€271,811.25	€40,896.66	-€452,073.63
17/05/2018	€593,740.37	-€32,805.11	-€465,617.30
18/05/2018	€627,731.85	-€46,799.37	-€461,711.78
19/05/2018	€707,433.90	-€7,511.52	-€394,610.91
20/05/2018	€806,721.45	€32,654.32	-€387,136.40
21/05/2018	€698,196.21	-€45,228.18	-€453,180.03
22/05/2018	€509,527.67	€19,402.12	-€465,672.93
23/05/2018	€610,150.52	-€27,168.59	-€465,920.15
24/05/2018	€630,213.62	-€57,475.87	-€469,362.44
25/05/2018	€492,144.84	€10,485.81	-€437,371.04
26/05/2018	€401,964.16	-€4,139.69	-€398,672.37
27/05/2018	€623,178.18	€17,427.05	-€385,545.56
28/05/2018	€215,188.60	€5,757.42	-€459,682.54
29/05/2018	€362,356.62	-€16,574.30	-€465,685.93
30/05/2018	€429,909.58	€13,245.44	-€464,769.61
31/05/2018	€507,206.24	€13,139.90	-€478,796.42
01/06/2018	€774,907.75	€4,450.09	-€469,819.74

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02/06/2018	€564,699.24	€3,176.93	-€426,387.20
03/06/2018	€905,901.77	-€7,784.04	-€397,865.40
04/06/2018	€899,382.74	€10,021.50	-€420,978.16
05/06/2018	€770,757.87	€3,680.03	-€464,073.06
06/06/2018	€585,691.89	€21,859.19	-€465,883.77
07/06/2018	€609,431.48	€73,465.21	-€465,887.17
08/06/2018	€450,918.05	-€56,448.00	-€459,782.08
09/06/2018	€439,205.37	-€13,612.57	-€416,721.59
10/06/2018	€666,277.67	€22,972.53	-€396,133.12
11/06/2018	€407,139.81	-€5,769.70	-€447,847.89
12/06/2018	€422,380.52	€18,102.17	-€458,446.55
13/06/2018	€1,066,395.54	-€683.30	-€438,212.56
14/06/2018	€1,075,534.41	€23,861.33	-€418,518.06
15/06/2018	€430,459.99	€5,998.31	-€438,462.38
16/06/2018	€586,480.71	€7,839.55	-€389,230.57
17/06/2018	€395,342.30	€10,222.54	-€378,296.13
18/06/2018	€459,245.99	-€5,069.85	-€430,275.14
19/06/2018	€691,665.25	-€31,112.61	-€456,111.09
20/06/2018	€588,716.49	€1,021.92	-€431,424.03
21/06/2018	€280,069.27	-€11,208.62	-€438,888.89
22/06/2018	€369,145.62	-€57,682.38	-€451,126.74
23/06/2018	€453,750.61	-€54,497.40	-€414,304.28
24/06/2018	€693,618.06	-€16,092.50	-€397,331.54
25/06/2018	€652,847.94	-€24,231.01	-€459,901.45
26/06/2018	€856,780.81	-€21,064.39	-€468,062.97
27/06/2018	€957,699.50	€4,602.22	-€471,801.83
28/06/2018	€706,222.68	€17,996.16	-€470,928.34
29/06/2018	€349,982.78	-€16,314.74	-€461,594.53

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30/06/2018	€400,923.52	€1,672.97	-€411,829.10
01/07/2018	€490,824.37	-€1,231.81	-€375,080.72
02/07/2018	€440,887.16	€9,846.77	-€433,646.04
03/07/2018	€326,753.08	-€4,726.40	-€458,334.42
04/07/2018	€295,601.50	€386.79	-€463,494.48
05/07/2018	€622,208.63	-€18,934.52	-€463,643.89
06/07/2018	€522,059.05	€26,843.01	-€458,385.44
07/07/2018	€369,983.95	-€60,160.06	-€417,581.14
08/07/2018	€556,182.44	-€3,403.82	-€398,554.35
09/07/2018	€621,020.46	€16,233.88	-€446,696.80
10/07/2018	€556,022.17	€4,824.13	-€452,748.22
11/07/2018	€545,419.91	-€9,697.04	-€456,093.26
12/07/2018	€943,358.48	-€32,654.91	-€444,994.56
13/07/2018	€507,272.75	€7,243.84	-€447,406.48
14/07/2018	€265,408.96	-€1,311.50	-€397,425.95
15/07/2018	€457,356.57	-€5,707.06	-€387,991.05
16/07/2018	€493,159.41	-€3,758.17	-€447,035.29
17/07/2018	€386,594.00	-€21,502.74	-€457,194.00
18/07/2018	€397,220.68	-€3,058.54	-€461,606.62
19/07/2018	€447,695.02	€6,155.80	-€456,579.84
20/07/2018	€254,941.24	-€1,423.33	-€452,222.41
21/07/2018	€469,786.75	-€2,898.22	-€413,480.16
22/07/2018	€377,928.78	€1,891.93	-€402,020.25
23/07/2018	€436,414.74	-€1,567.51	-€459,305.86
24/07/2018	€296,230.38	-€6,330.40	-€458,320.28
25/07/2018	€171,994.06	-€1,337.69	-€446,246.40
26/07/2018	€180,210.06	€14,687.37	-€438,208.27
27/07/2018	€389,140.55	-€4,481.69	-€446,467.26

28/07/2018	€611,077.48	-€2,155.13	-€390,208.79
29/07/2018	€299,358.70	-€13,932.95	-€385,402.26
30/07/2018	€641,715.27	-€8,500.80	-€423,872.47
31/07/2018	€645,096.31	€6,080.68	-€418,667.98

