



Market Operator Monthly Report

August 2016

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1. Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of August 2016 and is published in accordance with the Single Electricity Market (SEM) Committee decision and Clause 2.144 of the Trading and Settlement Code.

During the month of August 2016, Settlements had no late publications as per the Trading and Settlement code.

141 general queries were received in August 2016. During the same period 137 general queries were resolved.

There were 3 defaults by Participants during August 2016. The largest of these was an Energy Initial invoice for €2,817.81 which was remedied the same day.

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

2. 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 | | - | - |
| Market Participants | Pricing & Scheduling | - | - |
| | Settlement | - | - |
| | Funds Transfer | 3 | - |
| | Credit Risk Management | - | - |
| | Other | - | - |
| SEMO | Pricing & Scheduling | - | - |
| | Settlement | - | 1 |
| | Funds Transfer | - | - |
| | Credit Risk Management | - | - |
| Total | | 3 | 1 |

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

Four parties joined the Market in August 2016

- PY_000159 TrailStone GmbH
- PY_000160 Dunman Energy Supply Limited
- PY_000163 Gaelectric Sustainable Energy Supply 2 Limited
- PY_000164 Glanaruddery Energy Supply Limited

There were no terminating parties in August 2016.

The following units went effective in the Market in August 2016:

- PT_500098/DSU_501450 Activation Energy DSU
- PT_500097/SU_500085 Activation Energy TSSU
- PT_400116/DSU_401870 Electricity Exchange 2
- PT_400117/SU_400192 Electricity Exchange 2
- PT_400124/DSU_401880 Veolia Alternative Energy Ireland Limited
- PT_400125/SU_400193 Veolia Alternative Energy Ireland Ltd
- PT_500094/GU_501390 Cloonty Windfarm
- PT_400173/SU_400189 New Measured Power Ltd T/A Pinergy
- PT_400173/SU_400190 New Measured Power Ltd T/C Pinergy

No units de-registered from the Market in August 2016.

Suspension of Participants

There have been no Suspension Orders issued by the Market Operator at this time.

3. Financial Statistics

Total Charges for Each Currency

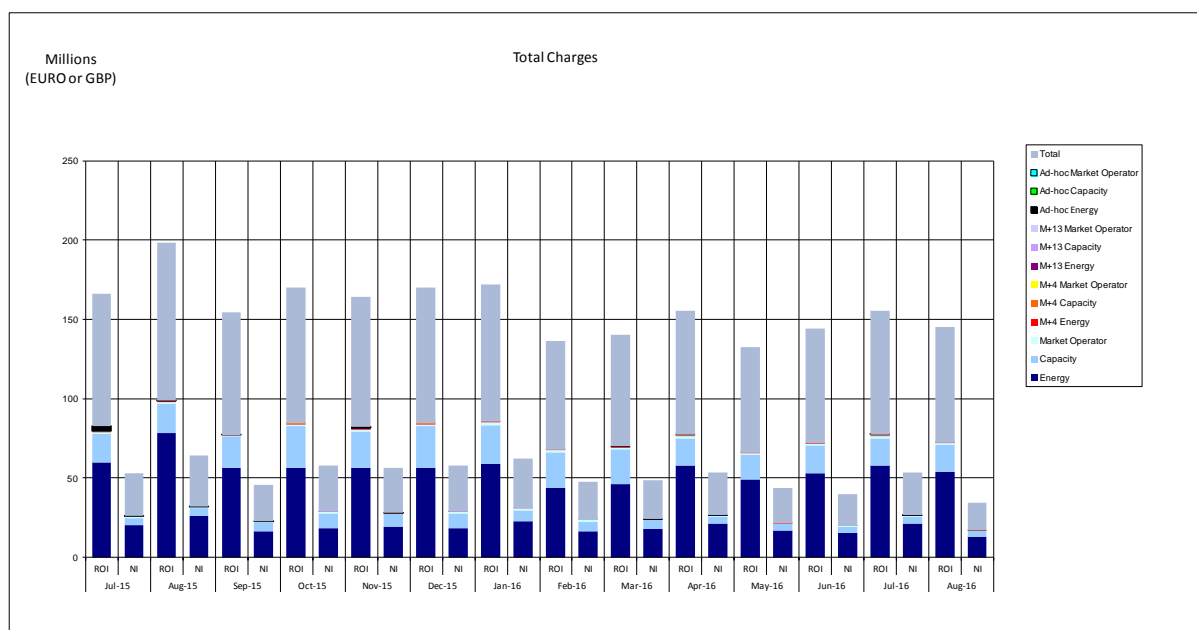


Figure 1 - Total Charges for Each Currency

| Market | Aug 2016 | |
|------------------------|--------------------|--------------------|
| | ROI | NI |
| Energy | €53,990,805 | £13,463,141 |
| Capacity | €17,305,691 | £3,676,030 |
| Market Operator | €1,082,680 | £272,061 |
| M+4 Energy | €206,643 | £22,684 |
| M+4 Capacity | €45,575 | £6,912 |
| M+4 Market Operator | €1,901 | £295 |
| M+13 Energy | €45,391 | £2,907 |
| M+13 Capacity | €12,311 | £2,274 |
| M+13 Market Operator | €323 | £18 |
| Ad-hoc Energy | €0 | £0 |
| Ad-hoc Capacity | €0 | £0 |
| Ad-hoc Market Operator | €0 | £0 |
| Total | €72,691,320 | £17,446,322 |

Table 2 - Total Charges for Each Currency

Notes relating to Table 2 and 3:

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

Total Payments for Each Currency

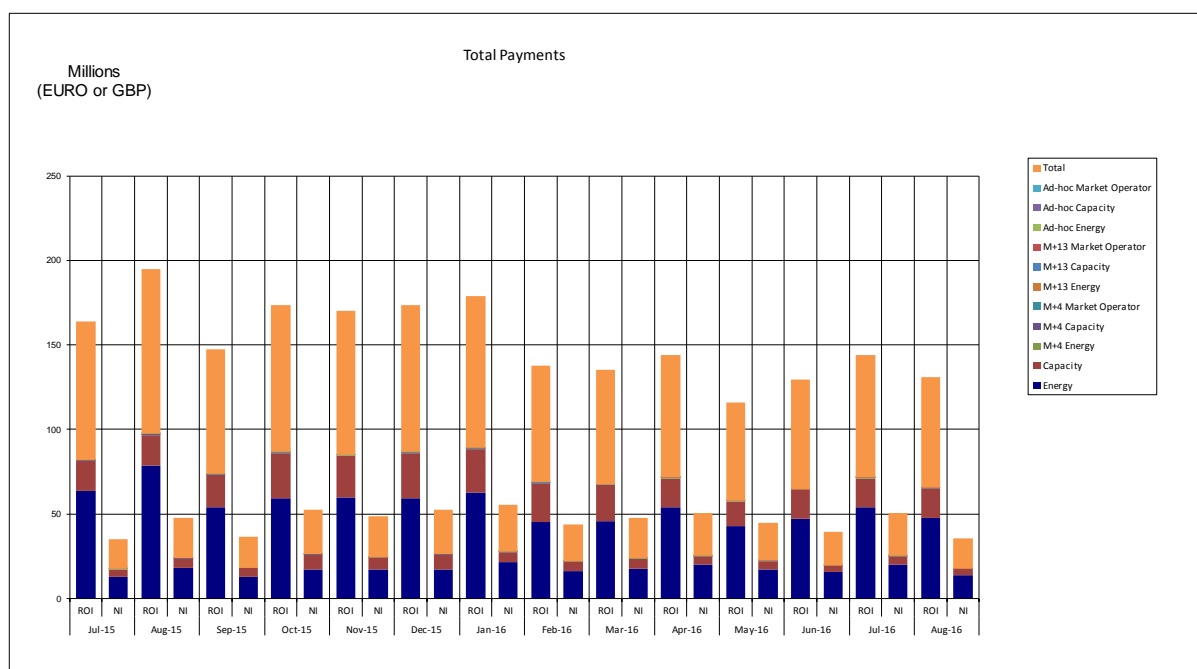


Figure 2 - Total Payments for Each Currency

| Market | Aug 2016 | |
|------------------------|--------------------|--------------------|
| | ROI | NI |
| Energy | €47,925,138 | £13,904,887 |
| Capacity | €17,191,336 | £3,784,287 |
| M+4 Energy | €205,102 | £26,983 |
| M+4 Capacity | €45,376 | £6,960 |
| M+4 Market Operator | €1,901 | £295 |
| M+13 Energy | €46,132 | £2,875 |
| M+13 Capacity | €12,064 | £2,261 |
| M+13 Market Operator | €323 | £18 |
| Ad-hoc Energy | €0 | £0 |
| Ad-hoc Capacity | €0 | £0 |
| Ad-hoc Market Operator | €0 | £0 |
| Total | €65,427,372 | £17,728,567 |

Table 3 - Total Payments for Each Currency

Total Balancing Costs

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

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

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

| August 2016 | |
|-------------------------|-------------|
| Imbalance (Energy Only) | €960,817.25 |

Table 4 - Balancing Costs for Energy Settlement

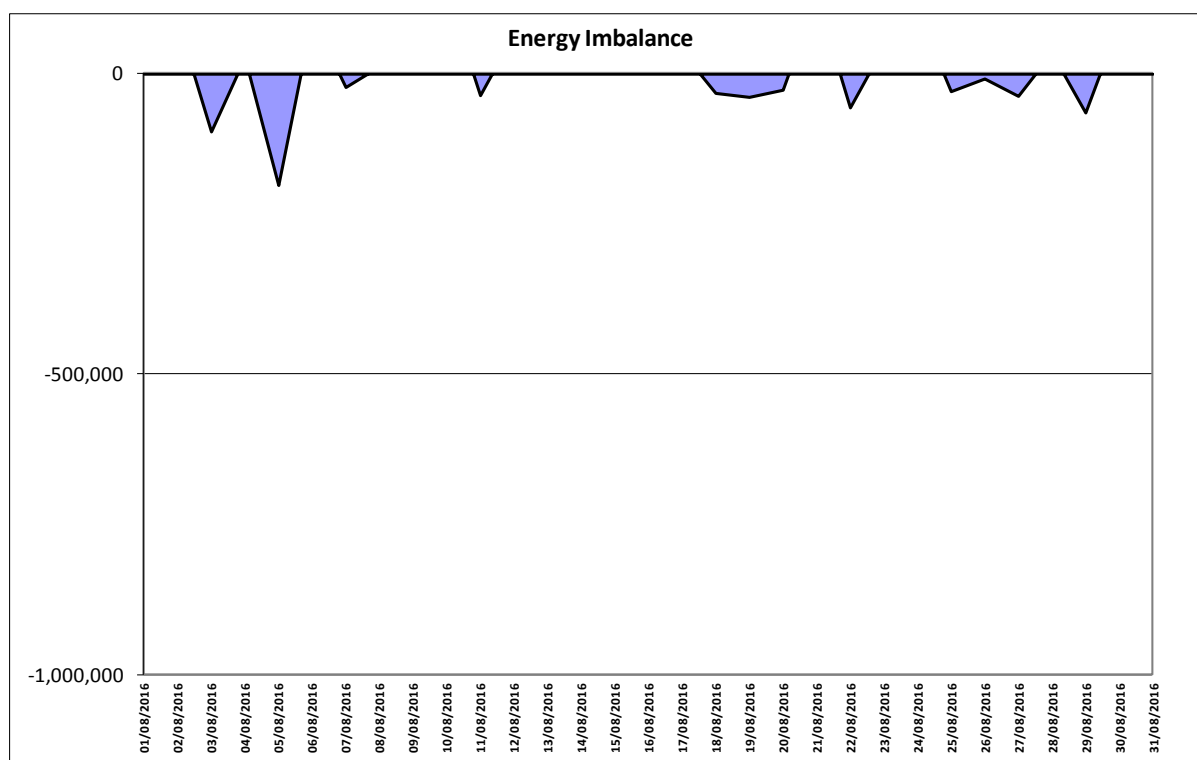


Figure 3 – Energy Imbalances

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](#).

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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 |
|-----------------|---------|---------------------|---------------------|
| 05/08/2016 | 30 | -€186,586.75 | -€0 |
| 12/08/2016 | 31 | -€117,429.10 | -€0 |
| 19/08/2016 | 32 | -€511,694.11 | -€0 |
| 26/08/2016 | 33 | -€338,852.43 | -€0 |

Table 5 - Balancing Costs for Trading Payments and Charges

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

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

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

| August 2016 | |
|-------------------|-----------------|
| Capacity Charges | -€33,707,604.52 |
| Capacity Payments | €33,707,353.91 |
| Balancing Costs | -€250.61 |
| VAT | €0 |

Table 6 - Balancing Costs for Capacity Settlement

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

Total Currency Costs

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

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

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

| Last Date Of Billing Period | Date Of Invoice | Week No | Currency Costs For Energy Settlement (Invoice and Payment) | Currency Cost Adjustment for Inter-jurisdictional SRAs | Total Currency Cost |
|-----------------------------|-----------------|---------|--|--|---------------------|
| 30/07/2016 | 05/08/2016 | 30 | -£2,888.66 | -£1,200.00 | -£4,088.66 |
| 06/08/2016 | 12/08/2016 | 31 | -£29,270.17 | £1,710.00 | -£27,560.17 |
| 13/08/2016 | 19/08/2016 | 32 | £26,855.53 | £4,575.00 | £31,430.53 |
| 20/08/2016 | 26/08/2016 | 33 | £20,403.22 | -£2,300.00 | £18,103.22 |

Table 7 - Total Currency Costs for Trading Payments and Charges

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

Over the period of this report Currency Costs for each week represented a benefit to Participants of up to £31,430.53 and a cost of -£27,560.17. Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

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

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

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| Date Of Invoice | Capacity Month | Currency Costs For Capacity Settlement |
|-----------------|----------------|--|
| 09/09/2016 | August 2016 | £29,970.65 |

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 2015. 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 |
|---------------------------|------------------------------|---------------------------|---------------------|
| €136,977,217.90 | -€2,784,129.97 | €9,680,906.29 | -€136,591,214.50 |

Table 9 – Cumulative Imperfections Costs Vs Budget

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

This is demonstrated in the figure below.

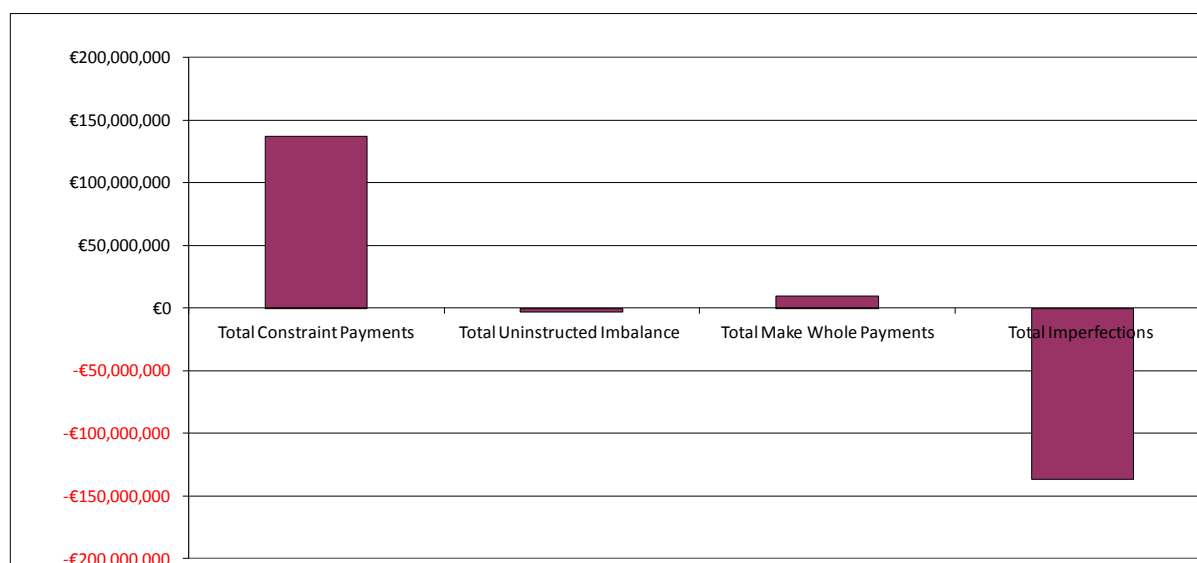


Figure 4 - Cumulative Imperfections Costs Vs Budget

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

Financial Changes between Initial Settlement and Subsequent Reruns

The following graphs provide a breakdown of resettlement amounts for the M+4 resettlement period of April 2016 and M+13 resettlement period of July 2015 for Energy and Capacity.

3.1.1 Energy Market

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

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

The reverse is true for Figure 7 & 10

M+4 Resettlement

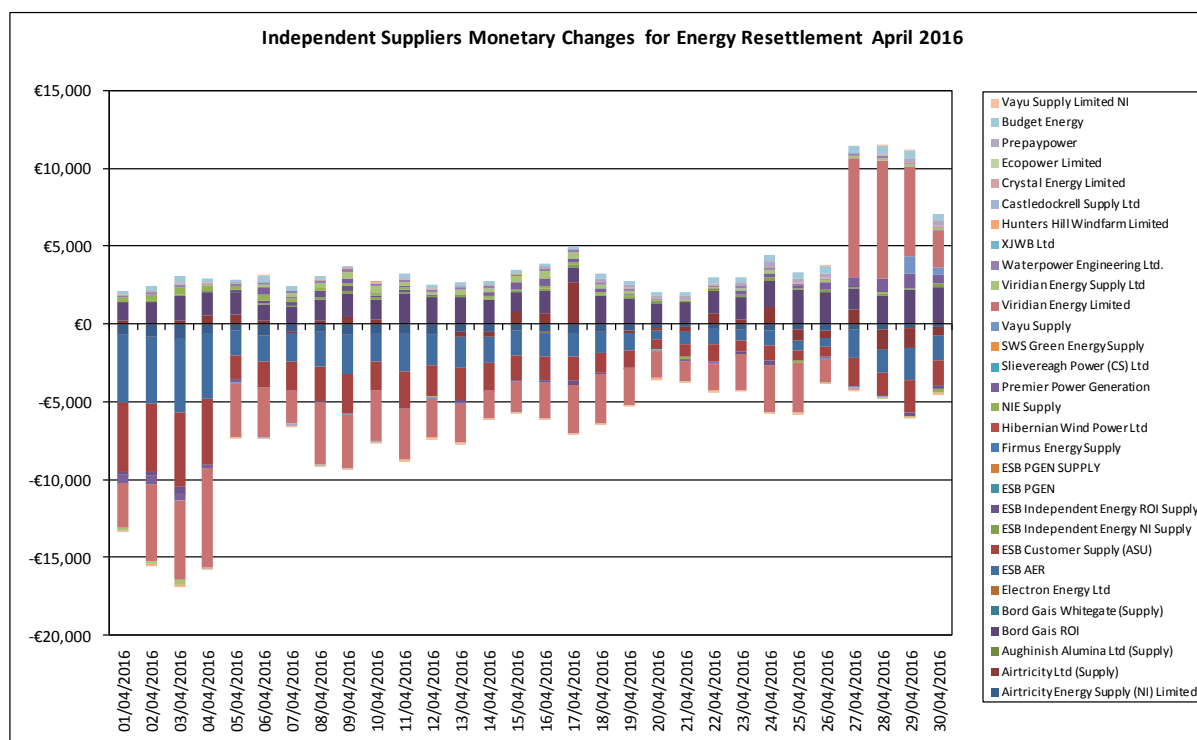


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – April 2016

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

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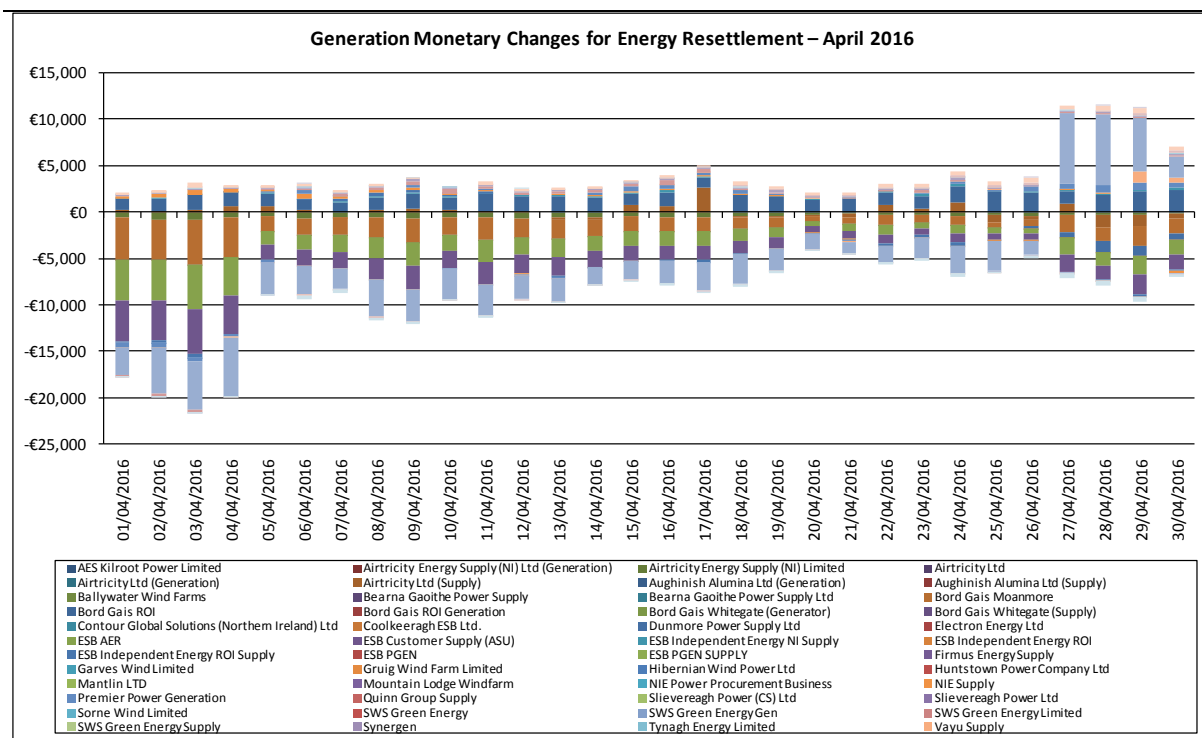