Table 23 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

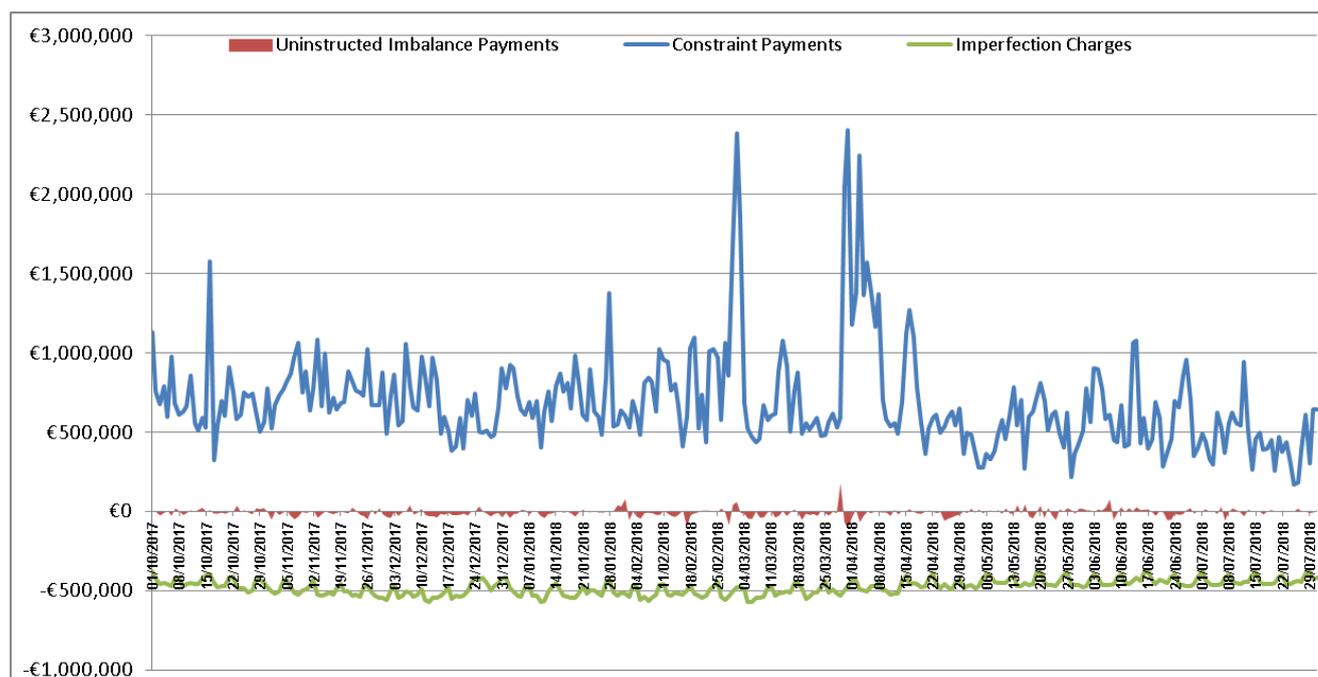


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
40	€250,374.71
41	€83,919.38
42	€25,546.52
43	€167,868.48
44	€30,640.51
45	€178,465.56
46	€145,307.99
47	€77,955.85
48	€115,343.57
49	€128,242.43
50	€41,192.83
51	€94,676.92
52	€172,216.83
53	€1,173.60

1	€107,082.71
2	€30,512.12
3	€224,880.02
4	€106,178.86
5	€123,059.19
6	€167,143.45
7	€401,463.16
8	€150,530.08
9	€277,810.65
10	€148,161.81
11	€268,147.87
12	€132,721.64
13	€203,473.93
14	€136,206.95
15	€176,440.28
16	€218,283.31
17	€110,230.01
18	€123,760.27
19	€310,134.10
20	€76,500.72
21	€81,054.33
22	€209,957.04
23	€152,107.64
24	€375,367.36
25	€256,033.20
26	€222,637.79
27	€102,188.58
28	€127,167.11
29	€57,088.99

Table 24 - Make Whole Payments

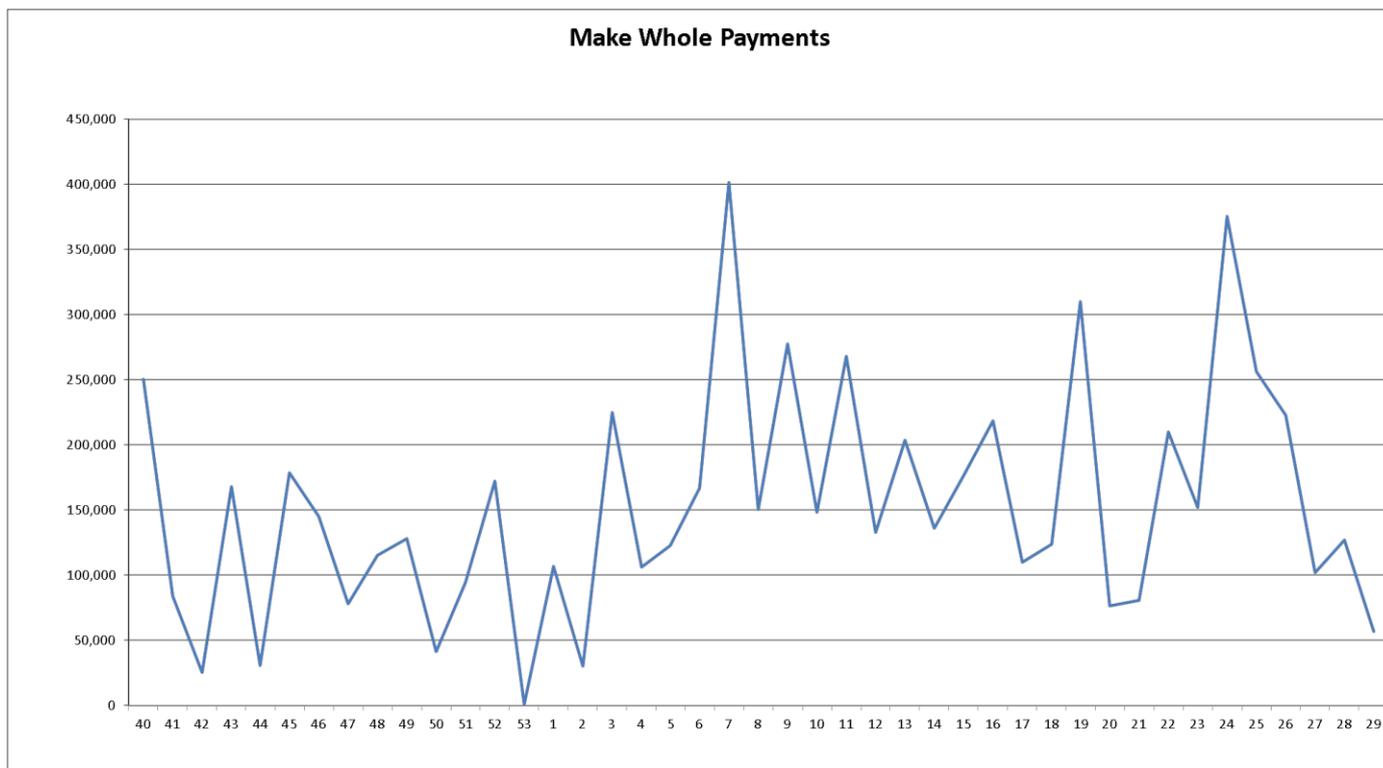


Figure 25 - Make Whole Payments

Week No	Testing Charges
40	-€47,420.09
41	-€31,943.73
42	-€37,408.75
43	-€44,370.66
44	-€31,520.74
45	-€1,129.07
46	€0.00
47	-€31,615.34
48	-€37,036.09
49	-€22,408.67
50	€0.00
51	€0.00
52	€0.00
53	-€14,644.78
1	€0.00
2	€0.00
3	€0.00
4	-€13,810.58
5	€0.00