Figure 6 – Generation Monetary Changes for Energy Resettlement – April 2016

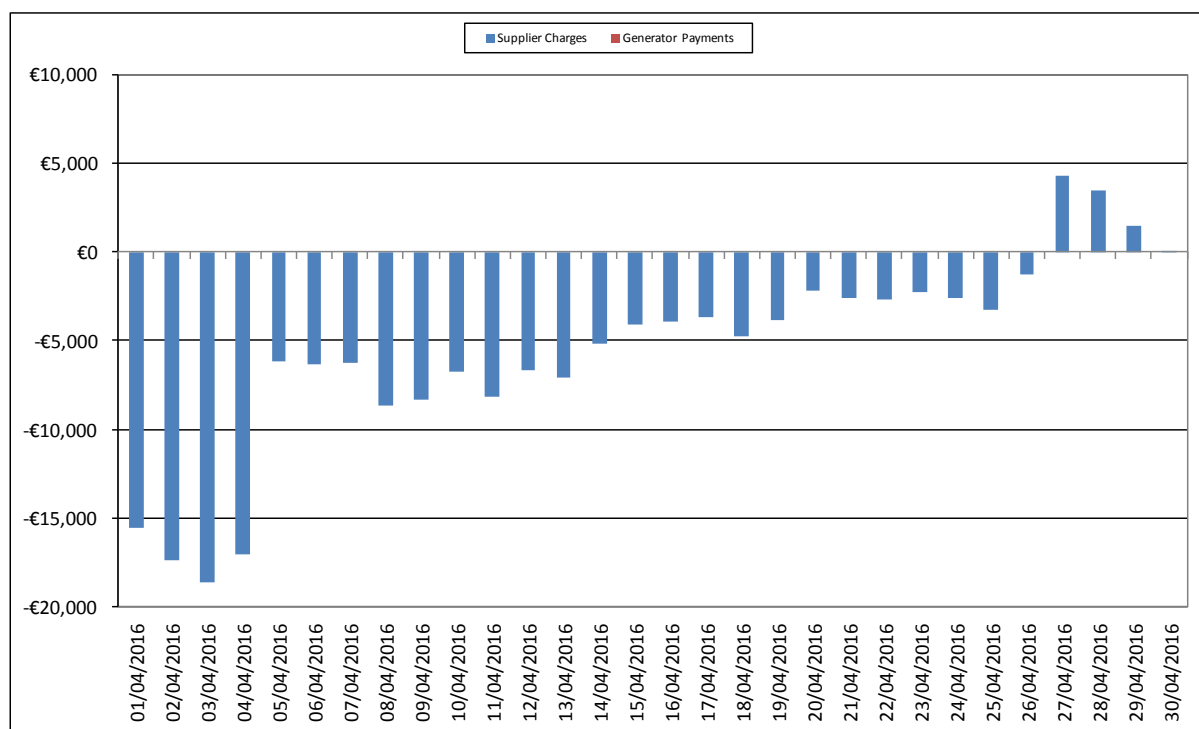


Figure 7 – Total Monetary Changes for Energy Resettlement – April 2016

M+13 Resettlement

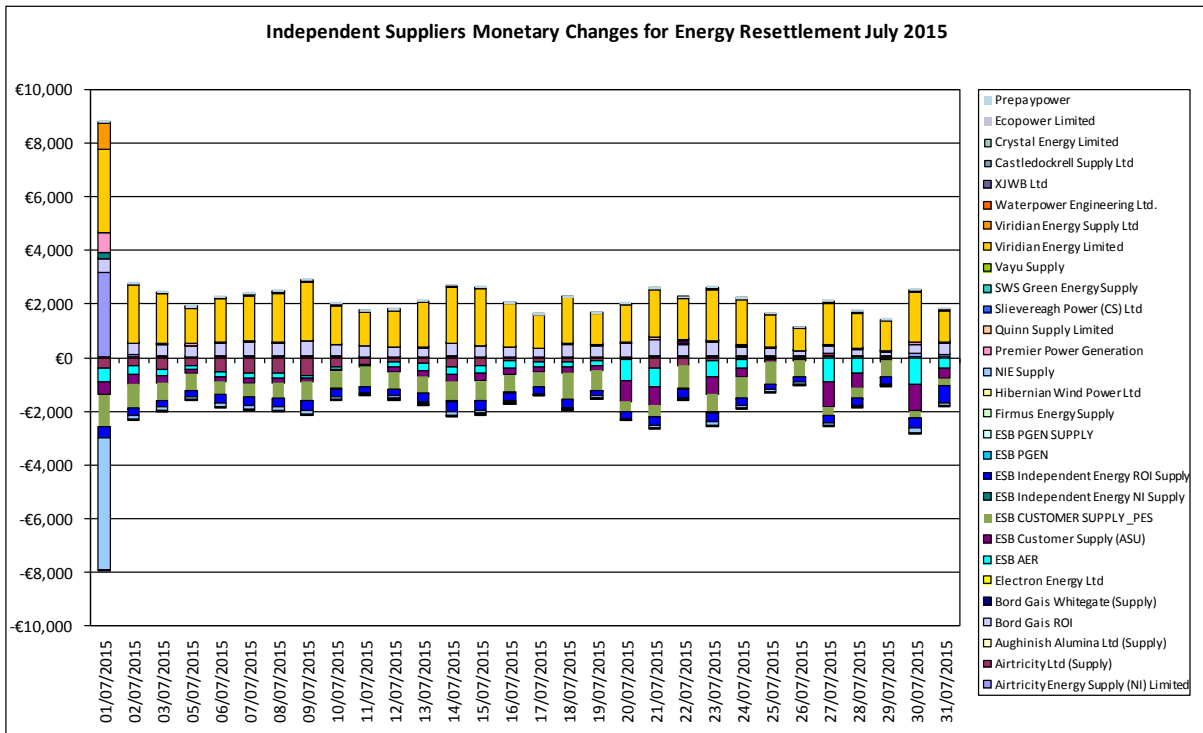


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – July 2015

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

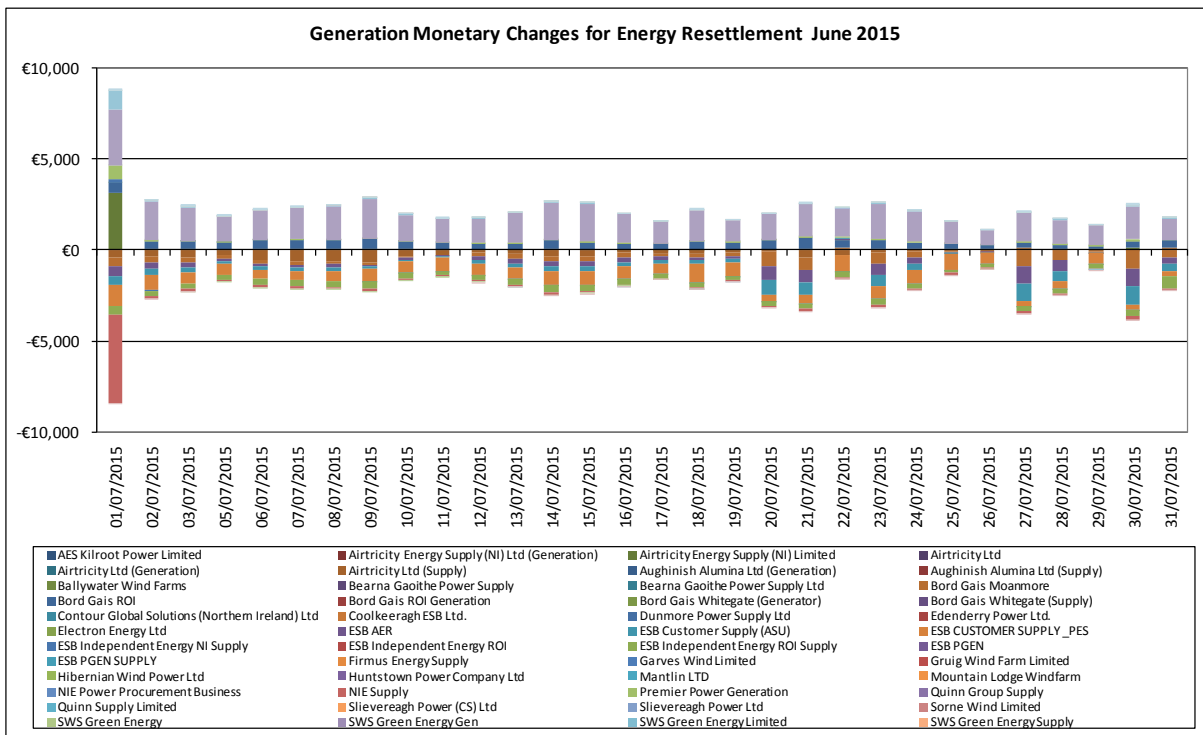


Figure 9 - Generation Monetary Changes for Energy Resettlement – July 2015

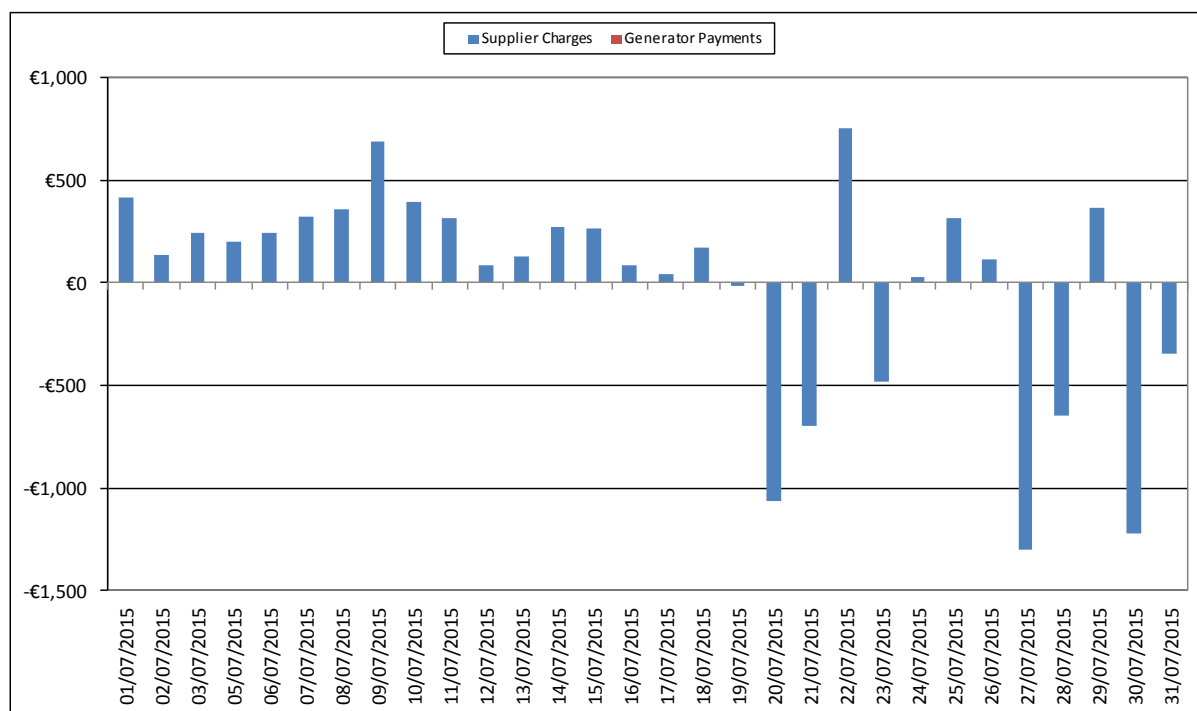


Figure 10 - Total Monetary Changes for Energy Resettlement – July 2015

3.1.2 Capacity Market

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

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

The reverse is true for Figure 14 & 22.

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

M+4 Resettlement

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

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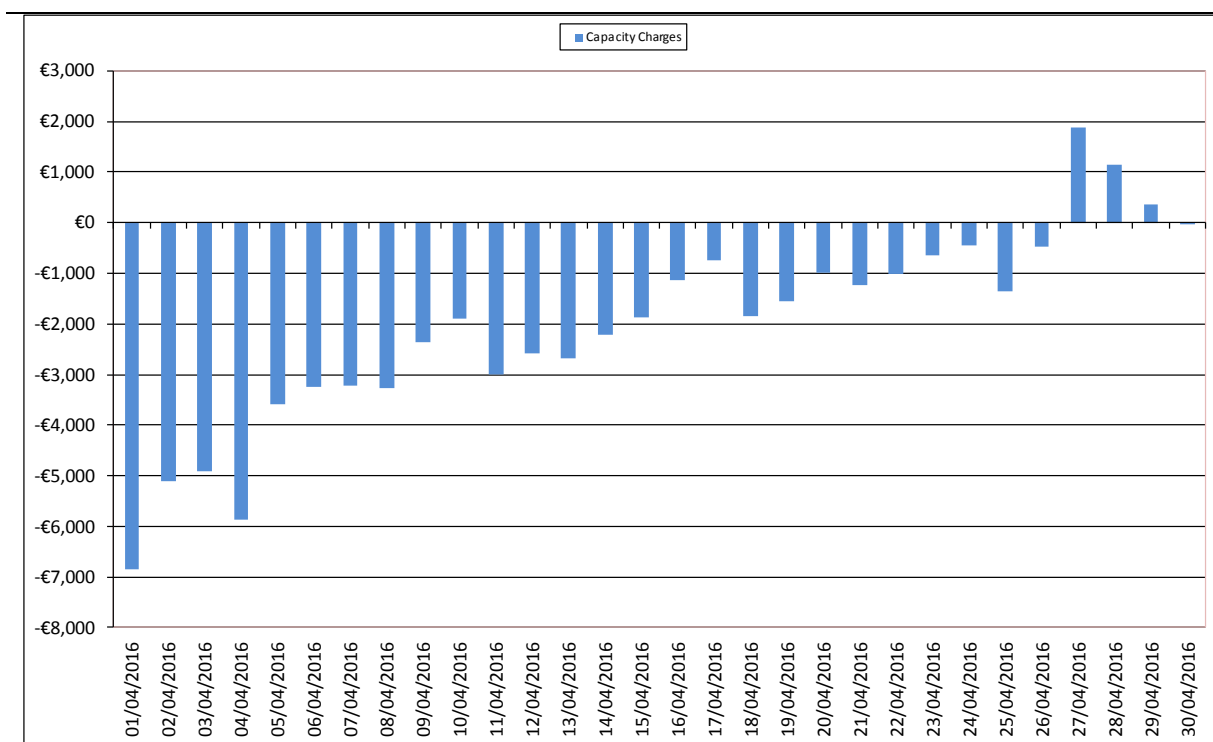


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – April 2016

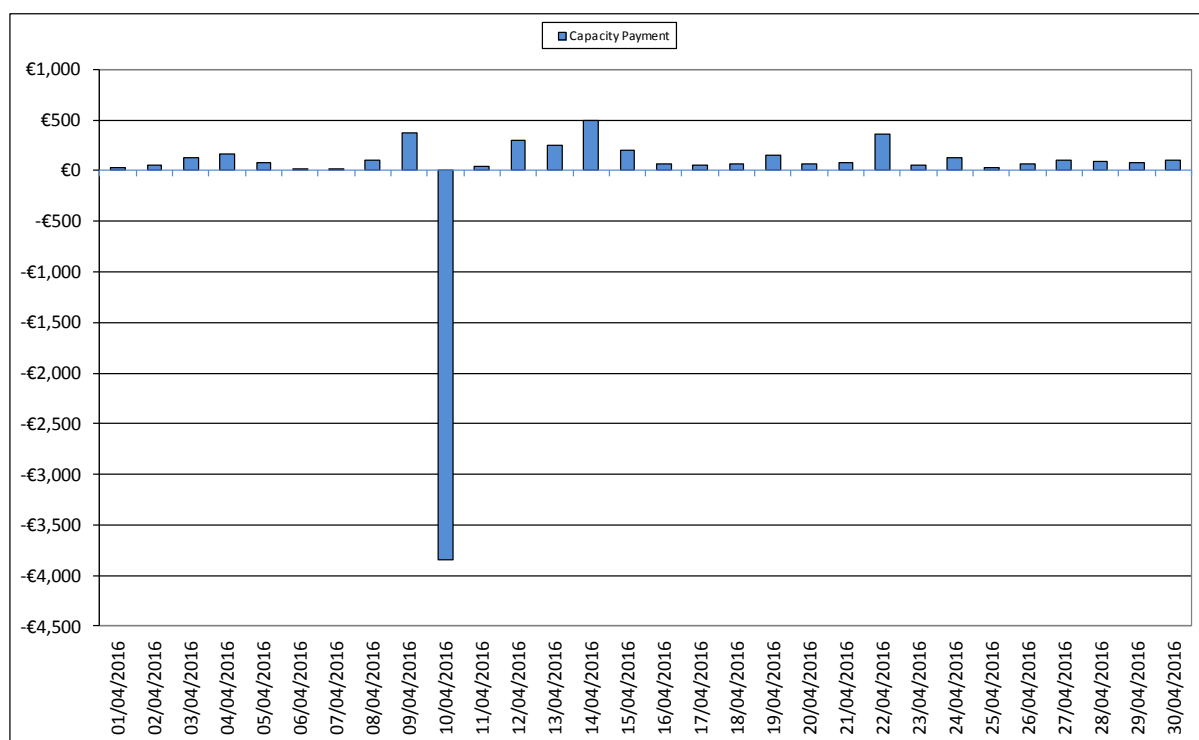


Figure 12 - All Generation Monetary Change for Capacity Resettlement – April 2016

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

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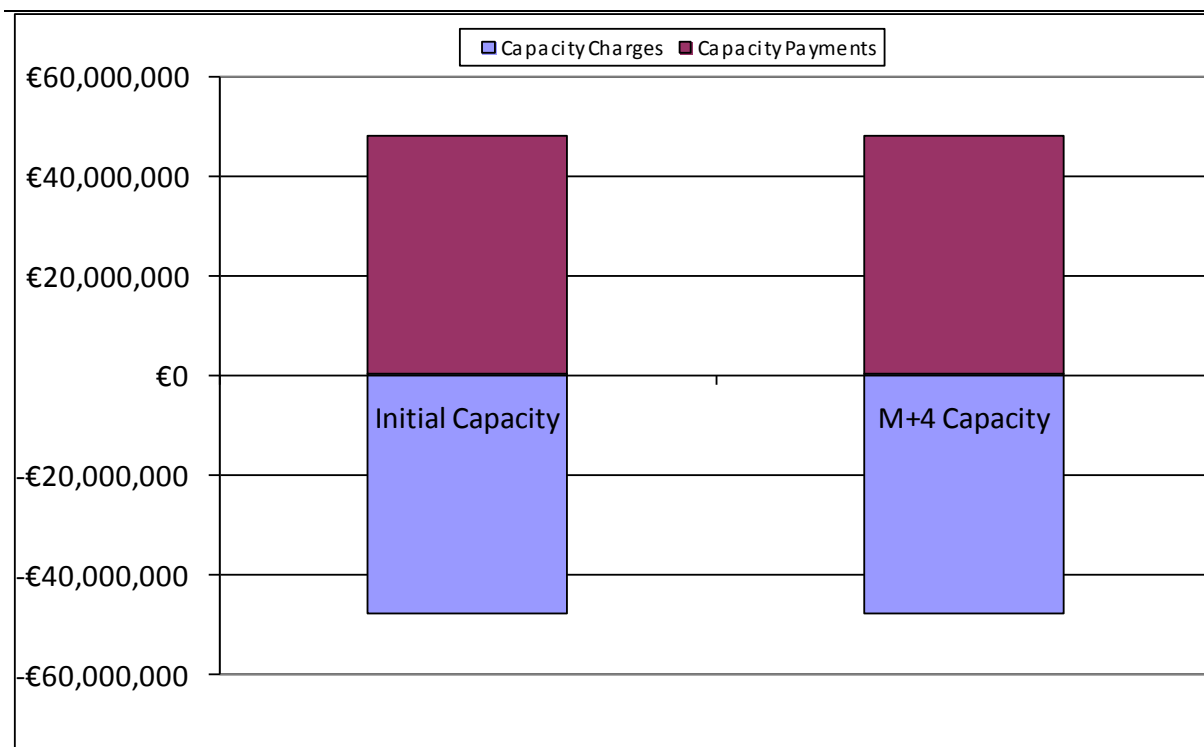


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement April 2016

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

M+13 Resettlement

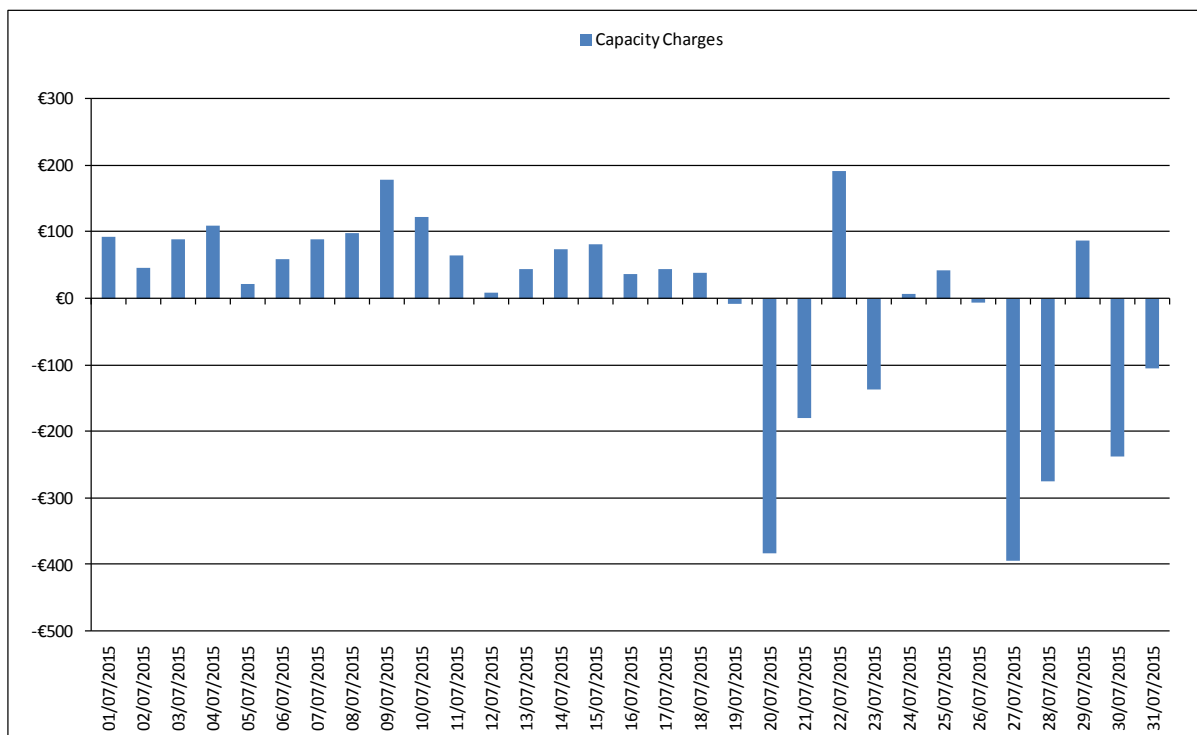


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – July 2015

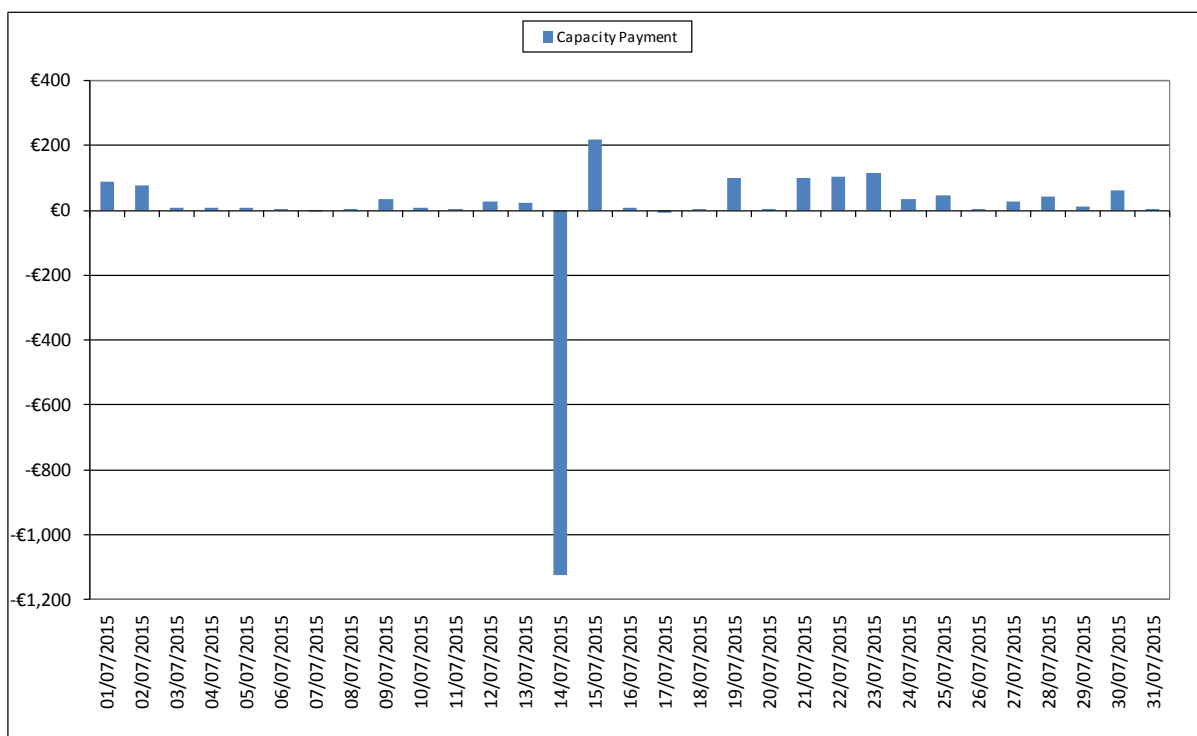


Figure 15 – All Generation Monetary Change for Capacity Resettlement – July 2015

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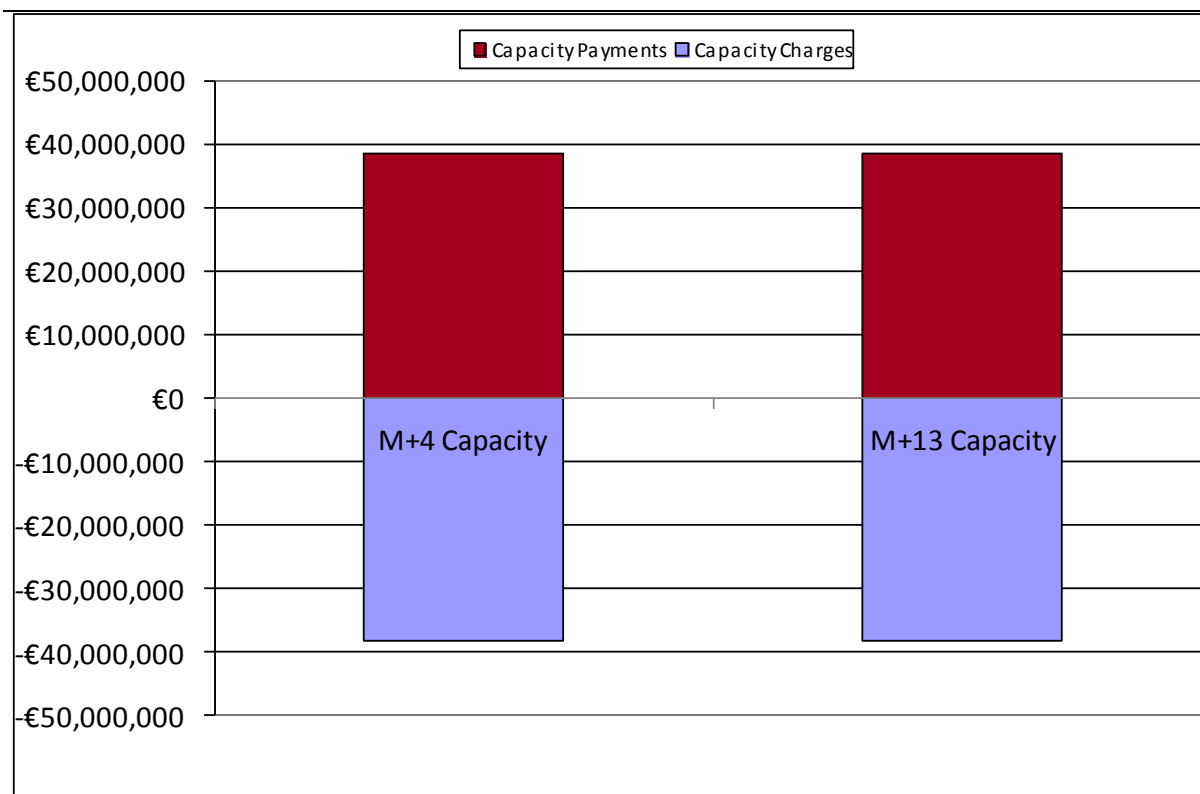


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – July 2015

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

4. Helpdesk Call Statistics

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

Market Helpdesk Report: 01/08/16 to 31/08/16

| | Received | Resolved within the period | Not Resolved | Resolved in the period | Resolution Time (Working Days) | Resolved On Time |
|----------------------|------------|----------------------------|--------------|------------------------|--------------------------------|------------------|
| Normal | 141 | 122 | 19 | 137 | 0.78 | 135 |
| Important | 0 | 0 | 0 | 0 | 0.00 | 0 |
| Urgent | 0 | 0 | 0 | 0 | 0.00 | 0 |
| Settlement | 9 | 3 | 6 | 3 | 1.54 | 3 |
| Credit | 0 | 0 | 0 | 0 | 0.00 | 0 |
| Dispute | 0 | 0 | 0 | 0 | 0.00 | 0 |
| Data | 0 | 0 | 0 | 0 | 0.00 | 0 |
| Total/Average | 150 | 125 | 25 | 140 | 0.47 | 138 |

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of August 2016.
- Resolved in the Period refers to queries resolved within August 2016, and includes queries raised before this time.
- Resolution Time (Working Days) refers to average time to resolve, in working days, for this category of query. It is calculated based on all queries for the category, not just August 2016.
- Not Resolved refers to queries raised but not resolved within August 2016.
- Urgent are general queries which may have an impact on market operations. SEMO has an internal objective to resolve these within 3 working days; however, this is not a mandated service level under the Trading and Settlement Code.
- Disputes are where a dispute has been raised over the outcome of a data or settlement query.

The average resolution time for General Queries has decreased by 0.10 working days from 0.88 in July 2016 to 0.78 working days in August 2016. SEMO has a metric to resolve General Queries within 20 Working Days. These include queries received over the phone and e-mail.

Data and Settlement Queries generally continue to be responded to within the timelines required by the Trading and Settlement Code, i.e. one calendar month. No Formal Query timeline extensions were required during August 2016 with regard to formal Settlement Queries.

5. Disputes and Queries

5.1.1 Disputes

No Disputes were raised during the month of August 2016.

5.1.2 Data Queries

There were no formal data queries raised during the month of August 2016.

5.1.3 Settlement Queries

There were Nine formal Settlement Queries raised in August 2016. Five of the Nine queries were upheld and have since been resolved.

| Topic | Number Of Queries |
|-----------------------|-------------------|
| Actual Availability | 3 |
| Meter Generation | 1 |
| Dispatch Instructions | 1 |

Table 11 - Upheld Settlement Queries by topic

- Three queries relating to incorrect Availabilities were raised. These queries were deemed to be of low materiality. An adhoc resettlement was scheduled for one. The remaining two will be corrected within M+4 & M+13 capacity resettlement.
- One query relating to incorrect Dispatch Instructions was raised. This was deemed to be of low materiality and will be corrected within M+4 resettlement.
- One query relating to incorrect Meter Generation was raised. This was deemed to be of low materiality and will be corrected within M+4 & M+13 resettlement.

Unresolved Queries

There is one unresolved settlement query as of the 13th September 2016.

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

6. Central Systems

6.1 Proportion of Default Data Used

On review of the Commercial Offer Data used in the MSP runs, 64.91% of data used was submitted by Participants through the normal Bid-Offer process. 35.09% 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 and Resettlement Runs

There were no Re-Price runs carried out in August 2016.

There were no Re-Settlement runs carried out in August 2016.

6.3.2 System Errors

There were no Market Application defects found in August 2016.

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 August 2016.

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6.4.1 MSP Postings August 2016

| 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% |
| Post EP1 | 100% | 0% | 0% | 0% |
| Post EP2 | 100% | 0% | 0% | 0% |

Table 13 - Operational Timings (% on time)

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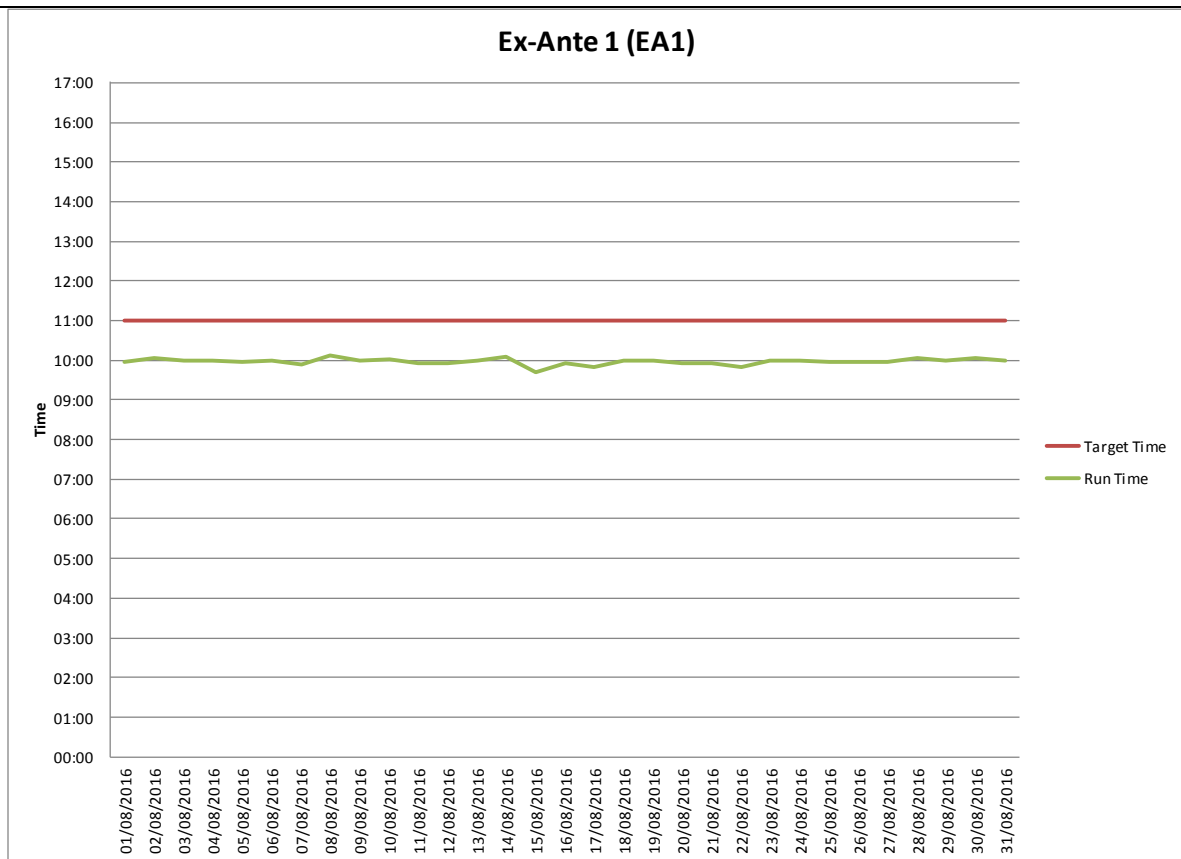


Figure 17 – Ex-Ante 1

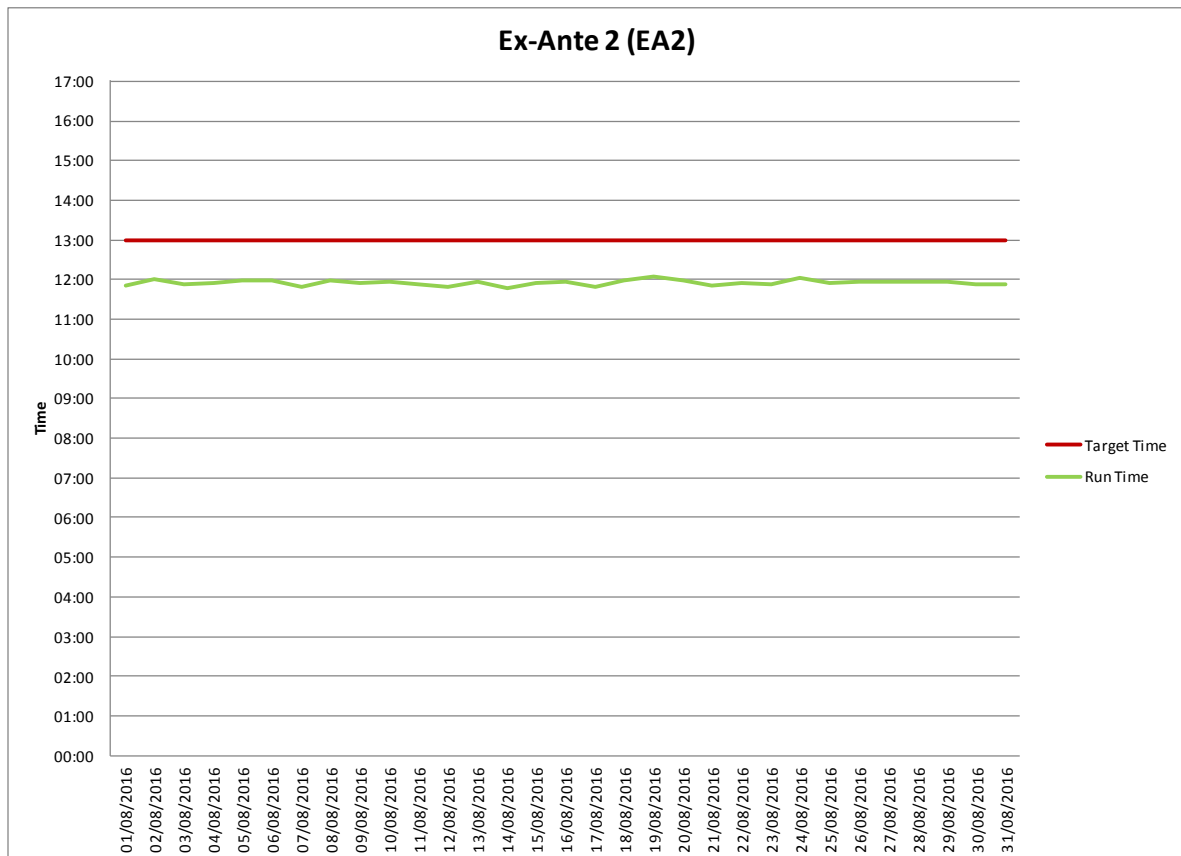


Figure 18 – Ex-Ante 2

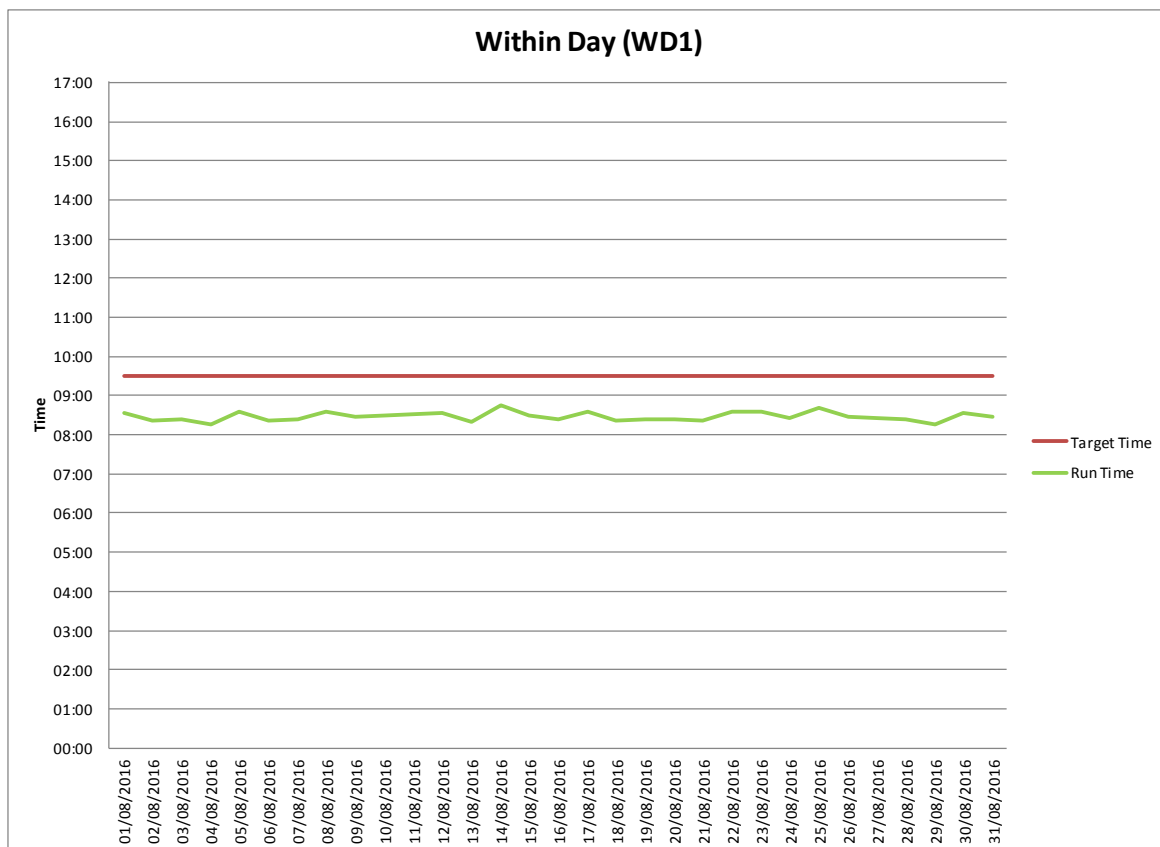


Figure 19 – Within Day 1

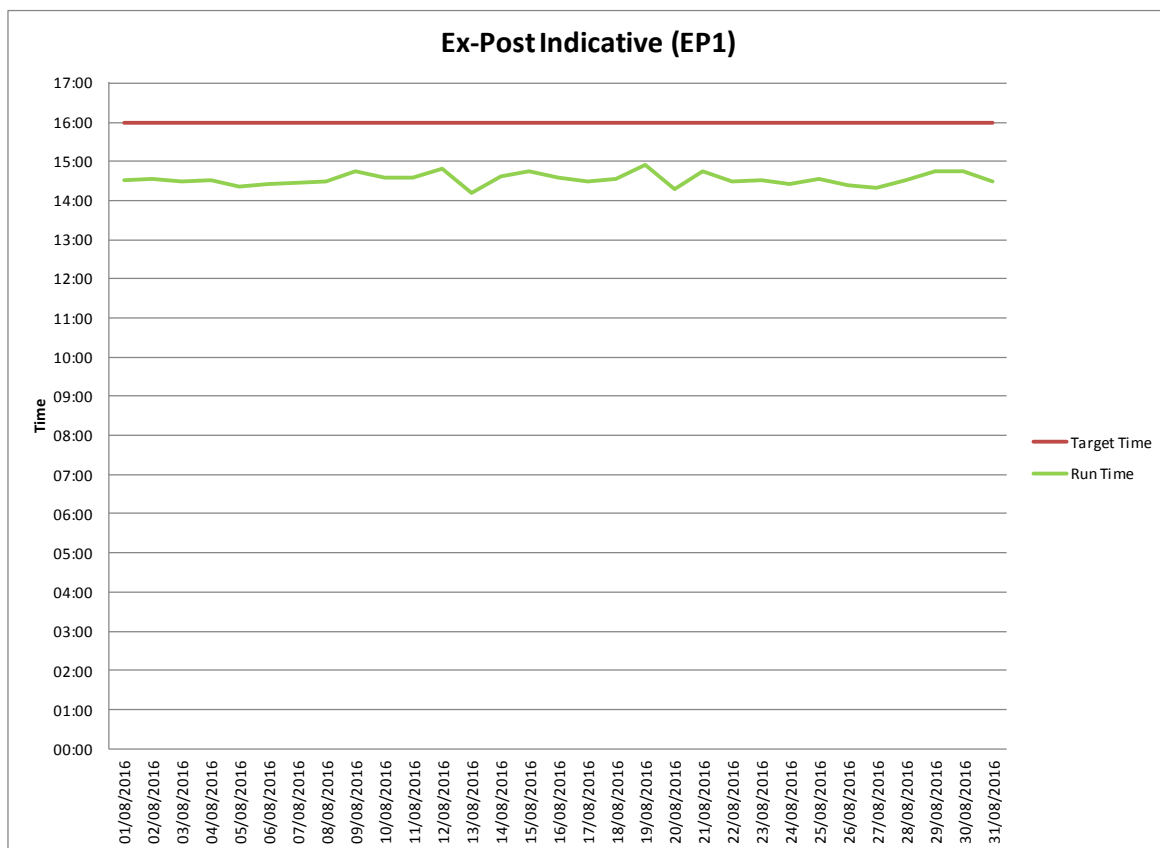


Figure 20 - Ex-Post Indicative

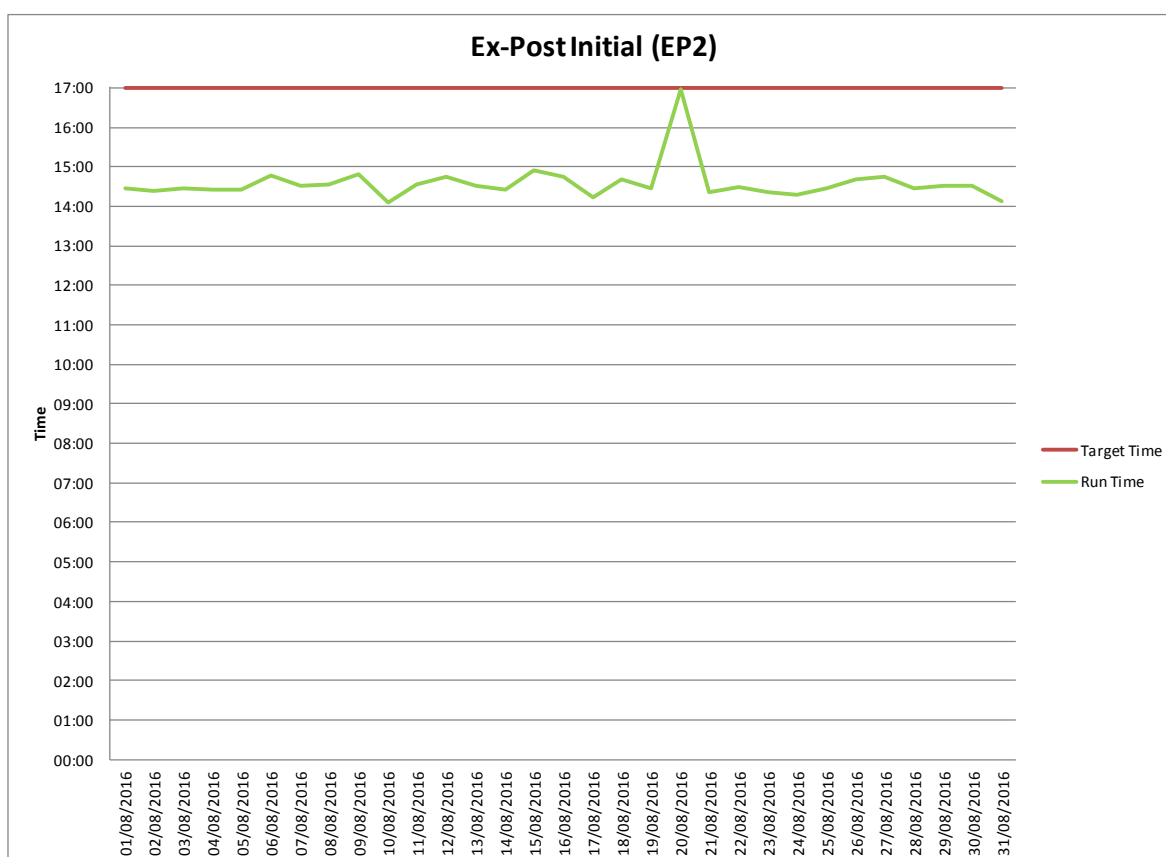


Figure 21 - Ex-Post Initial

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 August 2016, there was one 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](#).