6	€0.00
7	€0.00
8	€0.00
9	-€13,485.14
10	-€25,018.88
11	-€80,441.96
12	€0.00
13	€0.00
14	€0.00
15	€0.00
16	€0.00
17	€0.00
18	€0.00
19	-€6,864.45
20	-€197,796.72
21	€0.00
22	€0.00
23	-€97,685.52
24	€0.00
25	-€59,666.90
26	€0.00
27	-€47,060.96
28	-€103,805.34
29	€0.00

Table 25 - Testing Charges

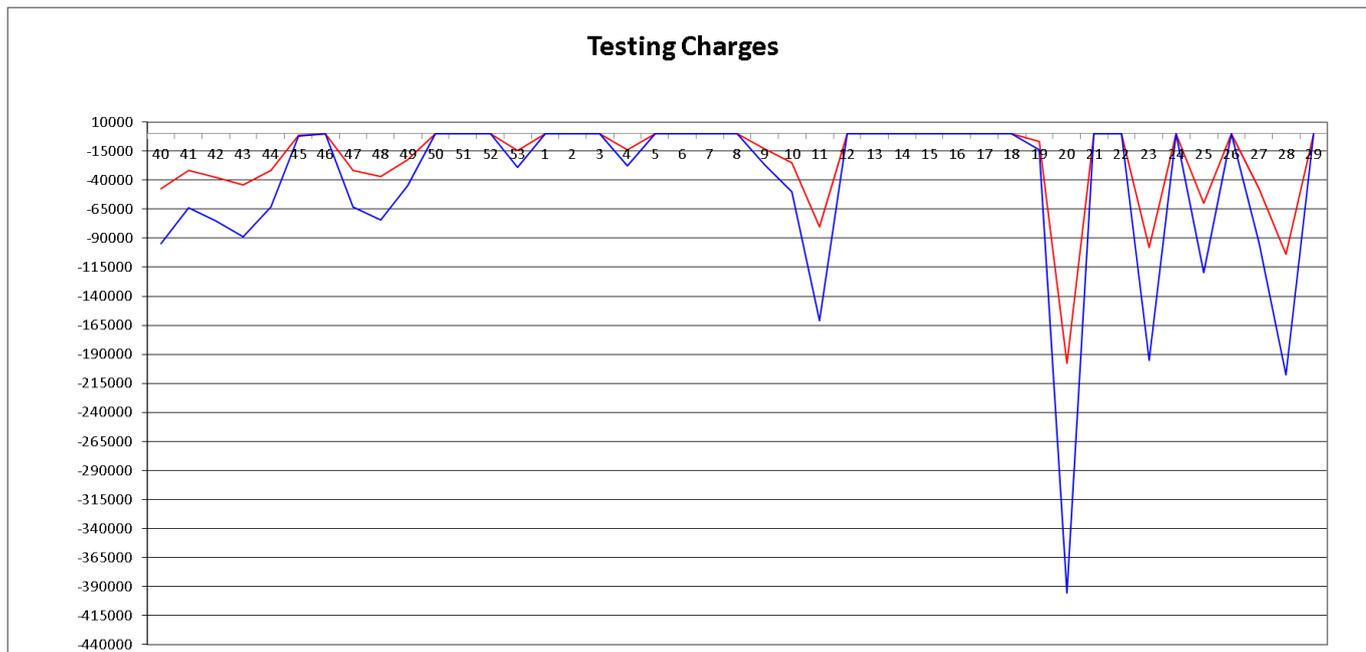


Figure 26 - Testing Charges

Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during July 2018 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_400133	DSU_402180	28			28
PT_500115	DSU_501600	8			8
PT_400138	DSU_401590	31			31
PT_400133	DSU_401910	14			14
PT_400106	DSU_401330	31			31
PT_400138	DSU_402040	31			31
PT_500105	DSU_501510	4			4
PT_400024	GU_400120	31			31
PT_400024	GU_400121	32			32
PT_400030	GU_400180	31			31
PT_400030	GU_400181	31			31
PT_400030	GU_400182	31			31
PT_400030	GU_400183	31			31
PT_400030	GU_400200	31			31
PT_400030	GU_400201	31			31
PT_400030	GU_400202	31			31
PT_400030	GU_400203	31			31
PT_400030	GU_400210	31			31
PT_400030	GU_400211	31			31
PT_400030	GU_400220	31			31
PT_400030	GU_400221	31			31
PT_400030	GU_400240	31			31
PT_400030	GU_400250	31			31
PT_400030	GU_400251	31			31
PT_400030	GU_400252	31			31
PT_400030	GU_400260	31			31
PT_400030	GU_400270	31			31
PT_400030	GU_400271	35			35
PT_400030	GU_400272	31			31
PT_400030	GU_400280	31			31
PT_400030	GU_400281	31			31
PT_400030	GU_400290	31			31
PT_400030	GU_400300	31			31
PT_400030	GU_400311	31			31
PT_400030	GU_400324	32			32

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PT_400030	GU_400325	32			32
PT_400030	GU_400360	31			31
PT_400030	GU_400361	31			31
PT_400030	GU_400362	31			31
PT_400030	GU_400363	31			31
PT_400030	GU_400370	31			31
PT_400030	GU_400850	31			31
PT_400030	GU_402080	31			31
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	52			52
PT_400037	GU_400500	32			32
PT_400041	GU_400530	58			58
PT_400044	GU_400540	52			52
PT_400054	GU_400620	31			31
PT_400055	GU_400630	31			31
PT_400064	GU_400750	31			31
PT_400064	GU_400751	31			31
PT_400064	GU_400752	31			31
PT_400064	GU_400753	31			31
PT_400064	GU_400762	32			32
PT_400064	GU_400770	31			31
PT_400064	GU_400771	31			31
PT_400064	GU_400780	31			31
PT_400064	GU_400781	31			31
PT_400075	GU_400930	37			37
PT_400077	GU_400950	31			31
PT_400078	GU_401010	31			31
PT_400078	GU_401011	31			31
PT_400165	GU_401840	31			31
PT_400172	GU_401860	32			32
PT_400198	GU_402030	2			2
PT_500024	GU_500040	32			32
PT_500024	GU_500041	31			31
PT_500027	GU_500130	84			84
PT_500027	GU_500131	84			84
PT_500027	GU_500140	84			84
PT_500034	GU_501350	31			31
PT_500040	GU_500281	31			31
PT_500040	GU_500282	31			31
PT_500040	GU_500283	31			31
PT_500040	GU_500284	31			31
PT_500045	GU_500820	31			31
PT_500045	GU_500821	31			31
PT_500045	GU_500822	31			31
PT_500045	GU_500823	31			31
PT_500045	GU_500824	31			31

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PT_500045	GU_500825	31			31
PT_500048	GU_500904	47			47
PT_500050	GU_501040	28			28
PT_500050	GU_501050	28			28
PT_500050	GU_501150	27			27
PT_500050	GU_501190	28			28
PT_500050	GU_501430	28			28
PT_500050	GU_501440	28			28
PT_500053	GU_501130	31			31
PT_500066	GU_501210	31			31
PT_500083	I_NIMOYLE	92			92
PT_400201	I_ROIEWIC	46			46
PT_500075	I_NIMOYLE	93			93
PT_500024	I_NIMOYLE	31			31
PT_400163	I_ROIEWIC	91			91
PT_400157	I_ROIEWIC	24			24
PT_500069	I_NIMOYLE	93			93
PT_500031	I_NIMOYLE	31			31
PT_400096	I_ROIEWIC	93			93
PT_500112	I_NIMOYLE	2			2
PT_400168	I_ROIEWIC	41			41
PT_500081	I_NIMOYLE	27			27
PT_400136	I_ROIEWIC	92			92
PT_400115	I_ROIEWIC	31			31
PT_400108	I_ROIEWIC	55			55
PT_400171	I_ROIEWIC	24			24
PT_500120	I_NIMOYLE	39			39
PT_500070	I_NIMOYLE	55			55
PT_400164	I_ROIEWIC	24			24
PT_500092	I_NIMOYLE	24			24
PT_500085	I_NIMOYLE	24			24
PT_400030	I_ROIEWIC	31			31
PT_400144	DSU_401660			31	31
PT_400090	DSU_401620			31	31
PT_400116	DSU_401400			31	31
PT_400116	DSU_402120			31	31
PT_400124	DSU_401490			31	31
PT_400090	DSU_401800			31	31
PT_400090	DSU_401850			31	31
PT_500064	DSU_501200			31	31
PT_500078	DSU_501330			31	31
PT_400090	DSU_401610			31	31
PT_500105	DSU_501510			27	27
PT_400090	DSU_401270			31	31
PT_500099	DSU_501460			31	31
PT_400090	DSU_403120			31	31
PT_500067	DSU_501380			31	31
PT_400111	DSU_401390			31	31
PT_400133	DSU_402180			3	3
PT_400116	DSU_402100			31	31

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PT_400133	DSU_401910			17	17
PT_500098	DSU_501450			31	31
PT_400116	DSU_401870			31	31
PT_400124	DSU_401880			31	31
PT_500108	DSU_501560			31	31
PT_400133	DSU_401530			31	31
PT_400116	DSU_402090			31	31
PT_400021	GU_400021			31	31
PT_400021	GU_400050			31	31
PT_400021	GU_400060			31	31
PT_400021	GU_400070			31	31
PT_400021	GU_400080			31	31
PT_400021	GU_400591			31	31
PT_400021	GU_400600			31	31
PT_400021	GU_400910			31	31
PT_400021	GU_400920			31	31
PT_400021	GU_401080			31	31
PT_400021	GU_401380			31	31
PT_400021	GU_401640			31	31
PT_400021	GU_401960			31	31
PT_400021	GU_401990			31	31
PT_400025	GU_400130			31	31
PT_400030	GU_402080			1	1
PT_400032	GU_400430			1	1
PT_400034	GU_400940			1	1
PT_400034	GU_401090			1	1
PT_400034	GU_401440			1	1
PT_400034	GU_401680			1	1
PT_400038	GU_400550			31	31
PT_400050	GU_400650			31	31
PT_400050	GU_400660			31	31
PT_400050	GU_401000			31	31
PT_400050	GU_401060			31	31
PT_400050	GU_401150			31	31
PT_400050	GU_401240			31	31
PT_400050	GU_401250			31	31
PT_400050	GU_401280			31	31
PT_400050	GU_401290			31	31
PT_400050	GU_401360			31	31
PT_400050	GU_401790			31	31
PT_400050	GU_401920			31	31
PT_400050	GU_401930			31	31
PT_400050	GU_402010			31	31
PT_400054	GU_400620			1	1
PT_400055	GU_400630			1	1
PT_400062	GU_400730			31	31
PT_400062	GU_400731			31	31
PT_400062	GU_400840			31	31
PT_400066	GU_401540			31	31
PT_400066	GU_401820			31	31

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PT_400077	GU_400950			1	1
PT_400082	GU_401100			31	31
PT_400087	GU_401230			31	31
PT_400148	GU_401690			31	31
PT_400150	GU_401700			31	31
PT_400151	GU_401770			31	31
PT_400151	GU_401780			31	31
PT_400152	GU_401710			31	31
PT_400152	GU_401720			31	31
PT_400152	GU_401730			31	31
PT_400152	GU_401740			31	31
PT_400152	GU_401750			31	31
PT_400152	GU_401760			31	31
PT_400162	GU_401830			31	31
PT_400178	GU_401900			31	31
PT_400197	GU_402020			31	31
PT_400198	GU_402030			31	31
PT_500021	GU_500010			31	31
PT_500021	GU_500740			31	31
PT_500021	GU_501160			31	31
PT_500021	GU_501500			31	31
PT_500021	GU_501520			31	31
PT_500021	GU_501550			31	31
PT_500021	GU_501620			31	31
PT_500021	GU_501630			31	31
PT_500021	GU_501710			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
PT_500032	GU_501530			31	31
PT_500032	GU_501540			31	31
PT_500032	GU_501570			31	31
PT_500034	GU_501680			31	31
PT_500039	GU_500270			31	31
PT_500044	GU_500720			31	31
PT_500047	GU_500790			31	31
PT_500050	GU_501040			4	4
PT_500050	GU_501050			4	4
PT_500050	GU_501150			5	5
PT_500050	GU_501190			4	4
PT_500050	GU_501430			4	4
PT_500050	GU_501440			4	4
PT_500061	GU_501170			31	31
PT_500062	GU_501180			31	31
PT_500066	GU_501210			1	1
PT_500073	GU_501230			31	31
PT_500074	GU_501250			31	31

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PT_500089	GU_501360			31	31
PT_500103	GU_501480			31	31
	Total	4151	0	3213	7364
	Percentage	56.37%	0.00%	43.63%	100.00%