6.4.2 Settlement Postings August 2016

The publication timings for Settlement runs are provided below.

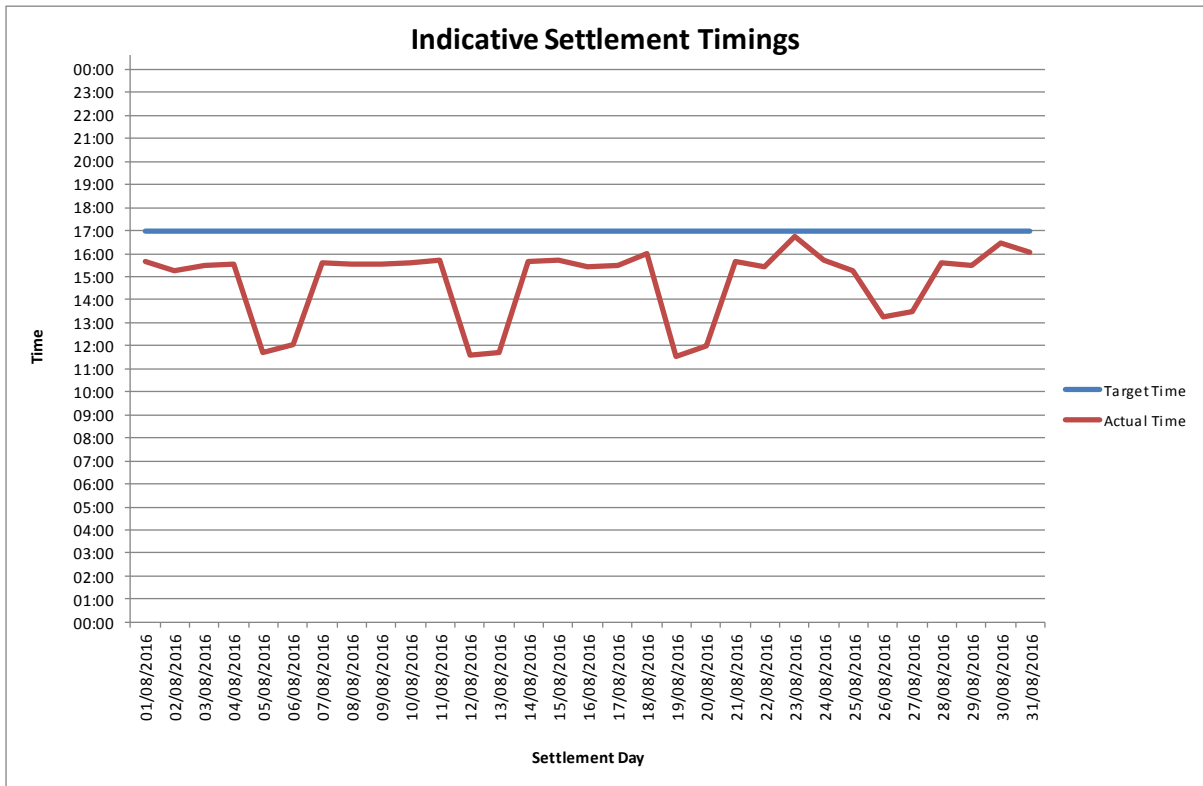


Figure 22 - Indicative Settlement Postings

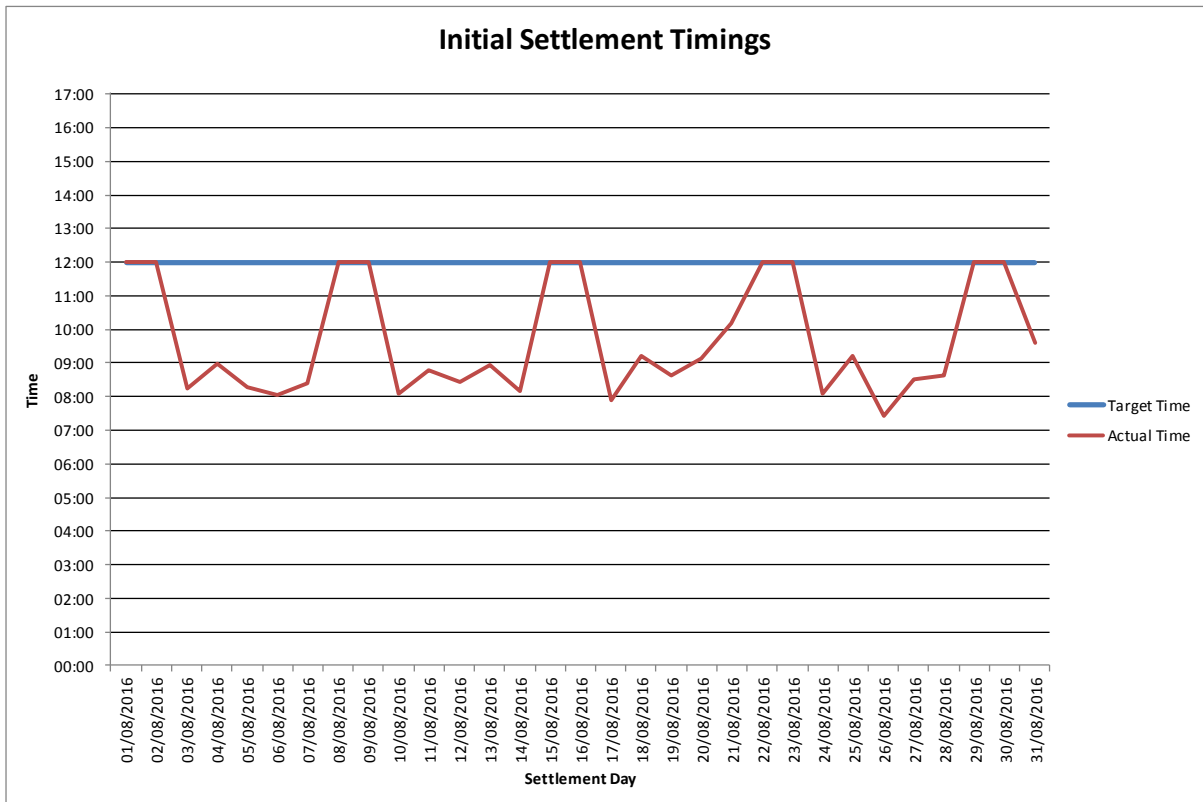


Figure 23 - Initial Settlement Postings

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

6.5.1 Release SEM R2.7.0 (Deployed: November 2nd 2015)

SEM R2.7.0 went live on Friday November 2nd with no issues

UUC 3.7.1 – (Deployed December 15th 2015)

UUC 3.7.1 was deployed on December 15th and the below defect fixes were applied.

ABB2015142976 – IP – IP heat state – Down Time

ABB2015143445 – DSP – Availability Profile (Dual Energy Unit)

6.5.2 Release SEM R2.8.0 (Deployed June 17th 2016)

SEM R2.8.0 went live on Friday June 17th with no issues

7. Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

There were no scheduled Business Continuity tests performed during August 2016.

7.3 Communications or Systems Failures

There were no Communications or Systems Failures in August 2016

7.4 Denial of Service Attacks

There was no Denial of Service Attacks during August 2016.

7.5 Submission of Parameters to RAs for Approval

The following yearly reports were submitted to the Regulatory Authorities in line with SEMO's obligations under the T&SC:

1. MSP Software Penalty Parameters Report 2017
2. Credit Cover Parameters Report 2017

8. Appendix A: Detail of Trading and Settlement Code Breaches

Market Participant

| Ops Date Identified | Run Type | Quality or Timing | Party | Issue Type | Description | Cause | Resolution | T and SC Breach |
|---------------------|----------|-------------------|-------------|-----------------|---|-------------------|---|-----------------|
| 10/08/2016 | Money In | Timing | Participant | Payment Default | Electron Energy Ltd. (PT_400074) defaulted on a Week 30 Initial Energy Invoice. | Participant Error | A default letter was issued to the Participant. | Major |
| 15/08/2016 | Money In | Timing | Participant | Payment Default | Aughrim Power Supply Limited (PT_400119) defaulted on a July 2016 Initial Capacity Invoice. | Participant Error | A default letter was issued to the Participant. | Major |
| 15/08/2016 | Money In | Timing | Participant | Payment Default | Open Electric Ireland (PT_500082) defaulted on a July 2016 Initial Capacity Invoice. | Participant Error | A default letter was issued to the Participant. | Major |

Table 14 – Trading and Settlement Code Breaches – Market Participants

SEMO - Pricing and Scheduling

There were no issues to report in August 2016.

SEMO – Settlements

| Ops Date Identified | Run Type | Quality or Timing | Party | Issue Type | Description | Cause | Resolution | T and SC Breach |
|---------------------|----------|-------------------|-------|-------------|--|---------------------------------------|---|-----------------|
| 25/08/2016 | SE2 | Timing | SEMO | Operational | SEMO published the Settlement Calendar from 1st January 2016 to December 2016 excluding December 2016 dates. | This was due to an operational error. | The Settlement Calendar for December 2016 was updated on 24/08/2016 | Minor |

Table 15 – Trading and Settlement Code Breaches – Settlements

SEMO - Funds Transfer

There were no issues to report in August 2016.

SEMO - Credit Management

There were no issues to report in August 2016.

SEMO – Other

There were no issues to report in August 2016.

Appendix B: List of Queries by Type

| Summary Title | Description | ID | Logged On | Date sent to MP | Type |
|----------------------------|---|-----------|------------|-----------------|------------|
| Actual Availabilities | Whitegate Generator (PT_400075) was returning from a forced outage in a cold heat state and was available to generate in the market at 12.00 Tuesday 29th March. At the time of returning to service the 12 hour notification (time usually required to synchronise the unit to the system from a cold start) was added to the 12.00 time resulting in actual availability of 23.59 Tuesday 29th March. Following discussions with Bord Gáis Energy and Real Time Operations, it was agreed that the unit could have synchronised at 12.00 Tuesday 29th March having completed a full speed no load test at that time. Based on ambient conditions for the day the average availability for Whitegate CCGT would have been 439 MWh. This settlement query related only to capacity payments. No energy payment resettlement is sought. | PT_400075 | 2016-08-03 | 2016-08-25 | Settlement |
| Market Schedule Quantities | GU_400250 (Liffey 1) and GU_400251 (Liffey 2). Both units were constrained off due to networks outage but units were submitting targets. Liffey 1 & 2 should have received payments for these targets for the period 15th July to 5th August but on checking settlement data no energy payments were received. | PT_400030 | 2016-08-18 | 2016-09-07 | Settlement |
| Dispatch Instructions | Failsync workaround required for trade date 14/08/2016. The issue time of the MNOF instruction at effective time 16:59 needs to be amended from 17:00 to 16:59 in order for the instruction profiler to apply the FAILSYNC instruction correctly. | PT_500045 | 2016-08-19 | 2016-08-27 | Settlement |
| Actual Availabilities | On 25/06/2016 at 14.34 the Coolkeeragh ESB CCGT known as C30 automatically transferred from gas to liquid fuel as a means of generating electricity. This action was represented in EDIL by declaring C30 as OMV's on gas and 380 MWh on liquid fuel. The 380MWh declaration for liquid fuel was not automatically transferred to the market resulting in C30 being declared OMV's for 1 hour post event. | PT_500024 | 2016-08-19 | 2016-08-28 | Settlement |
| Dispatch Instructions | GU_400500 (Synergen). Unit was performing a secondary fuel test on 14th April. There are a number of TEST flags in EDIL for this testing which I believe to be incorrect as secondary fuel testing is not the usual testing carried out within the market. AS a | PT_400037 | 2016-08-25 | 2016-08-29 | Settlement |
| Meter Demand | The demand files submitted for Settlement Dates 06:00 01/01/16 to 16:00 02/08/2016 will be affected due to a unit B6 being decommissioned by the participant. Subsequent to the decommissioning of Unit B6 the imported units should have been spread over 2 r | PT_500028 | 2016-08-25 | 2016-08-30 | Settlement |
| Summary Title | Description | ID | Logged On | Date sent to MP | Type |
| Meter Generation | Ballylumford Unit 6 (GU_500280) was decommissioned on 1st January 2016 at 06:00. As a result the metering model for B4/B5 & B6 had to be adjusted to take account of B6 no longer being in service. This has taken some time to agree and implement the changes. We are now in a position to resubmit the export data for resettlement for the period 01/01/16 to 02/08/16. We do not anticipate that this will be above the materiality threshold for the periods in question (01/01/16 to 02/08/16), however we wish to advise SEMO of the potential differences. This query is also linked to a query raised by NIE (F0068463) for the import data. | TSO_SONI | 2016-08-31 | 2016-08-31 | Settlement |
| Actual Availabilities | SONI have sent incorrect Actual Availability data to SEMO for Empower AGU (GU_501230) from 00:00 24/06/2016 until 00:00 23/08/2016. Values of OMV were submitted when the availability values should have been: □ 6MWh from 00:00 24/06/2016 to 06:00 07/07/2016 □ 7MWh from 06:00 07/07/2016 to 21:15 09/08/2016 □ 5MWh from 21:15 09/08/2016 to 00:03 10/08/2016 □ 7MWh from 00:03 10/08/2016 to 00:00 23/08/2016 Following these dates, the correct values have been sent through. | TSO_SONI | 2016-08-31 | 2016-09-01 | Settlement |
| Meter Data | There is a variance between the M+13 PIR data published by the Market and the corresponding MRSO Meter Data. This is for the period 26th July to 31st of July 2015. This variance has been spread over the full 24 hour period of each day. | PT_500030 | 2016-08-31 | 2016-09-01 | Settlement |

Table 16 - 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 defect found in August 2016.

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

Table 17 - List of System Errors and Failures

9. Appendix D: Details of Operational Timings

Market Schedule and Price Runs

| Operational Day | EA1 Postings | | EA2 Postings | | WD1 Postings | | EP1 Postings | | EP2 Postings | |
|-----------------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|--------------|--------|
| | Target | Actual | Target | Actual | Target | Actual | Target | Actual | Target | Actual |
| 01/08/2016 | 11:00 | 09:57 | 13:00 | 11:50 | 09:30 | 08:34 | 16:00 | 14:31 | 17:00 | 14:27 |
| 02/08/2016 | 11:00 | 10:03 | 13:00 | 12:01 | 09:30 | 08:21 | 16:00 | 14:33 | 17:00 | 14:23 |
| 03/08/2016 | 11:00 | 10:00 | 13:00 | 11:53 | 09:30 | 08:24 | 16:00 | 14:29 | 17:00 | 14:27 |
| 04/08/2016 | 11:00 | 09:59 | 13:00 | 11:54 | 09:30 | 08:16 | 16:00 | 14:31 | 17:00 | 14:25 |
| 05/08/2016 | 11:00 | 09:58 | 13:00 | 11:59 | 09:30 | 08:36 | 16:00 | 14:22 | 17:00 | 14:25 |
| 06/08/2016 | 11:00 | 10:00 | 13:00 | 11:59 | 09:30 | 08:21 | 16:00 | 14:25 | 17:00 | 14:47 |
| 07/08/2016 | 11:00 | 09:54 | 13:00 | 11:49 | 09:30 | 08:23 | 16:00 | 14:28 | 17:00 | 14:31 |
| 08/08/2016 | 11:00 | 10:07 | 13:00 | 11:59 | 09:30 | 08:36 | 16:00 | 14:29 | 17:00 | 14:33 |
| 09/08/2016 | 11:00 | 09:59 | 13:00 | 11:54 | 09:30 | 08:28 | 16:00 | 14:45 | 17:00 | 14:49 |
| 10/08/2016 | 11:00 | 10:02 | 13:00 | 11:56 | 09:30 | 08:29 | 16:00 | 14:35 | 17:00 | 14:06 |
| 11/08/2016 | 11:00 | 09:56 | 13:00 | 11:53 | 09:30 | 08:32 | 16:00 | 14:36 | 17:00 | 14:33 |
| 12/08/2016 | 11:00 | 09:55 | 13:00 | 11:49 | 09:30 | 08:34 | 16:00 | 14:49 | 17:00 | 14:45 |
| 13/08/2016 | 11:00 | 09:59 | 13:00 | 11:56 | 09:30 | 08:19 | 16:00 | 14:11 | 17:00 | 14:31 |
| 14/08/2016 | 11:00 | 10:06 | 13:00 | 11:46 | 09:30 | 08:45 | 16:00 | 14:37 | 17:00 | 14:25 |
| 15/08/2016 | 11:00 | 09:42 | 13:00 | 11:55 | 09:30 | 08:30 | 16:00 | 14:45 | 17:00 | 14:54 |
| 16/08/2016 | 11:00 | 09:56 | 13:00 | 11:57 | 09:30 | 08:23 | 16:00 | 14:35 | 17:00 | 14:44 |
| 17/08/2016 | 11:00 | 09:50 | 13:00 | 11:49 | 09:30 | 08:35 | 16:00 | 14:29 | 17:00 | 14:14 |
| 18/08/2016 | 11:00 | 09:59 | 13:00 | 11:58 | 09:30 | 08:22 | 16:00 | 14:33 | 17:00 | 14:40 |
| 19/08/2016 | 11:00 | 09:59 | 13:00 | 12:04 | 09:30 | 08:24 | 16:00 | 14:54 | 17:00 | 14:28 |
| 20/08/2016 | 11:00 | 09:56 | 13:00 | 11:58 | 09:30 | 08:23 | 16:00 | 14:18 | 17:00 | 16:57 |
| 21/08/2016 | 11:00 | 09:56 | 13:00 | 11:51 | 09:30 | 08:21 | 16:00 | 14:44 | 17:00 | 14:22 |
| 22/08/2016 | 11:00 | 09:49 | 13:00 | 11:54 | 09:30 | 08:36 | 16:00 | 14:30 | 17:00 | 14:29 |
| 23/08/2016 | 11:00 | 10:00 | 13:00 | 11:53 | 09:30 | 08:35 | 16:00 | 14:32 | 17:00 | 14:21 |
| 24/08/2016 | 11:00 | 10:00 | 13:00 | 12:02 | 09:30 | 08:26 | 16:00 | 14:26 | 17:00 | 14:17 |
| 25/08/2016 | 11:00 | 09:57 | 13:00 | 11:55 | 09:30 | 08:42 | 16:00 | 14:33 | 17:00 | 14:27 |
| 26/08/2016 | 11:00 | 09:58 | 13:00 | 11:57 | 09:30 | 08:28 | 16:00 | 14:23 | 17:00 | 14:40 |
| 27/08/2016 | 11:00 | 09:58 | 13:00 | 11:57 | 09:30 | 08:26 | 16:00 | 14:19 | 17:00 | 14:45 |
| 28/08/2016 | 11:00 | 10:03 | 13:00 | 11:57 | 09:30 | 08:24 | 16:00 | 14:31 | 17:00 | 14:28 |
| 29/08/2016 | 11:00 | 10:00 | 13:00 | 11:57 | 09:30 | 08:15 | 16:00 | 14:45 | 17:00 | 14:32 |
| 30/08/2016 | 11:00 | 10:03 | 13:00 | 11:53 | 09:30 | 08:34 | 16:00 | 14:45 | 17:00 | 14:32 |
| 31/08/2016 | 11:00 | 10:00 | 13:00 | 11:52 | 09:30 | 08:28 | 16:00 | 14:30 | 17:00 | 14:08 |

Table 18 – MSP Runs

Settlement Runs

| Indicative | | | | Initial | | | |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Trading Day | Actual Date | Target Time | Actual Time | Trading Day | Actual Date | Target Time | Actual Time |
| 01/08/2016 | 02/08/2016 | 17:00 | 15:41 | 01/08/2016 | 08/08/2016 | 12:00 | 07:50 |
| 02/08/2016 | 03/08/2016 | 17:00 | 15:16 | 02/08/2016 | 09/08/2016 | 12:00 | 07:49 |
| 03/08/2016 | 04/08/2016 | 17:00 | 15:29 | 03/08/2016 | 10/08/2016 | 12:00 | 08:05 |
| 04/08/2016 | 05/08/2016 | 17:00 | 15:33 | 04/08/2016 | 11/08/2016 | 12:00 | 08:14 |
| 05/08/2016 | 08/08/2016 | 17:00 | 11:44 | 05/08/2016 | 12/08/2016 | 12:00 | 12:00 |
| 06/08/2016 | 08/08/2016 | 17:00 | 12:02 | 06/08/2016 | 12/08/2016 | 12:00 | 12:00 |
| 07/08/2016 | 08/08/2016 | 17:00 | 15:36 | 07/08/2016 | 12/08/2016 | 12:00 | 08:12 |
| 08/08/2016 | 09/08/2016 | 17:00 | 15:33 | 08/08/2016 | 15/08/2016 | 12:00 | 08:50 |
| 09/08/2016 | 10/08/2016 | 17:00 | 15:32 | 09/08/2016 | 16/08/2016 | 12:00 | 07:52 |
| 10/08/2016 | 11/08/2016 | 17:00 | 15:36 | 10/08/2016 | 17/08/2016 | 12:00 | 09:14 |
| 11/08/2016 | 12/08/2016 | 17:00 | 15:43 | 11/08/2016 | 18/08/2016 | 12:00 | 07:32 |
| 12/08/2016 | 15/08/2016 | 17:00 | 11:37 | 12/08/2016 | 19/08/2016 | 12:00 | 12:00 |
| 13/08/2016 | 15/08/2016 | 17:00 | 11:42 | 13/08/2016 | 19/08/2016 | 12:00 | 12:00 |
| 14/08/2016 | 15/08/2016 | 17:00 | 15:41 | 14/08/2016 | 19/08/2016 | 12:00 | 08:02 |
| 15/08/2016 | 16/08/2016 | 17:00 | 15:42 | 15/08/2016 | 22/08/2016 | 12:00 | 08:55 |
| 16/08/2016 | 17/08/2016 | 17:00 | 15:26 | 16/08/2016 | 23/08/2016 | 12:00 | 07:10 |
| 17/08/2016 | 18/08/2016 | 17:00 | 15:30 | 17/08/2016 | 24/08/2016 | 12:00 | 08:40 |
| 18/08/2016 | 19/08/2016 | 17:00 | 16:01 | 18/08/2016 | 25/08/2016 | 12:00 | 07:36 |
| 19/08/2016 | 22/08/2016 | 17:00 | 11:31 | 19/08/2016 | 26/08/2016 | 12:00 | 12:00 |
| 20/08/2016 | 22/08/2016 | 17:00 | 11:58 | 20/08/2016 | 26/08/2016 | 12:00 | 12:00 |
| 21/08/2016 | 22/08/2016 | 17:00 | 15:38 | 21/08/2016 | 26/08/2016 | 12:00 | 07:26 |
| 22/08/2016 | 23/08/2016 | 17:00 | 15:27 | 22/08/2016 | 29/08/2016 | 12:00 | 09:31 |
| 23/08/2016 | 24/08/2016 | 17:00 | 16:46 | 23/08/2016 | 30/08/2016 | 12:00 | 09:00 |
| 24/08/2016 | 25/08/2016 | 17:00 | 15:43 | 24/08/2016 | 31/08/2016 | 12:00 | 08:26 |
| 25/08/2016 | 26/08/2016 | 17:00 | 15:17 | 25/08/2016 | 01/09/2016 | 12:00 | 08:17 |
| 26/08/2016 | 29/08/2016 | 17:00 | 13:14 | 26/08/2016 | 02/09/2016 | 12:00 | 12:00 |
| 27/08/2016 | 29/08/2016 | 17:00 | 13:28 | 27/08/2016 | 02/09/2016 | 12:00 | 12:00 |
| 28/08/2016 | 29/08/2016 | 17:00 | 15:35 | 28/08/2016 | 02/09/2016 | 12:00 | 08:00 |
| 29/08/2016 | 30/08/2016 | 17:00 | 15:28 | 29/08/2016 | 05/09/2016 | 12:00 | 08:58 |
| 30/08/2016 | 31/08/2016 | 17:00 | 16:29 | 30/08/2016 | 06/09/2016 | 12:00 | 07:42 |
| 31/08/2016 | 01/09/2016 | 17:00 | 16:04 | 31/08/2016 | 07/09/2016 | 12:00 | 08:56 |

Table 19 – Settlement Runs

10. 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 |
|------------|---------------------|---------------------------------|-----------------------|
| 01/10/2015 | €184,048.17 | -€2,821.59 | -€417,294.17 |
| 02/10/2015 | €236,003.67 | -€8,758.78 | -€418,385.31 |
| 03/10/2015 | €447,568.14 | -€8,429.85 | -€381,381.79 |
| 04/10/2015 | €355,210.41 | -€24,773.87 | -€349,405.45 |
| 05/10/2015 | €403,998.22 | -€16,845.94 | -€406,685.67 |
| 06/10/2015 | €408,090.09 | -€11,370.17 | -€409,451.55 |
| 07/10/2015 | €396,852.65 | -€1,016.51 | -€416,499.23 |
| 08/10/2015 | €833,027.77 | -€21,031.97 | -€419,217.67 |
| 09/10/2015 | €571,135.00 | -€23,911.84 | -€409,985.99 |
| 10/10/2015 | €426,624.39 | -€275.88 | -€376,563.72 |
| 11/10/2015 | €590,507.33 | -€216.51 | -€366,642.39 |
| 12/10/2015 | €615,907.40 | -€2,922.19 | -€408,081.59 |
| 13/10/2015 | €488,323.11 | -€17,640.65 | -€428,288.19 |
| 14/10/2015 | €323,841.39 | -€15,630.17 | -€430,023.84 |
| 15/10/2015 | €570,171.09 | -€34,678.33 | -€435,691.74 |
| 16/10/2015 | €504,000.21 | €18,400.98 | -€429,027.80 |
| 17/10/2015 | €539,706.96 | -€10,829.35 | -€390,086.25 |
| 18/10/2015 | €266,275.31 | -€19,394.40 | -€378,763.32 |
| 19/10/2015 | €691,729.65 | -€1,637.61 | -€431,384.59 |
| 20/10/2015 | €416,398.00 | -€16,742.61 | -€431,705.80 |
| 21/10/2015 | €432,672.89 | €2,922.97 | -€414,059.84 |
| 22/10/2015 | €641,039.51 | -€16,128.91 | -€417,064.06 |
| 23/10/2015 | €459,729.27 | -€2,884.82 | -€406,407.83 |
| 24/10/2015 | €402,573.36 | -€210.62 | -€371,022.63 |
| 25/10/2015 | €555,628.53 | -€9,138.35 | -€360,591.55 |
| 26/10/2015 | €564,608.59 | -€10,138.06 | -€363,999.10 |
| 27/10/2015 | €330,626.10 | -€5,378.00 | -€424,726.29 |
| 28/10/2015 | €336,368.51 | €2,317.42 | -€421,130.98 |
| 29/10/2015 | €695,460.11 | -€15,712.74 | -€418,305.21 |
| 30/10/2015 | €614,928.96 | -€7,082.05 | -€407,138.37 |
| 31/10/2015 | €291,199.69 | -€8,191.01 | -€379,817.58 |
| 01/11/2015 | €219,117.61 | -€16,496.48 | -€370,314.93 |
| 02/11/2015 | €418,967.95 | -€965.50 | -€422,957.41 |
| 03/11/2015 | €375,447.29 | -€8,157.08 | -€443,867.51 |
| 04/11/2015 | €401,223.42 | -€20,165.19 | -€446,024.38 |
| 05/11/2015 | €326,445.86 | -€1,493.30 | -€443,483.97 |
| 06/11/2015 | €461,976.61 | -€30,206.25 | -€413,708.71 |
| 07/11/2015 | €776,346.02 | -€22,596.69 | -€388,100.95 |
| 08/11/2015 | €351,184.98 | -€7,740.85 | -€356,069.06 |
| 09/11/2015 | €637,710.42 | -€15,306.58 | -€410,651.49 |

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| | | | |
|------------|-------------|-------------|--------------|
| 10/11/2015 | €346,932.55 | €18,683.61 | -€423,279.30 |
| 11/11/2015 | €413,412.33 | -€1,064.81 | -€424,401.75 |
| 12/11/2015 | €529,981.98 | -€242.98 | -€418,872.75 |
| 13/11/2015 | €569,259.07 | -€8,771.45 | -€422,080.80 |
| 14/11/2015 | €774,203.83 | €7,975.32 | -€400,612.57 |
| 15/11/2015 | €652,155.86 | -€1,432.95 | -€362,387.34 |
| 16/11/2015 | €393,453.63 | -€59.62 | -€426,655.42 |
| 17/11/2015 | €722,783.23 | -€4,356.33 | -€445,955.61 |
| 18/11/2015 | €656,773.28 | -€14,208.65 | -€430,119.19 |
| 19/11/2015 | €574,200.46 | €5,810.96 | -€443,090.07 |
| 20/11/2015 | €502,887.86 | -€13,637.60 | -€434,712.02 |
| 21/11/2015 | €329,836.85 | -€38,020.15 | -€414,867.81 |
| 22/11/2015 | €409,044.29 | -€33,132.32 | -€401,644.24 |
| 23/11/2015 | €544,326.53 | -€41,817.18 | -€458,997.21 |
| 24/11/2015 | €672,152.53 | -€33,178.27 | -€447,378.21 |
| 25/11/2015 | €499,335.30 | -€28,725.98 | -€443,985.11 |
| 26/11/2015 | €513,763.56 | -€25,251.46 | -€450,711.04 |
| 27/11/2015 | €517,347.42 | €5,245.16 | -€433,116.49 |
| 28/11/2015 | €528,876.77 | -€26,426.01 | -€399,484.36 |
| 29/11/2015 | €778,321.27 | -€1,046.20 | -€383,956.46 |
| 30/11/2015 | €479,044.79 | -€9,894.47 | -€463,918.12 |
| 01/12/2015 | €688,673.73 | -€26,887.62 | -€438,251.29 |
| 02/12/2015 | €317,798.49 | -€52,895.68 | -€456,989.27 |
| 03/12/2015 | €405,603.50 | -€5,897.64 | -€476,134.19 |
| 04/12/2015 | €774,967.27 | -€15,545.28 | -€438,397.60 |
| 05/12/2015 | €640,701.45 | -€13,804.14 | -€404,055.15 |
| 06/12/2015 | €366,403.91 | -€12,707.39 | -€396,607.78 |
| 07/12/2015 | €733,517.52 | -€25,280.71 | -€433,440.19 |
| 08/12/2015 | €432,398.54 | -€17,081.48 | -€445,634.75 |
| 09/12/2015 | €542,863.04 | -€14,765.85 | -€444,156.73 |
| 10/12/2015 | €335,601.49 | -€40,789.27 | -€457,423.12 |
| 11/12/2015 | €426,928.12 | -€51,155.51 | -€457,168.99 |
| 12/12/2015 | €558,417.52 | -€21,084.89 | -€437,241.40 |
| 13/12/2015 | €546,224.69 | -€43,154.55 | -€414,260.41 |
| 14/12/2015 | €686,747.66 | -€34,497.65 | -€460,059.67 |
| 15/12/2015 | €625,379.03 | -€6,605.71 | -€453,446.82 |
| 16/12/2015 | €674,889.78 | -€18,367.78 | -€449,690.27 |
| 17/12/2015 | €534,573.55 | -€35,533.70 | -€433,385.22 |
| 18/12/2015 | €561,845.35 | -€6,582.15 | -€425,519.13 |
| 19/12/2015 | €423,888.14 | -€5,214.50 | -€388,770.80 |
| 20/12/2015 | €458,505.06 | -€21,975.88 | -€375,498.89 |
| 21/12/2015 | €605,543.76 | €16,466.74 | -€428,588.77 |
| 22/12/2015 | €548,907.53 | -€12,058.23 | -€427,504.11 |
| 23/12/2015 | €472,007.50 | -€19,683.94 | -€413,722.07 |
| 24/12/2015 | €507,025.65 | -€5,808.78 | -€397,502.21 |
| 25/12/2015 | €466,531.15 | -€19,958.55 | -€378,631.22 |
| 26/12/2015 | €672,569.18 | -€36,627.88 | -€371,370.00 |
| 27/12/2015 | €577,471.28 | -€14,743.88 | -€363,828.00 |
| 28/12/2015 | €541,909.71 | -€15,443.22 | -€370,868.50 |
| 29/12/2015 | €562,888.56 | -€24,503.42 | -€390,443.22 |
| 30/12/2015 | €549,349.10 | -€30,384.77 | -€406,360.94 |
| 31/12/2015 | €531,182.78 | -€18,802.40 | -€401,563.71 |
| 01/01/2016 | €689,760.94 | -€850.06 | -€365,263.12 |
| 02/01/2016 | €492,831.57 | -€16,808.75 | -€390,938.01 |

Market Operator Monthly Report

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|------------|---------------|-------------|--------------|
| 03/01/2016 | €669,891.66 | -€16,141.80 | -€375,443.72 |
| 04/01/2016 | €573,233.57 | -€34,326.56 | -€450,226.02 |
| 05/01/2016 | €435,278.99 | -€25,445.82 | -€460,068.79 |
| 06/01/2016 | €585,769.51 | -€22,376.47 | -€460,608.31 |
| 07/01/2016 | €564,412.70 | -€26,102.04 | -€457,172.75 |
| 08/01/2016 | €641,220.35 | -€42,045.33 | -€471,327.45 |
| 09/01/2016 | €465,563.07 | -€46,512.09 | -€432,525.47 |
| 10/01/2016 | €374,477.07 | -€17,958.10 | -€398,740.15 |
| 11/01/2016 | €730,610.46 | -€22,706.28 | -€462,407.83 |
| 12/01/2016 | €893,675.22 | -€25,526.60 | -€461,905.69 |
| 13/01/2016 | €609,072.41 | -€16,239.00 | -€490,044.13 |
| 14/01/2016 | €614,891.06 | -€3,271.45 | -€481,120.21 |
| 15/01/2016 | €806,386.69 | -€13,038.69 | -€478,851.54 |
| 16/01/2016 | €589,940.36 | -€24,198.25 | -€449,493.17 |
| 17/01/2016 | €656,975.06 | -€19,835.70 | -€405,187.70 |
| 18/01/2016 | €591,258.57 | -€22,988.96 | -€471,911.07 |
| 19/01/2016 | €587,424.24 | -€18,363.37 | -€485,999.85 |
| 20/01/2016 | €1,130,986.02 | -€21,465.95 | -€462,957.59 |
| 21/01/2016 | €353,313.73 | -€13,537.96 | -€450,018.68 |
| 22/01/2016 | €611,509.08 | -€17,971.52 | -€426,380.74 |
| 23/01/2016 | €460,904.51 | -€2,280.58 | -€398,950.24 |
| 24/01/2016 | €550,240.84 | -€14,040.81 | -€368,837.06 |
| 25/01/2016 | €548,029.04 | -€20,439.75 | -€421,148.52 |
| 26/01/2016 | €568,891.68 | -€11,807.40 | -€438,987.16 |
| 27/01/2016 | €471,646.80 | -€12,605.30 | -€447,546.40 |
| 28/01/2016 | €450,308.88 | -€17,111.09 | -€442,561.56 |
| 29/01/2016 | €549,778.85 | -€4,890.00 | -€428,252.99 |
| 30/01/2016 | €410,857.34 | -€10,070.58 | -€406,925.84 |
| 31/01/2016 | €585,912.71 | -€17,459.55 | -€386,206.91 |
| 01/02/2016 | €597,150.16 | -€12,412.60 | -€426,860.33 |
| 02/02/2016 | €380,507.04 | -€19,759.58 | -€446,374.43 |
| 03/02/2016 | €671,315.54 | -€1,166.20 | -€456,336.81 |
| 04/02/2016 | €535,464.92 | -€655.11 | -€446,131.01 |
| 05/02/2016 | €532,123.12 | -€5,234.49 | -€445,145.43 |
| 06/02/2016 | €611,816.37 | €3,469.28 | -€397,155.42 |
| 07/02/2016 | €572,044.92 | -€15,082.20 | -€383,519.56 |
| 08/02/2016 | €346,687.44 | -€10,745.66 | -€444,677.22 |
| 09/02/2016 | €692,018.61 | €8,717.03 | -€466,634.24 |
| 10/02/2016 | €365,519.47 | -€19,256.45 | -€479,732.00 |
| 11/02/2016 | €440,884.72 | -€14,699.34 | -€484,418.79 |
| 12/02/2016 | €461,892.87 | -€7,890.12 | -€471,801.73 |
| 13/02/2016 | €421,162.35 | -€1,749.04 | -€416,553.79 |
| 14/02/2016 | €384,321.37 | -€10,278.02 | -€396,826.45 |
| 15/02/2016 | €510,101.40 | -€19,364.23 | -€467,693.28 |
| 16/02/2016 | €315,785.88 | €2,093.47 | -€457,602.33 |
| 17/02/2016 | €626,657.48 | -€23,789.13 | -€480,813.42 |
| 18/02/2016 | €560,025.64 | -€12,342.48 | -€475,118.65 |
| 19/02/2016 | €504,377.27 | -€10,985.27 | -€446,158.68 |
| 20/02/2016 | €554,774.66 | -€4,450.23 | -€397,610.37 |
| 21/02/2016 | €633,946.93 | -€5,175.90 | -€383,845.09 |
| 22/02/2016 | €241,660.16 | -€8,119.39 | -€455,503.59 |
| 23/02/2016 | €448,946.36 | -€15,627.46 | -€471,687.19 |
| 24/02/2016 | €555,735.22 | -€27,144.18 | -€480,968.29 |
| 25/02/2016 | €314,829.66 | -€28,796.52 | -€485,404.36 |

Market Operator Monthly Report

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|------------|-------------|-------------|--------------|
| 26/02/2016 | €398,677.03 | -€17,958.54 | -€466,615.98 |
| 27/02/2016 | €421,234.85 | -€4,172.24 | -€429,974.96 |
| 28/02/2016 | €745,089.34 | -€19,065.57 | -€408,933.48 |
| 29/02/2016 | €553,599.98 | -€16,799.69 | -€450,927.54 |
| 01/03/2016 | €465,209.57 | -€12,894.41 | -€439,436.86 |
| 02/03/2016 | €341,005.28 | €541.45 | -€448,860.52 |
| 03/03/2016 | €361,296.67 | -€15,248.88 | -€465,450.15 |
| 04/03/2016 | €411,689.77 | €2,635.53 | -€450,744.99 |
| 05/03/2016 | €504,505.73 | €10,268.92 | -€411,349.56 |
| 06/03/2016 | €641,724.36 | -€24,579.57 | -€412,739.09 |
| 07/03/2016 | €403,341.26 | -€10,007.64 | -€461,004.43 |
| 08/03/2016 | €589,645.13 | -€13,978.70 | -€465,389.27 |
| 09/03/2016 | €478,538.59 | -€293.85 | -€446,891.78 |
| 10/03/2016 | €388,856.94 | -€7,146.47 | -€465,087.27 |
| 11/03/2016 | €363,139.51 | -€9,999.06 | -€441,184.02 |
| 12/03/2016 | €287,695.75 | -€12,213.87 | -€395,809.38 |
| 13/03/2016 | €466,962.47 | €1,463.46 | -€384,948.98 |
| 14/03/2016 | €602,953.47 | €8,906.38 | -€424,191.54 |
| 15/03/2016 | €313,185.11 | -€6,753.87 | -€437,129.27 |
| 16/03/2016 | €418,796.29 | -€4,701.62 | -€446,050.65 |
| 17/03/2016 | €520,302.53 | €7,998.09 | -€395,444.27 |
| 18/03/2016 | €488,526.91 | -€14,066.07 | -€435,207.31 |
| 19/03/2016 | €651,409.40 | €6,794.28 | -€406,828.63 |
| 20/03/2016 | €351,398.79 | -€7,362.25 | -€386,959.22 |
| 21/03/2016 | €446,639.37 | -€1,914.21 | -€453,380.77 |
| 22/03/2016 | €321,933.32 | €931.08 | -€461,357.85 |
| 23/03/2016 | €401,613.29 | -€15,495.07 | -€447,516.93 |
| 24/03/2016 | €358,356.98 | -€17,265.89 | -€432,664.12 |
| 25/03/2016 | €429,281.20 | €17,848.84 | -€399,082.47 |
| 26/03/2016 | €626,651.71 | €9,317.35 | -€375,996.87 |
| 27/03/2016 | €422,089.59 | €26,639.00 | -€337,269.15 |
| 28/03/2016 | €605,126.59 | -€22,540.76 | -€367,547.69 |
| 29/03/2016 | €584,436.80 | -€8,770.30 | -€415,656.12 |
| 30/03/2016 | €317,248.55 | -€16,355.46 | -€434,642.74 |
| 31/03/2016 | €352,454.55 | -€924.03 | -€429,872.19 |
| 01/04/2016 | €254,665.77 | €19,410.52 | -€418,172.85 |
| 02/04/2016 | €273,567.32 | -€1,407.33 | -€404,833.08 |
| 03/04/2016 | €160,794.82 | -€2,047.92 | -€385,435.83 |
| 04/04/2016 | €416,599.77 | -€9,183.59 | -€439,040.73 |
| 05/04/2016 | €250,111.93 | -€5,506.80 | -€433,512.72 |
| 06/04/2016 | €336,670.55 | €8,880.44 | -€416,429.62 |
| 07/04/2016 | €113,656.31 | -€3,252.93 | -€421,102.48 |
| 08/04/2016 | €216,288.56 | €3,619.93 | -€434,709.43 |
| 09/04/2016 | €120,423.37 | €23,055.64 | -€406,334.92 |
| 10/04/2016 | €451,165.73 | -€4,904.32 | -€365,342.88 |
| 11/04/2016 | €27,294.04 | €5,442.30 | -€433,170.38 |
| 12/04/2016 | €381,420.09 | -€13,852.41 | -€448,891.24 |
| 13/04/2016 | €285,398.63 | -€11,332.70 | -€445,360.38 |
| 14/04/2016 | €355,975.07 | -€54,196.75 | -€437,602.19 |
| 15/04/2016 | €386,518.01 | €8,502.73 | -€420,352.20 |
| 16/04/2016 | €61,034.21 | -€17,147.75 | -€388,830.50 |
| 17/04/2016 | €302,335.18 | -€10,404.64 | -€377,211.48 |
| 18/04/2016 | €280,732.73 | €1,419.88 | -€421,534.12 |
| 19/04/2016 | €270,332.02 | €3,286.06 | -€436,536.55 |