Table 26 – 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
Aug-16	ROI	£53,390,805.17	£17,305,691.08	£1,082,673.75	£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	£6,312.45	£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	£83,238.23	£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	£4,395,559.58	£220,252.61	£81,663.62	£17,630.00	£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	£30,128,634.39	£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	£175.23	£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	31,446,971.83
Feb-17	ROI	£68,417,749.71	£27,553,403.45	£786,234.64	£143,736.31	£161,777.77	£822.69	£56,371.33	£22,936.28	£671.74	£0.00	£0.00	£0.00	97,143,704.52
	NI	£26,623,159.66	£8,331,870.29	£208,457.12	£84,873.05	£12,863.18	£479.73	£65,781.22	£10,545.70	£290.27	£0.00	£0.00	£0.00	35,338,320.22
Mar-17	ROI	£66,590,904.20	£25,939,739.73	£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	£14,276.36	£577.22	£0.00	£0.00	£0.00	35,470,881.81
Apr-17	ROI	£56,165,195.56	£24,426,665.10	£727,000.54	£536,698.08	£142,324.28	£3,531.15	£45,125.24	£18,620.07	£596.12	£0.00	£0.00	£0.00	82,065,756.14
	NI	£17,358,282.80	£7,584,088.13	£179,414.93	£127,102.29	£27,651.79	£859.38	£60,044.36	£25,589.38	£801.90	£0.00	£0.00	£0.00	25,363,834.96
May-17	ROI	£44,648,195.71	£19,781,317.86	£700,841.87	£489,950.65	£142,425.65	£2,974.84	£51,455.64	£17,883.26	£699.50	£0.00	£0.00	£0.00	65,835,744.98
	NI	£16,364,613.24	£5,548,133.24	£193,862.58	£108,402.43	£29,733.84	£622.87	£88,001.70	£33,781.45	£1,179.59	£0.00	£0.00	£0.00	22,944,330.94
Jun-17	ROI	£50,996,714.24	£18,508,382.13	£841,895.70	£669,713.90	£198,750.84	£4,394.88	£65,063.85	£16,276.33	£866.44	£0.00	£0.00	£0.00	71,503,198.91
	NI	£18,134,740.54	£5,385,407.39	£213,872.53	£138,837.43	£30,982.10	£823.10	£148,093.71	£42,384.03	£1,836.46	£0.00	£0.00	£0.00	24,096,977.29
Jul-17	ROI	£53,839,556.76	£18,468,543.17	£689,850.17	£859,675.25	£105,231.46	£1,843.13	£47,200.17	£31,615.25	£600.31	£0.00	£0.00	£0.00	74,045,115.67
	NI	£16,871,524.38	£4,970,215.26	£169,319.17	£206,699.63	£26,416.99	£609.40	£122,939.50	£47,342.00	£1,363.62	£0.00	£0.00	£0.00	22,416,435.95
Aug-17	ROI	£49,715,868.99	£16,597,661.81	£670,887.89	£189,567.77	£43,405.94	£1,189.91	£131,434.13	£36,135.62	£1,706.37	£1.41	£0.00	£0.00	67,393,859.84
	NI	£15,604,259.43	£4,539,253.85	£174,636.65	£71,879.64	£24,102.33	£515.19	£11,674.35	£2,739.04	£123.94	£52.50	£0.00	£0.00	20,429,296.98
Sep-17	ROI	£74,262,007.43	£18,246,287.18	£871,978.12	£297,529.91	£58,164.04	£2,322.12	£47,978.01	£13,495.87	£504.35	£163,227.43	£0.00	£0.00	93,963,494.46
	NI	£26,213,019.19	£5,128,326.58	£230,350.58	£81,360.23	£23,139.40	£499.97	£13,331.20	£6,511.87	£297.83	£140,679.45	£0.00	£0.00	31,837,516.30
Oct-17	ROI	£64,383,218.39	£18,184,430.56	£721,054.00	£289,078.01	£109,973.68	£2,586.90	£32,785.64	£11,166.82	£447.56	£0.00	£0.00	£0.00	83,734,801.56
	NI	£18,177,387.18	£5,365,068.45	£188,849.52	£78,539.81	£23,503.63	£650.99	£10,931.60	£2,877.72	£134.29	£0.00	£0.00	£0.00	23,847,943.19
Nov-17	ROI	£83,791,449.9	£24,787,352	£701,890	£413,698	£113,547	£3,295	£122,794	£33,971	£718	£458,369	£6,145	£2,550	110,519,371
	NI	£22,118,497	£6,651,371	£204,783	£141,841	£56,639	£1,085	£61,621	£21,195	£400	£705	£2,550	£2,550	£29,263,237
Dec-17	ROI	£108,724,596.96	£30,213,314.37	£1,032,089.87	£386,043.20	£61,761.35	£2,747.14	£91,579.26	£20,859.90	£558.92	£354,184.96	£196,828.99	£196,828.99	141,281,393.91
	NI	£35,009,530.01	£7,435,318.60	£270,080.16	£180,156.15	£72,189.79	£1,323.93	£45,368.58	£11,660.54	£288.42	£58,353.41	£11,091.72	£11,091.72	43,106,453.03
Jan-18	ROI	£66,824,387.64	£31,236,649.01	£796,356.35	£272,646.34	£136,640.90	£1,965.48	£58,253.29	£18,996.49	£347.05	£320.44	£2,955.28	£2,955.28	99,350,473.55
	NI	£21,801,403.00	£8,153,351.60	£211,139.18	£105,764.72	£76,139.37	£734.71	£22,938.26	£7,983.39	£150.76	£275,137.08	£85,908.52	£85,908.52	30,826,559.11
Feb-18	ROI	£73,894,145.46	£29,049,213.63	£821,611.24	£239,608.70	£442,118.67	£1,727.82	£34,763.85	£73,083.63	£225.56	£0.00	£0.00	£0.00	104,556,498.56
	NI	£23,559,299.88	£8,534,268.31	£214,366.57	£214,152.33	£80,930.26	£1,369.32	£27,935.49	£8,821.89	£160.29	£0.00	£0.00	£0.00	32,702,304.34
Mar-18	ROI	£83,664,309	£0	£194,992	£674,215	£284,390	£3,439	£95,181	£158,339	£583	£0	£0	£0	£85,075,447
	NI	£32,334,060	£0	£50,052	£163,160	£102,559	£899	£50,645	£71,098	£380	£0	£0	£0	£32,772,854
Apr-18	ROI	£69,317,323	£23,231,814	£783,294	£970,456	£256,503	£5,627	£71,337	£267,758	£516	£0	£0	£0	£94,904,628
	NI	£23,659,859	£7,429,700	£190,874	£151,575	£33,802	£816	£72,822	£115,446	£533	£0	£0	£0	£31,655,427
May-18	ROI	£77,304,833	£22,485,464	£739,608	£1,395,991	£384,788	£8,896	£89,490	£221,592	£645	£0	£0	£0	£102,631,308
	NI	£21,411,034	£6,005,961	£181,189	£109,484	£23,056	£674	£114,243	£62,751	£823	£0	£0	£0	£27,909,222
Jun-18	ROI	£110,729,885	£22,412,350	£892,166	£2,294,901	£444,742	£12,880	£101,002	£74,247	£805	£417,974	£0	£0	£137,380,852
	NI	£29,772,183	£5,362,582	£213,124	£111,573	£27,385	£607	£183,273	£95,348	£1,350	£16	£0	£0	£35,767,439
Jul-18	ROI	£91,566,909	£20,553,253	£732,984	£1,335,293	£324,878	£6,367	£47,651	£89,704	£431	£0	£0	£0	£114,657,469
	NI	£24,824,845	£5,305,704	£169,676	£164,048	£26,544	£654	£124,634	£100,028	£1,063	£0	£0	£0	£30,717,196