Market Operator Monthly Report

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|------------|-------------|-------------|--------------|
| 20/04/2016 | €379,578.06 | €1,507.75 | -€419,156.47 |
| 21/04/2016 | €537,074.46 | €363.23 | -€412,975.33 |
| 22/04/2016 | €361,054.67 | -€4,791.35 | -€408,510.66 |
| 23/04/2016 | €413,344.04 | -€5,088.23 | -€371,723.42 |
| 24/04/2016 | €402,453.12 | -€3,480.08 | -€361,118.12 |
| 25/04/2016 | €610,006.03 | -€10,075.78 | -€395,294.97 |
| 26/04/2016 | €188,667.49 | €6,807.41 | -€407,028.35 |
| 27/04/2016 | €543,611.51 | €20,939.30 | -€427,790.26 |
| 28/04/2016 | €444,164.57 | €2,513.65 | -€425,418.50 |
| 29/04/2016 | €467,497.39 | -€643.14 | -€415,553.12 |
| 30/04/2016 | €367,553.26 | €345.39 | -€382,757.45 |
| 01/05/2016 | €318,711.36 | €46.79 | -€348,183.04 |
| 02/05/2016 | €265,639.36 | €2,900.27 | -€337,474.54 |
| 03/05/2016 | €307,546.49 | -€1,227.25 | -€402,880.19 |
| 04/05/2016 | €275,948.48 | €5,228.96 | -€398,811.00 |
| 05/05/2016 | €224,908.34 | €1,823.53 | -€409,437.33 |
| 06/05/2016 | €196,488.60 | -€3,953.30 | -€405,348.39 |
| 07/05/2016 | €215,106.42 | €13,786.76 | -€372,905.56 |
| 08/05/2016 | €338,654.44 | -€5,241.44 | -€343,553.41 |
| 09/05/2016 | €376,377.42 | €103.57 | -€388,079.13 |
| 10/05/2016 | €232,089.24 | €1,162.31 | -€410,277.96 |
| 11/05/2016 | €94,819.65 | -€9,693.39 | -€407,183.40 |
| 12/05/2016 | €207,182.84 | -€5,530.62 | -€399,631.40 |
| 13/05/2016 | €268,281.83 | €1,281.93 | -€397,583.66 |
| 14/05/2016 | €172,657.73 | €2,100.06 | -€358,479.25 |
| 15/05/2016 | €270,385.84 | €612.81 | -€346,488.38 |
| 16/05/2016 | €74,167.82 | €5,878.68 | -€400,481.38 |
| 17/05/2016 | €206,529.16 | €9,917.38 | -€403,878.41 |
| 18/05/2016 | €261,963.29 | -€5,773.72 | -€402,077.89 |
| 19/05/2016 | €213,366.04 | €6,115.62 | -€393,020.28 |
| 20/05/2016 | €406,247.83 | -€5,794.20 | -€390,136.77 |
| 21/05/2016 | €415,353.52 | -€1,181.85 | -€357,519.37 |
| 22/05/2016 | €416,802.08 | €8,358.08 | -€344,927.61 |
| 23/05/2016 | €184,660.48 | -€991.20 | -€398,423.86 |
| 24/05/2016 | €242,141.63 | -€6,731.50 | -€397,480.27 |
| 25/05/2016 | €88,752.89 | -€2,675.89 | -€401,265.47 |
| 26/05/2016 | €100,636.02 | €12,891.89 | -€418,400.89 |
| 27/05/2016 | €296,388.97 | -€15,542.96 | -€405,625.74 |
| 28/05/2016 | €173,729.31 | €8,352.72 | -€365,500.02 |
| 29/05/2016 | €172,856.92 | -€6,512.65 | -€343,084.06 |
| 30/05/2016 | €199,477.51 | -€8,374.61 | -€386,891.37 |
| 31/05/2016 | €323,036.70 | -€6,178.45 | -€391,492.34 |
| 01/06/2016 | €4,689.24 | €21,790.77 | -€395,637.98 |
| 02/06/2016 | €170,104.82 | -€5,399.31 | -€392,535.51 |
| 03/06/2016 | €203,007.45 | €367.05 | -€389,642.80 |
| 04/06/2016 | €240,011.38 | -€17,200.48 | -€354,718.32 |
| 05/06/2016 | €653,304.41 | €2,066.37 | -€333,219.66 |
| 06/06/2016 | €425,126.49 | €309.62 | -€355,867.53 |
| 07/06/2016 | €238,463.12 | -€40,280.37 | -€404,272.33 |
| 08/06/2016 | €185,076.23 | -€901.65 | -€408,563.94 |
| 09/06/2016 | €425,615.76 | -€13,803.37 | -€404,962.01 |
| 10/06/2016 | €148,642.27 | -€4,413.70 | -€404,552.11 |
| 11/06/2016 | €329,156.32 | -€7,913.95 | -€363,225.22 |
| 12/06/2016 | €379,065.18 | -€14,349.51 | -€343,260.70 |

Market Operator Monthly Report

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|------------|-------------|-------------|--------------|
| 13/06/2016 | €357,133.86 | -€8,460.70 | -€390,988.55 |
| 14/06/2016 | €309,349.55 | €2,481.91 | -€396,200.68 |
| 15/06/2016 | €214,221.50 | -€7,224.12 | -€390,391.93 |
| 16/06/2016 | €295,339.25 | -€871.57 | -€384,521.87 |
| 17/06/2016 | €241,160.11 | -€1,546.15 | -€373,856.93 |
| 18/06/2016 | €117,814.56 | €14,733.17 | -€355,069.54 |
| 19/06/2016 | €313,865.27 | €2,866.81 | -€331,565.47 |
| 20/06/2016 | €291,348.26 | €17,197.78 | -€382,656.28 |
| 21/06/2016 | €169,732.87 | -€10,338.96 | -€384,559.73 |
| 22/06/2016 | €307,400.61 | -€1,798.92 | -€391,664.95 |
| 23/06/2016 | €337,079.60 | -€16,077.12 | -€393,012.28 |
| 24/06/2016 | €207,996.90 | -€5,839.77 | -€387,550.79 |
| 25/06/2016 | €135,149.18 | -€2,997.88 | -€350,475.20 |
| 26/06/2016 | €176,935.50 | -€14,385.45 | -€336,272.59 |
| 27/06/2016 | €185,811.69 | -€4,131.91 | -€375,028.62 |
| 28/06/2016 | €279,569.02 | -€20,336.99 | -€392,693.12 |
| 29/06/2016 | €244,715.70 | -€8,202.56 | -€391,472.97 |
| 30/06/2016 | €236,573.72 | €707.67 | -€390,718.11 |
| 01/07/2016 | €263,258.14 | -€5,365.54 | -€373,468.31 |
| 02/07/2016 | €340,595.24 | €8,692.11 | -€335,966.68 |
| 03/07/2016 | €167,228.70 | -€7,783.05 | -€334,171.13 |
| 04/07/2016 | €375,130.93 | €11,589.89 | -€385,944.30 |
| 05/07/2016 | €92,747.57 | €1,163.57 | -€395,620.05 |
| 06/07/2016 | €147,984.21 | -€7,034.34 | -€393,269.82 |
| 07/07/2016 | €208,150.96 | -€9,043.00 | -€393,924.73 |
| 08/07/2016 | €182,031.00 | €13,276.10 | -€379,568.72 |
| 09/07/2016 | €379,953.41 | €6,389.29 | -€338,738.21 |
| 10/07/2016 | €267,955.27 | €227.24 | -€322,179.36 |
| 11/07/2016 | €141,886.59 | €9,321.03 | -€367,480.28 |
| 12/07/2016 | €175,437.17 | -€4,765.49 | -€374,422.76 |
| 13/07/2016 | €202,877.29 | -€2,241.22 | -€372,836.44 |
| 14/07/2016 | €264,274.44 | -€31,708.60 | -€387,219.85 |
| 15/07/2016 | €307,503.36 | -€4,836.76 | -€377,360.15 |
| 16/07/2016 | €364,565.90 | -€4,161.24 | -€344,322.05 |
| 17/07/2016 | €368,399.47 | €5,116.09 | -€330,568.36 |
| 18/07/2016 | €355,505.26 | -€7,068.38 | -€395,231.09 |
| 19/07/2016 | €411,112.41 | -€5,131.01 | -€402,752.76 |
| 20/07/2016 | €300,071.19 | -€2,619.84 | -€400,350.02 |
| 21/07/2016 | €257,030.71 | -€9,300.19 | -€393,946.54 |
| 22/07/2016 | €254,718.41 | -€9,619.42 | -€392,681.20 |
| 23/07/2016 | €357,003.52 | -€12,401.34 | -€355,221.88 |
| 24/07/2016 | €338,443.20 | -€10,498.34 | -€333,466.63 |
| 25/07/2016 | €385,234.24 | €31,122.75 | -€378,988.53 |
| 26/07/2016 | €359,576.47 | -€38,951.01 | -€396,460.31 |
| 27/07/2016 | €294,689.50 | -€7,006.67 | -€391,034.59 |
| 28/07/2016 | €465,150.53 | €1,066.59 | -€393,061.01 |
| 29/07/2016 | €328,667.28 | -€7,586.59 | -€382,316.19 |
| 30/07/2016 | €301,028.00 | -€2,388.87 | -€349,806.58 |
| 31/07/2016 | €331,573.26 | €1,303.61 | -€332,304.13 |
| 01/08/2016 | €399,223.89 | €16,483.76 | -€347,367.21 |
| 02/08/2016 | €624,360.98 | -€21,253.96 | -€381,282.40 |
| 03/08/2016 | €263,317.40 | -€4,625.88 | -€366,522.98 |
| 04/08/2016 | €192,287.43 | €17,739.00 | -€384,638.04 |
| 05/08/2016 | €372,889.91 | -€3,010.51 | -€388,414.94 |

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| | | | |
|------------|-------------|-------------|--------------|
| 06/08/2016 | €246,123.42 | -€10,662.09 | -€342,649.64 |
| 07/08/2016 | €391,567.29 | €641.79 | -€306,872.47 |
| 08/08/2016 | €273,069.63 | €3,407.73 | -€363,284.20 |
| 09/08/2016 | €330,370.89 | -€3,197.14 | -€381,487.63 |
| 10/08/2016 | €200,168.91 | -€6,308.95 | -€389,680.64 |
| 11/08/2016 | €292,688.05 | €407.89 | -€384,301.81 |
| 12/08/2016 | €260,829.53 | -€7,344.98 | -€371,309.90 |
| 13/08/2016 | €268,974.76 | €32,773.27 | -€352,806.11 |
| 14/08/2016 | €431,542.64 | -€13,323.61 | -€349,024.05 |
| 15/08/2016 | €378,628.14 | -€15,530.77 | -€380,419.59 |
| 16/08/2016 | €372,006.79 | -€4,470.19 | -€388,154.52 |
| 17/08/2016 | €340,339.32 | -€8,000.69 | -€410,218.27 |
| 18/08/2016 | €257,096.17 | -€11,876.52 | -€409,825.51 |
| 19/08/2016 | €326,748.71 | €1,035.96 | -€377,986.51 |
| 20/08/2016 | €272,438.94 | €34.05 | -€349,892.92 |
| 21/08/2016 | €379,308.45 | €1,220.19 | -€339,768.93 |
| 22/08/2016 | €159,044.33 | €1,578.27 | -€393,387.08 |
| 23/08/2016 | €333,525.54 | -€57,181.11 | -€415,831.20 |
| 24/08/2016 | €220,320.68 | €1,137.80 | -€405,709.92 |
| 25/08/2016 | €246,249.39 | -€2,976.10 | -€404,052.59 |
| 26/08/2016 | €223,636.33 | -€2,555.42 | -€384,663.02 |
| 27/08/2016 | €259,333.99 | -€6,394.97 | -€358,311.14 |
| 28/08/2016 | €419,327.21 | €3,809.93 | -€341,441.34 |
| 29/08/2016 | €277,848.83 | -€10,980.65 | -€389,632.95 |
| 30/08/2016 | €279,448.64 | -€4,703.15 | -€389,797.08 |
| 31/08/2016 | €348,860.02 | -€35,514.19 | -€394,911.57 |

Table 20 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

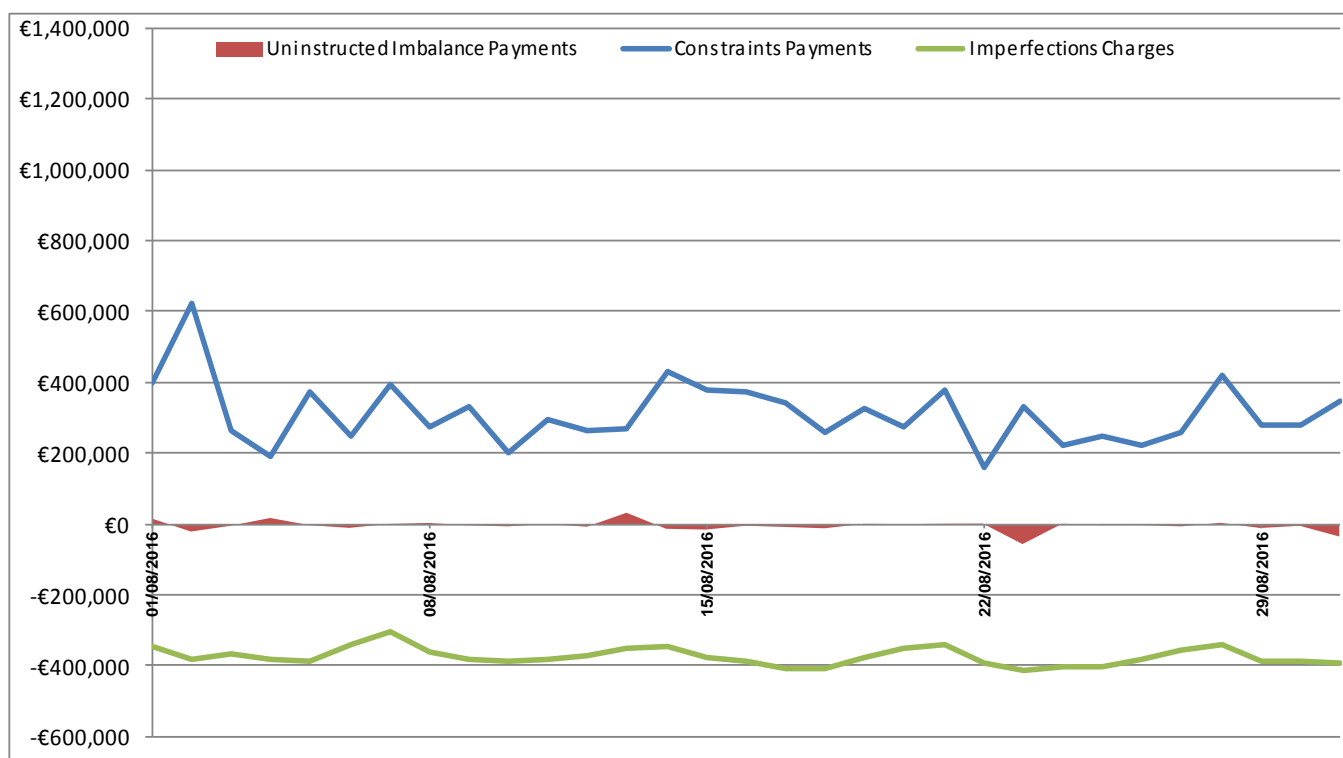


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

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

Table 21 - Make Whole Payments

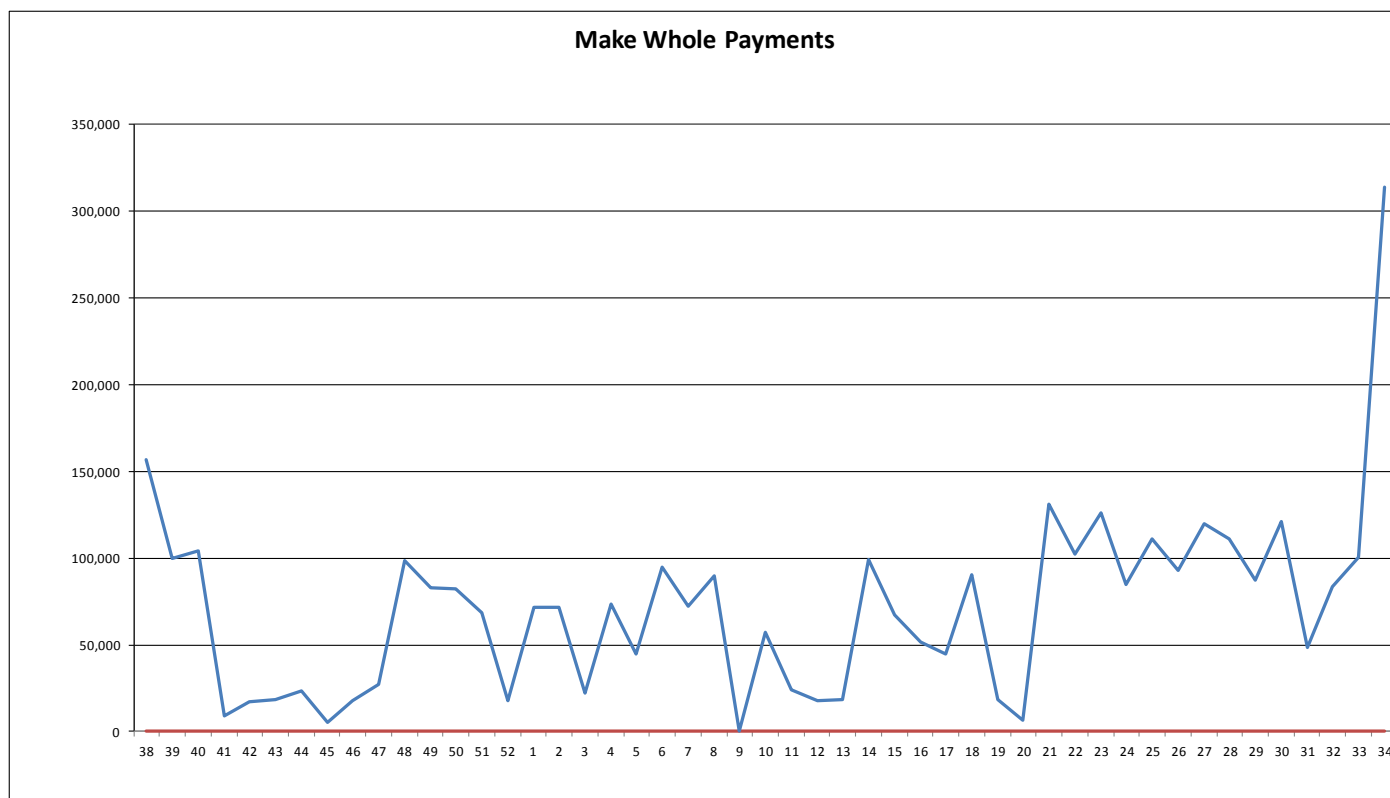


Figure 25 - Make Whole Payments

| Week No | Testing Charges |
|---------|-----------------|
| 38 | -€12,688.71 |
| 39 | -€1,257.57 |
| 40 | -€19,812.53 |
| 41 | -€21,021.55 |
| 42 | -€10,419.94 |
| 43 | -€13,069.61 |
| 44 | -€16,635.14 |
| 45 | -€16,770.11 |
| 46 | -€27,151.66 |
| 47 | €69,699.23 |
| 48 | €0.00 |
| 49 | -€13,909.92 |
| 50 | -€740.68 |
| 51 | -€353.00 |
| 52 | -€456.00 |
| 1 | -€470.00 |
| 2 | -€582.00 |
| 3 | €0.00 |
| 4 | €0.00 |
| 5 | €0.00 |
| 6 | €0.00 |
| 7 | -€4,381.00 |
| 8 | -€313.00 |
| 9 | €0.00 |
| 10 | -€85,485.01 |

| | |
|----|--------------|
| 11 | -€187,782.43 |
| 12 | -€5,476.37 |
| 13 | €0.00 |
| 14 | -€904.60 |
| 15 | -€95,270.20 |
| 16 | €0.00 |
| 17 | -€16,655.87 |
| 18 | €0.00 |
| 19 | €0.00 |
| 20 | -€843.00 |
| 21 | €0.00 |
| 22 | €0.00 |
| 23 | -€10,166.13 |
| 24 | €0.00 |
| 25 | €17,762.06 |
| 26 | €0.00 |
| 27 | -€789.58 |
| 28 | -€134,653.05 |
| 29 | -€87,783.63 |
| 30 | -€175,504.34 |
| 31 | -€2,364.71 |
| 32 | €0.00 |
| 33 | -€59,190.05 |
| 34 | €0.00 |