Table 27 – Total Charges by Month

Market Operator Monthly Report

Market		Energy	Capacity	M-4 Energy	M-4 Capacity	M-4 Market Operator	M-13 Energy	M-13 Capacity	M-13 Market Operator	Ad-hoc Energy	Ad-hoc Capacity	Ad-hoc Market Operator	Total
Aug-16	ROI	147,925,137.80	117,191,335.52	1205,102.11	145,376.26	11,900.83	146,132.09	112,064.34	1323.00	10.00	10.00	10.00	165,427,371.95
	NI	113,904,887.07	13,784,287.20	126,383.41	16,359.83	1294.55	12,874.89	12,261.38	118.45	10.00	10.00	10.00	117,728,566.84
Sep-16	ROI	157,725,046.88	117,191,335.52	1316,785.33	182,962.59	14,207.29	147,913.59	18,957.12	1354.44	10.00	1295.52	10.00	175,377,858.28
	NI	115,318,157.70	13,784,287.20	132,790.23	17,927.66	1416.78	14,847.59	11,185.01	133.38	10.00	12,875.40	10.00	119,752,520.95
Oct-16	ROI	169,372,353.07	120,863,182.68	1338,586.57	195,502.31	14,333.45	187,892.25	114,736.13	1359.59	10.00	10.00	10.00	191,377,546.05
	NI	125,586,214.40	14,376,394.83	177,787.35	118,365.43	1977.30	111,874.98	11,647.25	185.65	10.00	10.00	10.00	130,073,347.19
Nov-16	ROI	183,487,123.38	126,395,539.72	1257,668.44	180,165.18	13,418.32	194,355.82	139,305.46	1618.26	1301,630.28	10.00	172.04	1110,659,956.90
	NI	131,306,401.54	16,468,679.78	1173,737.66	174,786.08	12,148.38	143,017.39	120,271.13	1422.26	1832.79	10.00	10.00	138,090,297.01
Dec-16	ROI	195,266,581.65	127,572,460.28	1447,482.30	1114,736.82	16,025.28	197,017.33	132,733.66	11,076.70	1496,715.14	10.00	11,512.38	1124,036,341.54
	NI	135,841,749.90	16,989,191.13	1197,537.73	149,301.94	12,219.49	125,889.47	112,309.63	1304.11	187.68	10.00	10.00	143,118,591.08
Jan-17	ROI	175,626,838.35	126,766,502.24	1158,454.05	190,014.92	12,220.87	157,510.67	143,928.85	1718.84	10.00	10.00	10.00	1102,746,189.39
	NI	125,518,177.37	17,218,837.74	1105,159.01	137,420.47	11,201.46	113,624.71	18,406.28	1166.14	10.00	10.00	10.00	132,902,993.18
Feb-17	ROI	172,035,479.90	127,979,553.27	1155,130.29	1146,308.11	1822.54	152,898.05	123,287.43	1672.03	10.00	10.00	10.00	1100,394,151.62
	NI	127,677,936.42	18,012,556.21	184,363.22	126,404.97	1479.76	126,710.73	110,373.95	1304.45	10.00	10.00	10.00	135,839,789.71
Mar-17	ROI	174,265,358.01	125,788,084.66	1532,016.14	1116,104.70	13,141.82	139,271.10	113,708.08	1638.20	10.00	10.00	10.00	1100,758,922.71
	NI	127,816,469.38	18,149,368.84	176,024.05	112,908.20	1406.88	132,923.50	114,410.91	1582.61	10.00	10.00	10.00	136,103,094.37
Apr-17	ROI	156,718,380.85	124,463,279.10	1537,285.75	1147,053.40	13,530.38	145,104.86	118,331.73	1536.32	10.00	10.00	10.00	181,933,562.39
	NI	118,526,297.40	17,555,445.68	1125,968.13	123,710.00	1645.79	153,866.13	125,832.73	1810.81	10.00	10.00	10.00	126,318,576.87
May-17	ROI	145,161,376.39	118,086,733.29	1488,856.77	1139,195.42	12,589.27	162,916.83	117,794.83	1699.70	10.00	10.00	10.00	163,960,162.50
	NI	119,510,303.26	16,964,363.87	1107,751.82	132,525.65	1619.02	188,078.61	133,838.58	1182.28	10.00	10.00	10.00	126,738,663.09
Jun-17	ROI	152,758,436.23	117,355,294.13	1882,852.53	1191,441.91	13,661.42	165,347.10	116,420.10	1869.48	10.00	10.00	10.00	171,274,382.90
	NI	120,252,622.96	16,380,475.07	1138,076.17	137,635.41	1816.77	148,166.13	142,425.33	11,836.50	10.00	10.00	10.00	127,002,114.34
Jul-17	ROI	154,277,998.32	117,477,373.72	1846,835.48	1102,146.67	11,651.30	147,723.87	134,509.09	1601.00	10.00	10.00	10.00	172,788,839.45
	NI	118,773,354.99	15,850,870.07	1230,926.67	129,088.46	1609.37	122,267.41	144,738.41	11,404.46	10.00	10.00	10.00	125,053,259.84
Aug-17	ROI	150,562,528.38	115,345,661.50	1190,289.53	150,188.86	11,330.67	130,457.46	135,704.06	11,694.02	10.00	10.00	10.00	166,317,856.48
	NI	118,103,577.29	15,650,171.54	111,815.23	123,380.11	1512.28	111,510.00	13,159.55	1146.77	145.51	10.00	10.00	123,864,318.28
Sep-17	ROI	177,198,039.75	116,935,824.39	1297,316.08	158,064.10	12,315.75	136,227.08	114,579.25	1480.13	1329,748.86	10.00	1736.80	194,873,332.19
	NI	129,090,989.44	16,342,522.98	181,307.50	123,116.39	1615.25	124,625.76	15,539.12	1177.97	1254,051.02	10.00	14.28	135,822,949.71
Oct-17	ROI	166,627,076.69	117,573,435.30	1379,168.29	1109,325.13	12,586.81	131,769.76	111,103.25	1435.24	10.00	10.00	10.00	184,734,900.47
	NI	122,549,009.87	15,897,549.80	179,103.03	124,197.26	1648.45	110,935.82	12,957.83	1134.12	10.00	10.00	10.00	128,564,536.18
Nov-17	ROI	183,230,541	123,930,421	1473,719	1114,595	13,363	122,843	133,951	1718	1645,100	14,985	1800	1108,561,035
	NI	125,746,600	17,365,655	1145,319	155,530	11,080	161,622	121,196	1399	1274	13,545	10	133,401,221
Dec-17	ROI	1106,835,064.33	127,957,453.42	1397,100.73	198,040.58	12,984.78	191,151.49	120,818.71	1556.31	1336,745.88	1173,793.95	1644.35	1135,914,354.53
	NI	137,790,994.99	19,466,911.04	181,354.27	140,293.46	11,305.84	145,734.51	111,769.44	1290.16	157,624.89	131,404.66	1288.16	147,627,971.42
Jan-18	ROI	166,556,846.79	130,184,516.90	1264,692.47	1140,421.82	1600.74	156,245.08	118,749.58	1346.74	137.23	116,333.45	10.00	197,238,790.80
	NI	124,598,645.75	19,075,819.96	1105,487.86	172,782.55	1685.44	122,940.69	118,209.56	1150.74	1270,100.11	174,414.80	11,311.93	134,230,549.39
Feb-18	ROI	173,649,373.32	128,234,770.33	1241,672.56	1232,622.38	11,496.49	133,903.63	130,769.95	1220.04	10.00	10.00	10.00	1102,484,828.70
	NI	126,522,258.99	19,276,145.07	1211,340.35	1267,052.17	11,368.55	128,772.37	154,122.68	1164.70	10.00	10.00	10.00	136,361,224.88
Mar-18	ROI	185,513,434	10	1691,820	1303,976	13,298	194,253	1188,330	1578	10	10	10	186,795,628
	NI	137,437,280	10	1170,030	151,265	1898	151,265	145,028	1384	10	10	10	137,790,647
Apr-18	ROI	169,267,924	120,860,692	1945,469	1237,063	13,887	1193,101	1310,897	1516	10	10	10	131,819,549
	NI	132,845,010	19,450,019	1150,560	150,635	1818	172,832	177,370	1533	10	10	10	142,647,777
May-18	ROI	173,986,199	121,003,133	1133,265	1344,914	14,639	189,323	1138,550	1645	10	10	10	196,900,668
	NI	123,049,174	17,260,826	1111,164	158,347	1686	1114,206	1136,262	1823	10	10	10	130,731,488
Jun-18	ROI	1106,186,794	120,271,630	12,266,420	1404,741	16,062	1101,282	180,377	1791	1394,961	10	1884	1129,714,001
	NI	132,258,574	17,261,868	1115,238	162,628	1627	1183,374	189,625	11,350	1852	10	12	139,974,138
Jul-18	ROI	186,768,139	119,045,125	11383,691	1307,142	14,724	147,761	1123,685	1431	10	10	10	1107,680,698
	NI	125,508,813	16,579,825	1161,500	142,347	1738	1124,567	169,402	11,063	10	10	10	132,488,356