Table 22 - Testing Charges

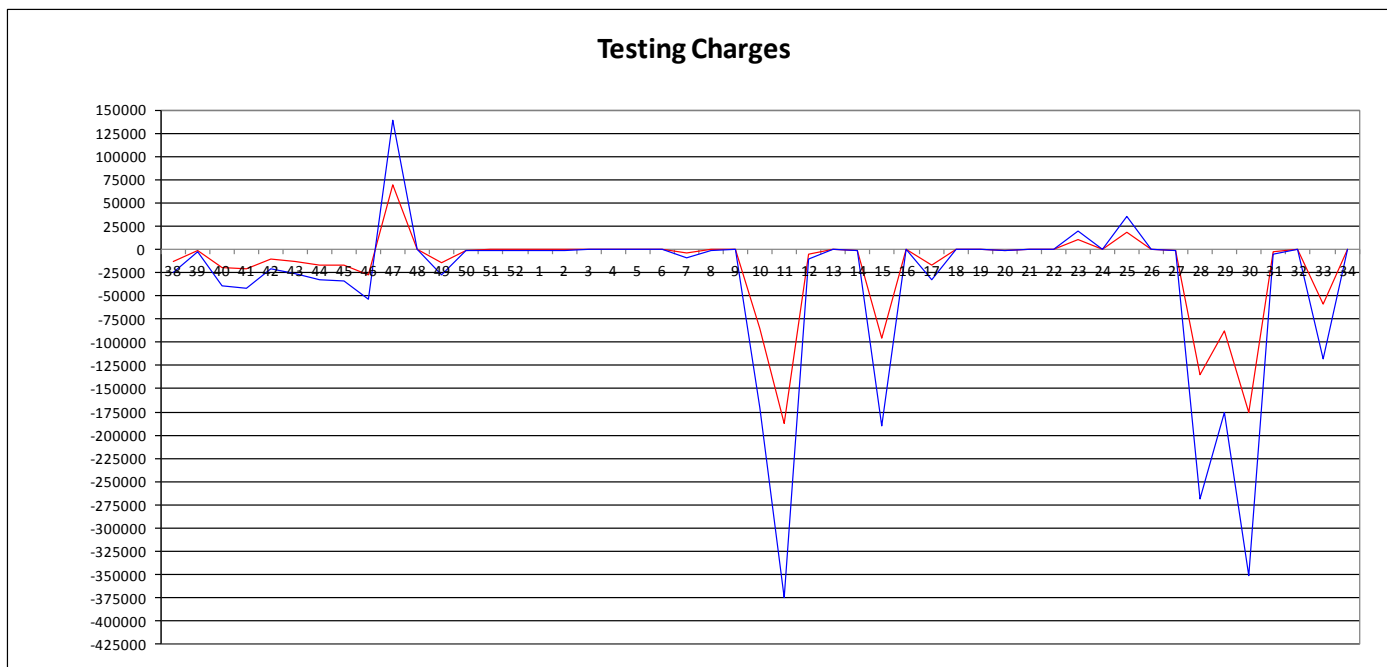


Figure 26 - Testing Charges

11. Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during August 2016 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_400021 | I_ROIEWIC | 29 | | | 29 |
| PT_500021 | I_NIMOYLE | 7 | | | 7 |
| PT_400163 | I_ROIEWIC | 91 | | | 91 |
| PT_500031 | I_NIMOYLE | 31 | | | 31 |
| PT_400157 | I_ROIEWIC | 31 | | | 31 |
| PT_400096 | I_ROIEWIC | 93 | | | 93 |
| PT_400113 | I_ROIEWIC | 14 | | | 14 |
| PT_400115 | I_ROIEWIC | 31 | | | 31 |
| PT_400037 | I_ROIEWIC | 28 | | | 28 |
| PT_400168 | I_ROIEWIC | 69 | | | 69 |
| PT_400108 | I_ROIEWIC | 64 | | | 64 |
| PT_400171 | I_ROIEWIC | 39 | | | 39 |
| PT_400164 | I_ROIEWIC | 28 | | | 28 |
| PT_400170 | I_ROIEWIC | 46 | | | 46 |
| PT_400030 | I_ROIEWIC | 31 | | | 31 |
| PT_400099 | I_ROIEWIC | 45 | | | 45 |
| PT_400024 | GU_400120 | 31 | | | 31 |
| PT_400024 | GU_400121 | 31 | | | 31 |
| PT_400030 | GU_400180 | 35 | | | 35 |
| PT_400030 | GU_400181 | 37 | | | 37 |
| PT_400030 | GU_400182 | 37 | | | 37 |
| PT_400030 | GU_400183 | 37 | | | 37 |
| PT_400030 | GU_400200 | 34 | | | 34 |
| PT_400030 | GU_400201 | 37 | | | 37 |
| PT_400030 | GU_400202 | 35 | | | 35 |
| PT_400030 | GU_400203 | 37 | | | 37 |
| PT_400030 | GU_400210 | 34 | | | 34 |
| 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 | 34 | | | 34 |
| PT_400030 | GU_400252 | 34 | | | 34 |
| PT_400030 | GU_400260 | 34 | | | 34 |
| PT_400030 | GU_400270 | 34 | | | 34 |
| PT_400030 | GU_400271 | 34 | | | 34 |
| PT_400030 | GU_400272 | 34 | | | 34 |
| PT_400030 | GU_400280 | 34 | | | 34 |
| PT_400030 | GU_400281 | 34 | | | 34 |
| PT_400030 | GU_400290 | 34 | | | 34 |
| PT_400030 | GU_400300 | 35 | | | 35 |
| PT_400030 | GU_400311 | 35 | | | 35 |
| PT_400030 | GU_400324 | 35 | | | 35 |
| PT_400030 | GU_400325 | 35 | | | 35 |

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| | | | | |
|-----------|-----------|----|--|----|
| PT_400030 | GU_400360 | 34 | | 34 |
| PT_400030 | GU_400361 | 34 | | 34 |
| PT_400030 | GU_400362 | 34 | | 34 |
| PT_400030 | GU_400363 | 34 | | 34 |
| PT_400030 | GU_400370 | 34 | | 34 |
| PT_400030 | GU_400850 | 35 | | 35 |
| PT_400032 | GU_400430 | 29 | | 29 |
| PT_400034 | GU_400940 | 29 | | 29 |
| PT_400034 | GU_401090 | 29 | | 29 |
| PT_400034 | GU_401440 | 29 | | 29 |
| PT_400034 | GU_401680 | 29 | | 29 |
| PT_400035 | GU_400480 | 56 | | 56 |
| PT_400037 | GU_400500 | 31 | | 31 |
| PT_400041 | GU_400530 | 53 | | 53 |
| PT_400044 | GU_400540 | 56 | | 56 |
| PT_400054 | GU_400620 | 29 | | 29 |
| PT_400055 | GU_400630 | 29 | | 29 |
| PT_400064 | GU_400750 | 31 | | 31 |
| PT_400064 | GU_400751 | 31 | | 31 |
| PT_400064 | GU_400752 | 31 | | 31 |
| PT_400064 | GU_400753 | 31 | | 31 |
| PT_400064 | GU_400762 | 31 | | 31 |
| PT_400064 | GU_400770 | 31 | | 31 |
| PT_400064 | GU_400771 | 31 | | 31 |
| PT_400064 | GU_400780 | 31 | | 31 |
| PT_400064 | GU_400781 | 31 | | 31 |
| PT_400075 | GU_400930 | 64 | | 64 |
| PT_400077 | GU_400950 | 29 | | 29 |
| PT_400078 | GU_401010 | 31 | | 31 |
| PT_400078 | GU_401011 | 31 | | 31 |
| PT_400172 | GU_401860 | 31 | | 31 |
| PT_500024 | GU_500040 | 36 | | 36 |
| PT_500024 | GU_500041 | 31 | | 31 |
| PT_500027 | GU_500130 | 86 | | 86 |
| PT_500027 | GU_500131 | 86 | | 86 |
| PT_500027 | GU_500140 | 86 | | 86 |
| PT_500034 | GU_501350 | 33 | | 33 |
| 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 |
| PT_500045 | GU_500825 | 31 | | 31 |
| PT_500048 | GU_500904 | 51 | | 51 |
| PT_500050 | GU_501040 | 29 | | 29 |
| PT_500050 | GU_501050 | 29 | | 29 |
| PT_500050 | GU_501150 | 29 | | 29 |
| PT_500050 | GU_501190 | 29 | | 29 |
| PT_500053 | GU_501130 | 31 | | 31 |
| PT_500066 | GU_501210 | 29 | | 29 |

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| | | | | | |
|-----------|------------|----|--|----|----|
| PT_500073 | GU_501230 | 5 | | | 5 |
| PT_400138 | DSU_401590 | 31 | | | 31 |
| PT_400090 | DSU_401610 | 31 | | | 31 |
| PT_400124 | DSU_401880 | 2 | | | 2 |
| PT_400090 | DSU_401620 | 31 | | | 31 |
| PT_400116 | DSU_401400 | 31 | | | 31 |
| PT_400116 | DSU_401870 | 9 | | | 9 |
| PT_500098 | DSU_501450 | 9 | | | 9 |
| PT_400090 | DSU_401270 | 31 | | | 31 |
| PT_400106 | DSU_401330 | 32 | | | 32 |
| PT_400124 | DSU_401490 | 30 | | | 30 |
| 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_401600 | | | 31 | 31 |
| PT_400021 | GU_401640 | | | 31 | 31 |
| PT_400025 | GU_400130 | | | 31 | 31 |
| PT_400032 | GU_400430 | | | 2 | 2 |
| PT_400034 | GU_400940 | | | 2 | 2 |
| PT_400034 | GU_401090 | | | 2 | 2 |
| PT_400034 | GU_401440 | | | 2 | 2 |
| PT_400034 | GU_401680 | | | 2 | 2 |
| 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_400054 | GU_400620 | | | 2 | 2 |
| PT_400055 | GU_400630 | | | 2 | 2 |
| PT_400062 | GU_400730 | | | 31 | 31 |
| PT_400062 | GU_400731 | | | 31 | 31 |
| PT_400062 | GU_400840 | | | 31 | 31 |
| PT_400066 | GU_401540 | | | 31 | 31 |
| PT_400066 | GU_401820 | | | 31 | 31 |
| PT_400077 | GU_400950 | | | 2 | 2 |
| PT_400082 | GU_401100 | | | 31 | 31 |
| PT_400087 | GU_401230 | | | 31 | 31 |
| PT_400148 | GU_401690 | | | 31 | 31 |
| PT_400150 | GU_401700 | | | 31 | 31 |

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| | | | | | |
|-------------------|------------|---------------|--------------|---------------|----------------|
| PT_400151 | GU_401770 | | | 31 | 31 |
| PT_400151 | GU_401780 | | | 31 | 31 |
| PT_400152 | GU_401710 | | | 31 | 31 |
| PT_400152 | GU_401720 | | | 31 | 31 |
| PT_400152 | GU_401730 | | | 31 | 31 |
| PT_400152 | GU_401740 | | | 31 | 31 |
| PT_400152 | GU_401750 | | | 31 | 31 |
| PT_400152 | GU_401760 | | | 31 | 31 |
| PT_400162 | GU_401830 | | | 31 | 31 |
| PT_500021 | GU_500010 | | | 31 | 31 |
| PT_500021 | GU_500740 | | | 31 | 31 |
| PT_500021 | GU_501160 | | | 31 | 31 |
| PT_500032 | GU_500211 | | | 31 | 31 |
| PT_500032 | GU_501120 | | | 31 | 31 |
| PT_500032 | GU_501280 | | | 31 | 31 |
| PT_500032 | GU_501290 | | | 31 | 31 |
| PT_500032 | GU_501300 | | | 31 | 31 |
| PT_500039 | GU_500270 | | | 31 | 31 |
| PT_500044 | GU_500720 | | | 31 | 31 |
| PT_500047 | GU_500790 | | | 31 | 31 |
| PT_500050 | GU_501040 | | | 2 | 2 |
| PT_500050 | GU_501050 | | | 2 | 2 |
| PT_500050 | GU_501150 | | | 2 | 2 |
| PT_500050 | GU_501190 | | | 2 | 2 |
| PT_500061 | GU_501170 | | | 31 | 31 |
| PT_500062 | GU_501180 | | | 31 | 31 |
| PT_500066 | GU_501210 | | | 2 | 2 |
| PT_500073 | GU_501230 | | | 27 | 27 |
| PT_500074 | GU_501250 | | | 31 | 31 |
| PT_500089 | GU_501360 | | | 31 | 31 |
| PT_400144 | DSU_401660 | | | 31 | 31 |
| PT_400124 | DSU_401490 | | | 1 | 1 |
| PT_400090 | DSU_401850 | | | 31 | 31 |
| PT_500078 | DSU_501330 | | | 31 | 31 |
| PT_400090 | DSU_401800 | | | 31 | 31 |
| PT_400111 | DSU_401390 | | | 31 | 31 |
| PT_500067 | DSU_501380 | | | 31 | 31 |
| PT_400133 | DSU_401530 | | | 31 | 31 |
| Total | | 3884 | 0 | 2100 | 5984 |
| Percentage | | 64.91% | 0.00% | 35.09% | 100.00% |

Table 23 – Commercial Offer Data Used

12. 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 Operator Monthly Report

| 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-14 | ROI | £66,102,607.16 | £27,393,747.26 | £1,496,376.58 | £305,733.65 | £76,911.71 | £2,819.89 | £479,013.35 | £22,451.87 | £9,128.65 | £381,194.91 | £0.00 | £0.00 | £6,269,985.03 |
| | NI | £31,130,342.59 | £9,846,758.26 | £422,869.99 | £25,720.60 | £3,900.39 | £240.37 | £187,918.65 | £15,303.03 | £942.92 | £235.51 | £0.00 | £0.00 | £1,634,332.31 |
| Mar-14 | ROI | £70,041,213.49 | £26,285,336.21 | £1,449,159.95 | £261,906.17 | £61,216.38 | £2,226.19 | £92,283.95 | £30,407.22 | £960.16 | £0.00 | £0.00 | £0.00 | £8,224,709.72 |
| | NI | £30,175,818.70 | £9,293,564.48 | £406,620.40 | £46,940.79 | £7,639.04 | £408.77 | £52,408.32 | £11,933.67 | £470.83 | £0.00 | £0.00 | £0.00 | £9,395,805.00 |
| Apr-14 | ROI | £62,098,778.40 | £21,155,742.39 | £1,388,175.41 | £528,104.58 | £142,466.39 | £4,901.73 | £242,053.48 | £38,030.86 | £1,783.00 | £0.00 | £0.00 | £0.00 | £5,600,036.24 |
| | NI | £26,448,426.91 | £9,644,850.74 | £386,840.18 | £307,948.88 | £77,962.26 | £2,649.15 | £53,805.05 | £9,613.13 | £381.03 | £0.00 | £0.00 | £0.00 | £3,932,477.33 |
| May-14 | ROI | £68,945,192.38 | £22,029,381.87 | £1,615,436.17 | £629,905.18 | £213,410.99 | £7,659.07 | £192,421.65 | £21,030.53 | £1,110.05 | £429,407.30 | £0.00 | £0.00 | £4,084,955.19 |
| | NI | £28,649,957.73 | £7,313,397.03 | £439,831.96 | £149,812.37 | £34,908.87 | £997.82 | £58,386.93 | £9,959.93 | £468.77 | £0.03 | £0.00 | £0.00 | £6,657,721.44 |
| Jun-14 | ROI | £52,841,750.77 | £17,596,854.80 | £1,312,068.35 | £423,771.26 | £115,750.72 | £4,162.65 | £89,169.46 | £18,685.28 | £1,014.73 | £28,526.30 | £0.00 | £0.00 | £2,431,754.32 |
| | NI | £21,944,762.06 | £6,361,219.34 | £345,120.63 | £120,971.43 | £44,784.33 | £1,003.03 | £41,125.48 | £9,461.42 | £415.67 | £2,532.18 | £0.00 | £0.00 | £2,871,395.57 |
| Jul-14 | ROI | £48,255,770.91 | £22,988,780.17 | £1,292,701.68 | £332,606.61 | £88,357.34 | £2,943.28 | £85,242.72 | £17,526.18 | £1,047.39 | £0.00 | £0.00 | £0.00 | £3,064,976.28 |
| | NI | £16,832,807.07 | £5,122,118.14 | £325,108.62 | £91,338.63 | £25,719.39 | £870.76 | £34,166.04 | £7,520.83 | £436.14 | £0.00 | £0.00 | £0.00 | £2,440,085.62 |
| Aug-14 | ROI | £75,858,678.54 | £17,424,467.63 | £1,576,396.05 | £255,748.90 | £41,217.98 | £1,835.23 | £112,980.92 | £0.00 | £1,327.55 | £123,147.19 | £0.00 | £0.00 | £3,064,976.28 |
| | NI | £20,792,697.59 | £5,164,101.59 | £404,571.34 | £73,223.02 | £16,729.14 | £695.03 | £40,446.87 | £0.00 | £491.99 | £10.52 | £0.00 | £0.00 | £2,440,085.62 |
| Sep-14 | ROI | £73,166,499.86 | £17,774,079.00 | £1,638,145.68 | £285,506.09 | £62,431.70 | £3,367.28 | £92,320.83 | £30,020.38 | £728.19 | £0.00 | £0.00 | £0.00 | £9,053,099.01 |
| | NI | £24,828,028.32 | £5,414,449.74 | £421,681.34 | £125,719.19 | £15,188.14 | £566.66 | £41,391.12 | £13,194.54 | £660.78 | £0.00 | £0.00 | £0.00 | £3,797,967.96 |
| Oct-14 | ROI | £24,219,443.57 | £5,293,829.01 | £290,759.61 | £125,095.27 | £15,188.14 | £796.75 | £32,076.91 | £6,465.54 | £355.27 | £0.00 | £0.00 | £0.00 | £2,984,010.07 |
| | NI | £73,931,567.89 | £18,999,271.36 | £1,111,306.76 | £521,095.61 | £105,483.15 | £5,765.50 | £89,815.40 | £9,518.03 | £802.55 | £0.00 | £0.00 | £0.00 | £4,774,626.25 |
| Nov-14 | ROI | £57,386,075.03 | £21,066,561.05 | £829,482.91 | £519,431.32 | £147,151.65 | £6,123.28 | £79,434.93 | £23,622.83 | £721.00 | £0.00 | £0.00 | £0.00 | £8,058,604.00 |
| | NI | £21,159,632.98 | £6,853,966.46 | £220,983.06 | £50,691.24 | £27,250.12 | £653.21 | £26,795.35 | £6,589.23 | £253.47 | £0.00 | £0.00 | £0.00 | £2,346,815.12 |
| Dec-14 | ROI | £70,930,088.87 | £29,867,271.70 | £888,221.25 | £635,976.36 | £143,088.63 | £7,086.94 | £116,364.21 | £26,279.71 | £995.87 | £0.00 | £0.00 | £0.00 | £10,615,373.54 |
| | NI | £24,123,259.48 | £7,725,422.06 | £238,369.94 | £58,794.95 | £14,543.55 | £696.33 | £34,690.50 | £7,234.36 | £296.35 | £0.00 | £0.00 | £0.00 | £3,203,307.52 |
| Jan-15 | ROI | £66,217,285.22 | £32,948,586.09 | £1,048,029.61 | £438,657.65 | £106,047.92 | £3,853.63 | £150,902.14 | £27,588.16 | £819.15 | £0.00 | £2,703.81 | £0.00 | £10,944,473.38 |
| | NI | £27,989,159.87 | £8,572,662.67 | £280,425.53 | £42,989.83 | £9,581.57 | £365.00 | £37,526.70 | £7,104.61 | £229.56 | £0.00 | £1,338.36 | £0.00 | £6,941,383.70 |
| Feb-15 | ROI | £65,650,453.03 | £35,349,682.44 | £856,456.83 | £281,934.15 | £56,929.88 | £1,558.86 | £451,006.63 | £29,817.73 | £839.90 | £68,857.79 | £0.00 | £0.00 | £12,747,537.24 |
| | NI | £25,773,047.64 | £16,395,217.13 | £213,118.58 | £112,874.22 | £37,025.56 | £783.98 | £25,242.43 | £5,150.11 | £140.40 | £0.00 | £0.00 | £0.00 | £4,562,600.05 |
| Mar-15 | ROI | £53,956,274.88 | £21,836,040.18 | £861,676.05 | £453,661.43 | £115,779.65 | £2,416.32 | £355,096.34 | £39,172.70 | £877.23 | £111,462.50 | £0.00 | £0.00 | £7,732,457.28 |
| | NI | £22,615,725.41 | £8,408,410.93 | £207,225.41 | £147,466.81 | £46,471.14 | £825.82 | £39,513.02 | £6,098.32 | £183.02 | £282.78 | £0.00 | £0.00 | £3,172,402.66 |
| Apr-15 | ROI | £49,671,449.35 | £18,463,469.38 | £767,415.15 | £442,875.61 | £132,859.46 | £2,617.91 | £174,481.42 | £24,018.61 | £806.67 | £34,066.85 | £0.00 | £0.00 | £6,714,060.41 |
| | NI | £20,444,248.38 | £5,917,010.08 | £191,002.36 | £78,167.11 | £60,451.34 | £1,059.11 | £38,565.73 | £8,077.48 | £245.07 | £24,964.25 | £0.00 | £0.00 | £2,863,790.91 |
| May-15 | ROI | £62,682,234.81 | £19,502,808.85 | £978,929.74 | £496,789.41 | £113,309.65 | £2,668.35 | £257,691.56 | £37,913.64 | £947.65 | £105,628.08 | £0.00 | £0.00 | £4,178,921.74 |
| | NI | £20,656,049.28 | £5,471,708.22 | £941,978.73 | £284,714.17 | £81,721.34 | £1,530.01 | £28,297.30 | £5,740.95 | £255.12 | £458.23 | £0.00 | £0.00 | £2,472,453.35 |
| Jun-15 | ROI | £49,441,454.53 | £18,011,748.07 | £768,412.90 | £525,988.89 | £125,343.18 | £3,068.91 | £83,564.13 | £14,743.93 | £639.06 | £24,047.90 | £0.00 | £0.00 | £6,899,011.50 |
| | NI | £16,086,817.66 | £4,881,262.27 | £731,152.70 | £190,327.69 | £56,176.06 | £1,108.32 | £14,086.52 | £3,263.83 | £136.37 | £4.82 | £0.00 | £0.00 | £2,196,336.24 |
| Jul-15 | ROI | £60,081,065.67 | £18,106,345.49 | £938,580.42 | £392,863.94 | £100,250.95 | £2,281.34 | £70,409.41 | £14,571.40 | £801.22 | £3,383,812.96 | £0.00 | £0.00 | £3,050,982.80 |
| | NI | £20,399,899.80 | £4,559,620.30 | £901,179.27 | £122,425.31 | £34,196.36 | £798.99 | £13,983.16 | £3,041.83 | £170.87 | £560,424.72 | £0.00 | £0.00 | £2,595,740.61 |
| Aug-15 | ROI | £78,361,586.44 | £18,780,406.68 | £706,070.38 | £980,269.55 | £57,624.58 | £1,113.70 | £78,106.89 | £15,466.63 | £704.85 | £100,608.41 | £0.00 | £0.00 | £9,081,958.11 |
| | NI | £26,593,706.25 | £4,803,877.25 | £717,392.01 | £96,278.24 | £20,145.75 | £293.79 | £11,711.41 | £2,659.00 | £109.44 | £1,579.59 | £0.00 | £0.00 | £3,247,752.73 |
| Sep-15 | ROI | £56,880,935.07 | £19,007,006.26 | £785,990.22 | £310,026.85 | £107,852.47 | £1,796.61 | £36,597.16 | £9,587.72 | £443.17 | £15,420.42 | £0.00 | £0.00 | £7,155,655.95 |
| | NI | £16,638,373.40 | £5,599,036.84 | £750,313.33 | £28,072.71 | £9,405.58 | £194.47 | £6,674.12 | £1,949.58 | £89.21 | £1,839.74 | £0.00 | £0.00 | £2,035,948.98 |
| Oct-15 | ROI | £44,227,777.74 | £22,236,309.33 | £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 | £6,320,576.27 |
| | 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 | £4,034,509.78 |
| Nov-15 | ROI | £56,463,736.52 | £23,128,442.30 | £1,100,826.75 | £429,995.20 | £99,296.34 | £2,542.49 | £702,840.25 | £20,038.40 | £309.43 | £293,116.81 | £0.00 | £380.36 | £8,241,524.85 |
| | NI | £19,619,287.90 | £8,142,113.54 | £256,488.48 | £118,896.22 | £40,962.87 | £778.31 | £41,801.93 | £11,150.14 | £150.06 | £21,408.98 | £0.00 | £1.87 | £8,236,040.30 |
| Dec-15 | ROI | £56,771,584.52 | £26,115,101.51 | £1,227,682.68 | £528,056.78 | £108,604.95 | £3,426.94 | £244,831.00 | £43,714.70 | £499.00 | £0.00 | £0.00 | £0.00 | £8,043,502.08 |
| | NI | £18,807,275.81 | £8,947,272.84 | £1,177,606.04 | £132,697.73 | £37,389.03 | £908.11 | £32,859.97 | £15,486.06 | £141.18 | £0.00 | £0.00 | £0.00 | £2,142,636.77 |
| Jan-16 | ROI | £58,962,181.52 | £24,712,649.02 | £1,489,145.25 | £360,735.59 | £112,295.73 | £2,766.96 | £446,172.64 | £37,483.70 | £461.80 | £0.00 | £0.00 | £0.00 | £6,123,892.21 |
| | NI | £22,884,292.07 | £6,792,946.67 | £1,439,182.95 | £61,720.87 | £33,725.86 | £439.13 | £13,953.72 | £11,288.27 | £91.07 | £0.00 | £0.00 | £0.00 | £3,127,640.61 |
| Feb-16 | ROI | £44,227,777.74 | £22,236,309.33 | £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 | £6,320,576.27 |
| | 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 | £4,034,509.78 |
| Mar-16 | ROI | £46,479,736.23 | £21,810,284.94 | £1,247,077.11 | £218,253.91 | £0.00 | £0.00 | £2,241.73 | £325,512.38 | £0.00 | £184.01 | £10,658.28 | £0.00 | £7,059,948.59 |
| | NI | £18,169,780.86 | £5,723,642.36 | £307,019.09 | £92,518.83 | £0.00 | £0.00 | £1,042.35 | £18,464.14 | £0.00 | £90.30 | £35.07 | £0.00 | £2,312,593.00 |
| 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 | £6,271,037.71 |
| | 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 | £2,196,254.98 |
| May-16 | ROI | £49,184,916.98 | £15,501,521.21 | £ | | | | | | | | | | |