Table 28 - Total Payments by Month

Appendix H: Full Balancing Costs

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

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

Trading Market

Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
06/10/2017	39	€4,277,088.98	€0
13/10/2017	40	€2,482,838.95	€0
20/10/2017	41	€1,242,741.61	€0
27/10/2017	42	€2,017,373.96	€0
03/11/2017	43	€1,496,601.70	€0
10/11/2017	44	€1,138,507.50	€0
17/11/2017	45	€2,429,067.77	€0
24/11/2017	46	€1,847,665.06	€0
01/12/2017	48	€1,330,336.80	€0
08/12/2017	49	€1,452,421.60	€0
15/12/2017	50	€1,454,433.85	€0
22/12/2017	51	-€120,183.03	€0
05/01/2018	52	€668,708.17	€0
12/01/2018	53	€1,983,172.46	€0
19/01/2018	1	€534,352.28	€0
26/01/2018	2	€1,946,527.32	€0
02/02/2018	3	€1,107,021.02	€0
09/02/2018	4	€1,493,834.12	€0
16/02/2018	5	€1,362,758.37	€0
23/02/2018	6	€1,362,251.43	€0
02/03/2018	7	€2,236,125.89	€0
09/03/2018	8	€5,824,119.00	€0
16/03/2018	9	-€148,322.47	€0
23/03/2018	10	€1,754,733.96	€0
30/03/2018	11	€374,990.87	€0
07/04/2018	12	€3,709,200.97	€0
14/04/2018	13	€6,818,333.49	€0

21/04/2018	14	€1,405,312.25	€0
28/04/2018	15	€2,534,835.45	€0
05/05/2018	16	€578,885.36	€0
12/05/2018	17	-€361,792.43	€0
19/05/2018	18	€161,682.11	€0
26/05/2018	19	€1,067,155.44	€0
01/06/2018	20	€1,000,133.03	€0
08/06/2018	21	€367,381.73	€0
15/06/2018	22	€1,601,279.26	€0
22/06/2018	23	€1,740,138.42	€0
29/06/2018	24	€89,182.83	€0
06/07/2018	25	€1,423,194.26	€0
13/07/2018	26	-€49,824.63	€0
20/07/2018	27	€932,000.12	€0
27/07/2018	28	-€201,547.96	€0

Table 29 – 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
June 2018	€ -225.77	€0

Table 30 - 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>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>

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Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>May 2017</u>	<u>15/05/2017</u>	-	-	-	<u>05/05/2017</u> <u>14/05/2017</u>
<u>Jun 2017</u>	-	<u>02/06/2017</u> <u>29/06/2017</u>	-	-	<u>11/06/2017</u>
<u>July 2017</u>	<u>19/07/2017</u>	<u>01/08/2017</u>	-	-	-
<u>August 2017</u>	-	<u>17/08/2017</u>	<u>30/08/2017</u>	<u>18/08/2017</u>	<u>01/08/2017</u>
<u>September 2017</u>	<u>26/09/2017</u>	-	<u>04/09/2017</u> <u>18/09/2017</u> <u>20/09/2017</u>	<u>18/09/2017</u>	-
<u>October 2017</u>	<u>15/10/2017</u>	<u>03/10/2017</u> <u>24/10/2017</u> <u>26/10/2017</u>	<u>04/10/2017</u> <u>06/10/2017</u> <u>26/10/2017</u>	<u>20/10/2017</u> <u>24/10/2017</u> <u>26/10/2017</u>	<u>10/10/2017</u> <u>16/10/2017</u>
<u>November 2017</u>	-	<u>01/11/2017</u> <u>02/11/2017</u> <u>17/11/2017</u> <u>22/11/2017</u> <u>28/11/2017</u> <u>29/11/2017</u>	<u>02/11/2017</u> <u>07/11/2017</u> <u>22/11/2017</u> <u>29/11/2017</u>	<u>02/11/2017</u> <u>07/11/2017</u>	-
<u>December 2017</u>	-	<u>01/12/2017</u> <u>20/12/2017</u> <u>22/12/2017</u> <u>28/12/2017</u>	<u>07/12/2017</u> <u>09/12/2017</u> <u>20/12/2017</u> <u>21/12/2017</u>	<u>06/12/2017</u> <u>09/12/2017</u> <u>14/12/2017</u> <u>20/12/2017</u>	-

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Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>January 2018</u>	<u>07/01/2018</u>	<u>05/01/2018</u> <u>10/01/2018</u> <u>11/01/2018</u>	<u>23/01/2018</u> <u>24/01/2018</u>	<u>19/01/2018</u> <u>23/01/2018</u>	-
<u>February 2018</u>	-	<u>9/02/2018</u> <u>13/02/2018</u> <u>21/02/2018</u> <u>22/02/2018</u> <u>26/02/2018</u>	<u>10/02/2018</u> <u>14/02/2018</u> <u>21/02/2018</u>	<u>14/02/2018</u> <u>21/02/2018</u>	-
<u>March 2018</u>	-	<u>12/03/2018</u>	<u>15/03/2018</u> <u>19/03/2018</u>	<u>04/03/2018</u> <u>29/03/2018</u>	-
<u>April 2018</u>	-	-	<u>04/04/2018</u>	<u>24/04/2018</u>	-
<u>May2018</u>	-	<u>10/05/2018</u> <u>11/05/2018</u>	-	<u>10/05/2018</u> <u>13/05/2018</u> <u>14/05/2018</u> <u>15/05/2018</u>	<u>10/05/2018</u>
<u>June2018</u>	-	-	<u>19/06/2018</u> <u>20/06/2018</u> <u>24/06/2018</u>	<u>19/06/2018</u>	-
<u>July2018</u>	-	-	-	<u>10/07/2018</u>	-

Table 31 - MIP Algorithms

Operational Date	Trade Date	Run Type	LR Peak SMP	MIP Peak SMP	Published
02/10/2017	03/10/2017	EA2	€1,000	€217.09	MIP
05/10/2017	04/10/2017	EP1	€1,000	€90.22	MIP

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07/10/2017	06/10/2017	EP1	€1,000	€281.63	MIP
10/10/2017	10/10/2017	WD1	€-1,000	€279.20	MIP
14/10/2017	15/10/2017	EA1	€800	€283.57	MIP
16/10/2017	16/10/2017	WD1	€-100	€61.23	MIP
23/10/2017	24/10/2017	EA2	€1,000	€278.95	MIP
24/10/2017	20/10/2017	EP2	€1,000	€280.03	MIP
25/10/2017	26/10/2017	EA2	€1,000	€233.58	MIP
27/10/2017	26/10/2017	EP1	€1,000	€180.39	MIP
28/10/2017	24/10/2017	EP2	€1,000	€278.95	MIP
30/10/2017	26/10/2017	EP2	€1,000	€180.41	MIP
31/10/2017	01/11/2017	EA2	€1,000	€238.84	MIP
01/11/2017	02/11/2017	EA2	€1,000	€85.41	MIP
03/11/2017	02/11/2017	EP1	€1,000	€284.58	MIP
06/11/2017	02/11/2017	EP2	€1,000	€284.58	MIP
08/11/2017	07/11/2017	EP1	€1,000	€339.71	MIP
11/11/2017	07/11/2017	EP2	€1,000	€339.91	MIP
16/11/2017	17/11/2017	EA2	€1,000	€85.36	MIP
21/11/2017	22/11/2017	EA2	€1,000	€193.71	MIP
23/11/2017	22/11/2017	EP1	€1,000	€221.35	MIP
27/11/2017	28/11/2017	EA2	€1,000	€108.33	MIP
28/11/2017	29/11/2017	EA2	€1,000	€187.20	MIP
30/11/2017	29/11/2017	EP1	€1,000	€172.52	MIP
30/11/2017	01/12/2017	EA2	€1000.00	€283.15	MIP
08/12/2017	07/12/2017	EP1	€1000.00	€253.87	MIP

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10/12/2017	06/12/2017	EP2	-€100.00	€27.27	MIP
10/12/2017	09/12/2017	EP1	€1000.00	€916.29	MIP
13/12/2017	09/12/2017	EP2	€1000.00	€135.97	MIP
18/12/2017	14/12/2017	EP2	-€100.00	€283.70	MIP
19/12/2017	20/12/2017	EA2	€1000.00	€231.32	MIP
21/12/2017	22/12/2017	EA2	€1000.00	€186.70	MIP
21/12/2017	20/12/2017	EP1	€1000.00	€285.26	MIP
22/12/2017	21/12/2017	EP1	€1000.00	€400.67	MIP
24/12/2017	20/12/2017	EP2	€1000.00	€256.42	MIP
27/12/2017	28/12/2017	EA2	€1000.00	€226.38	MIP
04/01/2018	05/01/2018	EA2	€1000.00	€122.29	MIP
06/01/2018	07/01/2018	EA1	€900.00	€85.37	MIP
09/01/2018	10/01/2018	EA2	€1000.00	€235.37	MIP
10/01/2018	11/01/2018	EA2	€1000.00	€403.47	MIP
23/01/2018	19/01/2018	EP2	€1000.00	€156.69	MIP
24/01/2018	23/01/2018	EP1	€1000.00	€55.85	MIP
25/01/2018	24/01/2018	EP1	€1000.00	€106.77	MIP
27/01/2018	23/01/2018	EP2	€1000.00	€139.54	MIP
08/02/2018	09/02/2018	EA2	€1000.00	€250.13	MIP
11/02/2018	10/02/2018	EP1	-€88.79	€69.17	MIP
12/02/2018	13/02/2018	EA2	€1000.00	€219.35	MIP
15/02/2018	14/02/2018	EP1	€1000.00	€223.04	MIP
18/02/2018	14/02/2018	EP2	€1000.00	€157.40	MIP
20/02/2018	21/02/2018	EA2	€1000.00	€341.67	MIP

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22/02/2018	21/02/2018	EP1	€1000.00	€178.92	MIP
25/02/2018	21/02/2018	EP2	€1000.00	€282.20	MIP
21/02/2018	22/02/2018	EA2	€1000.00	€107.21	MIP
25/02/2018	26/02/2018	EA2	€1000.00	€212.14	MIP
08/03/2018	04/03/2018	EP2	€1000.00	€221.57	MIP
11/03/2018	12/03/2018	EA1	€1000.00	€208.60	MIP
16/03/2018	15/03/2018	EP1	€1000.00	€ 124.96	MIP
20/03/2018	19/03/2018	EP1	€1000.00	€283.28	MIP
02/04/2018	29/03/2018	EP2	€1000.00	€331.59	MIP
05/04/2018	04/04/2018	EP1	€1000.00	€86.92	MIP
28/04/2018	24/04/2018	EP2	€1000.00	€319.23	MIP
09/05/2018	10/05/2018	EA2	-€100.00	-€97.65	MIP
10/05/2018	10/05/2018	WD1	-€100.00	-€87.09	MIP
10/05/2018	11/05/2018	EA2	€1000.00	€198.98	MIP
14/05/2018	10/05/2018	EP2	-€100.00	-€87.09	MIP
17/06/2018	13/05/2018	EP2	-€100.00	-€100.00	MIP
18/05/2018	14/05/2018	EP2	€1000.00	€313.37	MIP
19/05/2018	15/05/2018	EP2	€1000.00	€817.80	MIP
20/06/2018	19/06/2018	EP1	€1000.00	€290.12	MIP
21/06/2018	20/06/2018	EP2	€1000.00	€285.10	MIP
23/06/2018	19/06/2018	EP2	€-100.00	€74.06	MIP
25/06/2018	24/06/2018	EP1	€1000.00	€142.03	MIP
14/07/2018	10/07/2018	EP2	€583.59	€76.24	MIP

Table 32 - MIP Vs LR Peak Price Comparison