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 |
|--------|-----|----------------|----------------|-------------|--------------|---------------------|-------------|---------------|----------------------|---------------|-----------------|------------------------|-----------------|
| Feb-14 | ROI | €78,679,881.12 | €26,819,095.36 | €304,687.52 | €76,805.50 | €2,536.46 | €531,739.65 | €29,343.21 | €10,349.43 | €443,421.38 | €0.00 | €0.00 | €106,897,859.63 |
| | NI | €29,747,186.53 | €10,347,544.45 | €37,918.21 | €4,082.15 | €214.26 | €179,315.25 | €9,737.45 | €350.80 | €3.55 | €0.00 | €0.00 | €40,326,352.65 |
| Mar-14 | ROI | €75,149,006.14 | €26,180,620.54 | €259,644.98 | €60,397.08 | €2,170.67 | €127,303.70 | €28,200.28 | €10,349.43 | €443,421.38 | €0.00 | €0.00 | €101,808,303.79 |
| | NI | €29,749,446.42 | €9,292,032.85 | €46,950.40 | €8,326.93 | €408.65 | €52,017.29 | €13,760.80 | €471.08 | €0.00 | €0.00 | €0.00 | €39,163,414.42 |
| Apr-14 | ROI | €65,482,679.64 | €21,981,963.17 | €549,302.08 | €147,627.43 | €4,399.40 | €259,726.57 | €38,566.49 | €1,783.33 | €0.00 | €0.00 | €0.00 | €88,466,048.11 |
| | NI | €25,517,456.45 | €8,979,409.88 | €303,950.50 | €73,719.22 | €2,138.60 | €56,294.66 | €9,188.57 | €381.08 | €0.00 | €0.00 | €0.00 | €34,942,538.96 |
| May-14 | ROI | €68,502,489.93 | €22,405,052.21 | €652,683.44 | €210,307.65 | €7,807.32 | €249,029.58 | €16,425.79 | €1,110.17 | €9,581.32 | €0.00 | €0.00 | €92,054,487.41 |
| | NI | €27,515,054.00 | €7,036,489.15 | €150,145.26 | €37,452.65 | €999.79 | €81,713.52 | €13,718.04 | €468.77 | €3.89 | €0.00 | €0.00 | €34,836,045.07 |
| Jun-14 | ROI | €53,863,542.49 | €16,268,861.66 | €424,333.36 | €121,415.36 | €4,245.54 | €106,227.35 | €17,318.53 | €1,014.63 | €10,805.33 | €0.00 | €0.00 | €70,817,764.25 |
| | NI | €18,301,490.12 | €7,464,864.99 | €121,134.45 | €40,186.30 | €1,005.32 | €50,770.87 | €10,564.39 | €415.66 | €29.76 | €0.00 | €0.00 | €25,990,461.86 |
| Jul-14 | ROI | €50,929,138.15 | €21,772,067.06 | €326,631.36 | €82,858.43 | €2,938.18 | €123,130.56 | €17,118.42 | €1,016.51 | €0.00 | €0.00 | €0.00 | €73,254,898.67 |
| | NI | €12,936,147.70 | €6,035,816.09 | €91,479.13 | €29,875.87 | €813.16 | €67,310.27 | €7,807.37 | €427.29 | €0.00 | €0.00 | €0.00 | €19,169,676.88 |
| Aug-14 | ROI | €76,295,371.52 | €16,503,906.00 | €283,973.76 | €42,797.07 | €2,738.01 | €125,676.42 | €0.00 | €1,327.83 | €29.36 | €0.00 | €0.00 | €93,255,819.97 |
| | NI | €17,954,420.41 | €5,911,052.65 | €74,371.07 | €15,553.63 | €863.74 | €54,424.97 | €0.00 | €488.54 | €7.43 | €0.00 | €0.00 | €24,011,182.44 |
| Sep-14 | ROI | €73,630,247.02 | €17,405,067.16 | €261,367.00 | €62,924.88 | €3,377.33 | €73,033.72 | €11,845.94 | €728.13 | €0.00 | €0.00 | €0.00 | €91,448,591.18 |
| | NI | €22,272,153.08 | €5,742,482.51 | €49,069.86 | €14,962.35 | €717.66 | €41,404.59 | €13,672.05 | €509.28 | €0.00 | €0.00 | €0.00 | €28,134,971.38 |
| Oct-14 | ROI | €82,250,495.91 | €18,220,219.93 | €584,729.92 | €104,687.01 | €6,507.05 | €125,335.38 | €9,519.24 | €1,313.25 | €0.00 | €0.00 | €0.00 | €101,302,807.69 |
| | NI | €18,391,944.98 | €5,868,972.09 | €82,257.95 | €1,031.70 | €15,709.16 | €42,677.16 | €6,422.11 | €498.29 | €0.00 | €0.00 | €0.00 | €24,409,513.44 |
| Nov-14 | ROI | €64,818,088.97 | €20,480,936.98 | €530,386.99 | €157,754.12 | €6,116.91 | €78,674.36 | €23,606.67 | €1,289.81 | €0.00 | €0.00 | €0.00 | €86,096,854.81 |
| | NI | €14,616,605.70 | €7,312,194.38 | €50,960.79 | €18,897.71 | €653.20 | €37,498.77 | €6,592.72 | €254.29 | €0.00 | €0.00 | €0.00 | €22,043,657.56 |
| Dec-14 | ROI | €79,262,340.64 | €30,252,803.13 | €636,211.01 | €143,171.30 | €7,087.15 | €116,495.94 | €25,330.11 | €995.97 | €0.00 | €0.00 | €0.00 | €110,444,435.25 |
| | NI | €17,625,339.05 | €7,511,303.13 | €58,743.90 | €14,475.87 | €679.17 | €34,724.44 | €7,982.34 | €296.61 | €0.00 | €0.00 | €0.00 | €25,253,544.51 |
| Jan-15 | ROI | €77,706,417.44 | €34,394,754.66 | €438,764.21 | €107,475.98 | €4,105.28 | €98,914.59 | €27,079.30 | €830.89 | €14,240.78 | €3,537.75 | €0.00 | €112,796,120.88 |
| | NI | €21,735,748.95 | €7,476,289.80 | €38,275.71 | €8,505.48 | €324.11 | €25,331.16 | €7,456.18 | €248.46 | €0.00 | €691.42 | €0.00 | €29,292,871.27 |
| Feb-15 | ROI | €73,470,092.53 | €25,924,536.86 | €296,450.78 | €68,641.91 | €1,587.00 | €108,844.27 | €30,840.66 | €843.06 | €0.00 | €0.00 | €0.00 | €129,901,837.07 |
| | NI | €19,828,437.97 | €15,954,828.70 | €108,022.71 | €28,545.69 | €367.07 | €16,957.65 | €4,432.19 | €141.23 | €0.00 | €0.00 | €0.00 | €35,941,733.21 |
| Mar-15 | ROI | €62,833,350.60 | €23,162,278.12 | €454,954.34 | €115,622.74 | €2,409.00 | €95,140.99 | €35,705.38 | €876.34 | €33.87 | €0.00 | €0.00 | €86,700,371.38 |
| | NI | €18,497,389.79 | €7,572,263.19 | €147,525.82 | €46,556.55 | €825.97 | €19,215.14 | €8,635.89 | €182.86 | €726.16 | €0.00 | €0.00 | €26,293,321.37 |
| Apr-15 | ROI | €55,596,682.04 | €19,228,984.53 | €447,913.03 | €132,018.11 | €2,588.47 | €93,342.92 | €23,125.23 | €794.27 | €27,655.34 | €0.00 | €0.00 | €75,553,103.94 |
| | NI | €14,229,748.35 | €5,312,669.68 | €178,040.01 | €60,667.89 | €1,059.24 | €28,971.47 | €8,624.89 | €241.56 | €20,785.23 | €0.00 | €0.00 | €19,840,808.32 |
| May-15 | ROI | €67,111,651.41 | €19,797,771.76 | €51,325.57 | €496,344.48 | €113,479.16 | €2,634.87 | €257,691.56 | €32,517.87 | €947.37 | €0.00 | €0.00 | €87,864,364.05 |
| | NI | €14,205,268.80 | €5,300,854.82 | €14,374.56 | €284,573.32 | €81,498.12 | €-1,531.15 | €28,297.30 | €9,511.56 | €255.00 | €0.00 | €0.00 | €19,923,102.33 |
| Jun-15 | ROI | €52,399,988.22 | €18,449,916.98 | €50,329.66 | €125,214.44 | €5,091.55 | €2,989.03 | €83,564.13 | €15,091.05 | €633.94 | €0.00 | €0.00 | €71,652,080.73 |
| | NI | €10,536,540.86 | €4,561,917.57 | €13,069.46 | €190,224.00 | €5,986.34 | €-1,109.52 | €14,086.52 | €3,197.29 | €136.59 | €0.00 | €0.00 | €15,375,049.11 |
| Jul-15 | ROI | €63,619,222.88 | €17,795,388.83 | €50,900.02 | €368,804.77 | €98,198.30 | €2,207.87 | €70,409.41 | €14,587.16 | €801.29 | €0.00 | €0.00 | €82,020,520.53 |
| | NI | €12,711,689.30 | €4,703,936.76 | €13,498.87 | €121,756.24 | €35,884.73 | €-799.78 | €13,983.16 | €3,045.41 | €170.96 | €0.00 | €0.00 | €17,603,165.65 |
| Aug-15 | ROI | €78,593,341.57 | €17,976,726.62 | €1,941.74 | €806,815.82 | €62,841.79 | €1,062.49 | €78,106.89 | €15,446.53 | €704.90 | €0.00 | €0.00 | €97,536,988.35 |
| | NI | €18,174,076.35 | €5,392,403.96 | €13,263.37 | €191,650.14 | €15,985.64 | €-294.74 | €11,711.41 | €2,643.17 | €109.50 | €0.00 | €0.00 | €23,801,548.80 |
| Sep-15 | ROI | €53,901,821.24 | €19,234,943.47 | €48,776.08 | €306,959.54 | €78,980.31 | €1,722.88 | €36,597.16 | €9,593.94 | €440.27 | €0.00 | €0.00 | €73,619,834.89 |
| | NI | €12,814,817.71 | €5,453,049.86 | €13,099.19 | €28,119.15 | €30,434.20 | €195.13 | €6,674.12 | €1,961.83 | €89.22 | €0.00 | €0.00 | €18,348,050.15 |
| Oct-15 | 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 |
| Nov-15 | ROI | €59,724,442.55 | €24,802,345.08 | €433,219.82 | €100,606.78 | €2,695.40 | €76,939.05 | €22,197.47 | €318.32 | €37,920.24 | €0.00 | €372.94 | €85,201,057.65 |
| | NI | €17,210,572.00 | €7,020,973.74 | €117,530.15 | €40,056.46 | €765.32 | €30,378.43 | €9,648.77 | €169.03 | €1,973.04 | €0.00 | €0.00 | €24,432,066.94 |
| Dec-15 | ROI | €59,375,497.41 | €26,508,955.84 | €71,188.34 | €529,556.57 | €108,617.22 | €3,421.21 | €244,831.00 | €55,957.02 | €455.17 | €0.00 | €0.00 | €86,898,479.78 |
| | NI | €17,357,006.06 | €8,696,074.34 | €21,111.70 | €132,691.76 | €37,359.60 | €-907.89 | €23,859.97 | €6,608.19 | €129.44 | €0.00 | €0.00 | €26,273,933.17 |
| Jan-16 | ROI | €62,703,601.66 | €25,688,393.77 | €71,195.77 | €374,077.81 | €121,834.36 | €2,764.99 | €446,172.64 | €41,361.35 | €392.53 | €0.00 | €0.00 | €89,449,794.88 |
| | NI | €21,387,445.48 | €6,172,081.95 | €21,233.47 | €63,300.69 | €26,884.30 | €-439.62 | €13,953.72 | €8,383.76 | €72.48 | €0.00 | €0.00 | €27,692,916.23 |
| 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 | €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 |
| Jul-16 | ROI | €53,840,170.28 | €17,104,842.75 | €415,112.37 | €247,294.27 | €5,027.94 | €81,626.06 | | | | | | |

13. Appendix H: Full Balancing Costs

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

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

Trading Market

| Date Of Invoice | Week No | SEM Balancing Costs | VAT Balancing Costs |
|-----------------|---------|---------------------|---------------------|
| 02/10/2015 | 38 | -€1,655,942.38 | € 162,994.80 |
| 09/10/2015 | 39 | -€1,135,216.68 | €177,381.90 |
| 16/10/2015 | 40 | €507,903.08 | €106,382.04 |
| 23/10/2015 | 41 | €681,099.48 | €131,096.53 |
| 30/10/2015 | 42 | €405,933.93 | -€25,867.40 |
| 06/11/2015 | 43 | €559,788.60 | €38,427.78 |
| 13/11/2015 | 44 | -€49,013.58 | €13,013.70 |
| 20/11/2015 | 45 | €760,249.70 | €98,639.75 |
| 27/11/2015 | 46 | €808,399.38 | €71,687.58 |
| 04/12/2015 | 47 | €466,243.69 | -€300,749.94 |
| 11/12/2015 | 48 | €897,437.38 | -€534,740.45 |
| 18/12/2015 | 49 | €141,592.08 | -€388,379.01 |
| 30/12/2015 | 50 | €878,459.85 | -€160,949.17 |
| 05/01/2016 | 51 | €838,626.05 | -€0 |
| 08/01/2016 | 52 | €1,134,591.97 | -€0 |
| 03/01/2016 | 1 | €615,047.23 | -€0 |
| 22/01/2016 | 2 | €1,273,552.21 | -€0 |
| 29/01/2016 | 3 | €1,174,521.30 | -€0 |
| 05/02/2016 | 4 | €504,528.98 | -€0 |
| 12/02/2016 | 5 | €856,861.27 | -€0 |
| 19/02/2016 | 6 | €92,167.26 | -€0 |
| 26/02/2016 | 7 | €255,104.63 | -€0 |
| 04/03/2016 | 8 | -€265,963.47 | -€0 |
| 11/03/2016 | 9 | €256,130.58 | -€0 |
| 21/03/2016 | 10 | -€13,382.85 | -€0 |
| 25/03/2016 | 11 | €531,976.18 | -€0 |
| 01/04/2016 | 12 | -€35,023.74 | -€0 |
| 08/04/2016 | 13 | -€2,353.02 | -€0 |
| 15/04/2016 | 14 | -€1,306,455.65 | -€0 |
| 22/04/2016 | 15 | -€1,078,232.88 | -€0 |
| 29/04/2016 | 16 | -€316,904.19 | -€0 |
| 06/05/2016 | 17 | €225,399.35 | -€0 |
| 13/05/2016 | 18 | -€852,085.24 | -€0 |
| 20/05/2016 | 19 | -€1,030,542.65 | -€0 |
| 27/05/2016 | 20 | -€835,814.27 | -€0 |
| 03/06/2016 | 21 | -€1,224,851.34 | -€0 |
| 10/06/2016 | 22 | -€1,362,326.06 | -€0 |
| 17/06/2016 | 23 | -€334,215.24 | -€0 |
| 24/06/2016 | 24 | -€735,443.16 | -€0 |
| 01/07/2016 | 25 | -€875,900.06 | -€0 |
| 08/07/2016 | 26 | -€911,184.06 | -€0 |
| 15/07/2016 | 27 | -€1,059,451.72 | -€0 |

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| Date Of Invoice | Week No | SEM Balancing Costs | VAT Balancing Costs |
|-----------------|---------|---------------------|---------------------|
| 22/07/2016 | 28 | -€859,485.92 | -€0 |
| 29/07/2016 | 29 | -€407,934.96 | -€0 |
| 05/08/2016 | 30 | -€186,586.75 | -€0 |
| 12/08/2016 | 31 | -€117,429.10 | -€0 |
| 19/08/2016 | 32 | -€511,694.11 | -€0 |
| 26/08/2016 | 33 | -€338,852.43 | -€0 |

Table 25– Full Balancing Costs for Trading Charges and Payments

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

Capacity Market

| Invoice Month | SEM Balancing Costs | VAT Balancing Costs |
|---------------|---------------------|---------------------|
| October 2015 | -€340.35 | -€ 7,800.91 |
| November 2015 | -€386.53 | €20,938.81 |
| December 2015 | -€421.62 | €0 |
| January 2016 | -€365.96 | €0 |
| February 2016 | -€324.58 | €0 |
| March 2016 | -€349.99 | €0 |
| April 2016 | -€246.89 | €0 |
| May 2016 | -€232.99 | €0 |
| June 2016 | -€251.6 | €0 |
| July 2016 | -€202.38 | €0 |
| August 2016 | -€250.61 | €0 |

Table 26 - Balancing Costs for Capacity Settlement

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

14. Appendix I: MSP Algorithms

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

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

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

| Month | Ex-Ante | Ex-Ante 2 | Ex-Post Indicative | Ex-Post Initial | Within Day |
|----------------------|-------------------|---|--|--|-------------------|
| <u>October 2015</u> | - | - | - | - | <u>04/10/2015</u> |
| <u>November 2015</u> | <u>16/11/2015</u> | <u>30/11/2015</u> | <u>26/11/2015</u> | - | - |
| <u>December 2015</u> | - | <u>08/12/2015</u> <u>17/12/2015</u> <u>21/12/2015</u> | <u>08/12/2015</u> <u>10/12/2015</u> <u>11/12/2015</u> <u>14/12/2015</u> | <u>14/12/2015</u> <u>17/12/2015</u> | - |
| <u>January 2016</u> | - | <u>05/02/2016</u> <u>13/01/2016</u> | <u>07/01/2016</u> <u>08/01/2016</u> | <u>08/02/2016</u> <u>26/01/2016</u> | - |
| <u>February 2016</u> | - | - | - | - | <u>10/02/2016</u> |
| <u>March 2016</u> | - | <u>28/03/2016</u> | <u>10/03/2016</u> | <u>10/03/2016</u> | - |
| <u>April 2016</u> | - | - | - | - | - |
| <u>May 2016</u> | - | - | - | - | - |

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| Month | Ex-Ante | Ex-Ante 2 | Ex-Post Indicative | Ex-Post Initial | Within Day |
|-------------|---------|-----------|--------------------|-------------------|------------|
| <u>June</u> | - | - | - | <u>15/06/2016</u> | - |
| <u>July</u> | - | - | - | - | - |
| <u>Aug</u> | - | - | - | <u>16/08/2016</u> | - |

Table 27 - MIP Algorithms

| Operational Date | Trade Date | Run Type | LR Peak SMP | MIP Peak SMP | Published |
|------------------|------------|----------|-------------|--------------|-----------|
| 08/10/2015 | 04/10/2015 | EP2 | €1000 | €71.89 | MIP |
| 15/11/2015 | 16/11/2015 | EA1 | €524.42 | €207.35 | MIP |
| 27/11/2015 | 26/11/2015 | EP1 | €1,000 | €219.39 | MIP |
| 29/11/2015 | 30/11/2015 | EA2 | €1,000 | €169.45 | MIP |
| 07/12/2015 | 08/12/2015 | EA2 | €1,000 | €279.06 | MIP |
| 09/12/2015 | 08/12/2015 | EP1 | €1,000 | €238.81 | MIP |
| 11/12/2015 | 10/12/2015 | EP1 | €1,000 | €279.06 | MIP |
| 12/12/2015 | 11/12/2015 | EP1 | €1,000 | €255.40 | MIP |
| 15/12/2015 | 14/12/2015 | EP1 | €1,000 | €279.06 | MIP |
| 16/12/2015 | 17/12/2015 | EA2 | €1,000 | €203.01 | MIP |
| 18/12/2015 | 14/12/2015 | EP2 | €1,000 | €435.61 | MIP |
| 20/12/2015 | 21/12/2015 | EA2 | €1,000 | €151.53 | MIP |
| 21/12/2015 | 17/12/2015 | EP2 | €513.81 | €412.60 | MIP |
| 04/01/2016 | 05/01/2016 | EA2 | €1,000 | €1,000 | MIP |
| 08/01/2016 | 07/01/2016 | EP1 | €1,000 | €207.75 | MIP |
| 09/01/2016 | 08/01/2016 | EP1 | €1,000 | €279.06 | MIP |
| 12/01/2016 | 13/01/2016 | EA2 | €1,000 | €170.51 | MIP |
| 12/01/2016 | 08/01/2016 | EP2 | €1,000 | €279.06 | MIP |
| 30/01/2016 | 26/01/2016 | EP2 | €1,000 | €207.85 | MIP |
| 10/02/2016 | 10/02/2016 | WD1 | €1,000 | €176.75 | MIP |
| 11/03/2016 | 10/03/2016 | EP1 | €1000 | €179.85 | MIP |
| 14/03/2016 | 10/03/2016 | EP2 | €1000 | €179.38 | MIP |
| 27/03/2016 | 28/03/2016 | EA2 | €1000 | €114.04 | MIP |
| 19/06/2016 | 15/06/2016 | EP2 | €1000 | €279.06 | MIP |
| 20/08/2016 | 16/08/2016 | EP2 | €1000 | €97.16 | MIP |

Table 28 - MIP Vs LR Peak Price Comparison