



# **Market Operator Monthly Report**

## **December 2013**

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### 1 Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of December 2013 and is published in accordance with the Single Electricity Market (SEM) Committee decision and Clause 2.144 of the Trading and Settlement Code. Trading and Settlement Code

During the month of December 2013 Settlements had one late publications as per the Trading and Settlement code.

179 general queries were received in December 2013. During the same period 192 general queries were resolved.

There were three defaults by Participants during December 2013. The largest of these was an Energy M+13 invoice default for €424.95, 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

### 2.1 Code Breaches

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

Code Breaches			Major	Minor
Area				
Data Providers			0	2
Market Participants	Pricing & Scheduling		-	-
	Settlement		-	-
	Funds Transfer		3	-
	Credit Risk Management		2	-
SEMO	Pricing & Scheduling		-	4
	Settlement		-	1
	Funds Transfer		-	-
	Credit Risk Management		-	-
	Other		-	-
<b>Total</b>			<b>5</b>	<b>7</b>

**Table 1 - Code Breaches**

Further details of each of the 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.

### **2.2 *Joining and Terminating Parties and Units***

Two new parties joined the Market in December 2013.

- PY\_000125\_Meitheal na Gaoithe Energy Supply Limited
- PY\_000126\_Endeco - Technologies Limited

There were no terminating parties in December 2013.

Two new units became effective in the Market in December 2013.

- DSU\_401400 – Electricity Exchange Limited DSU
- SU\_400161 – Electricity Exchange Limited TSSU

No units were de-registered from the Market in December 2013.

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

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

### 3 Financial Statistics

#### 3.1 Total Charges for Each Currency

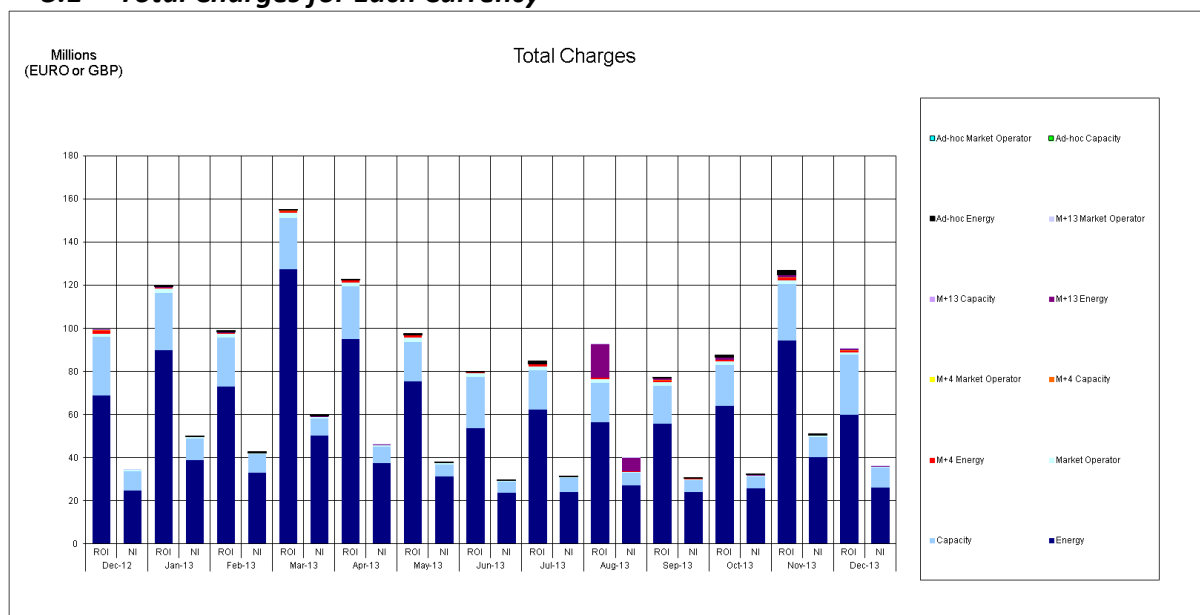


Figure 1 - Total Charges for Each Currency

Market	December-13	
	ROI	NI
Energy	€59,731,700	£26,109,000
Capacity	€27,864,400	£9,220,782
Market Operator	€1,135,385	£325,646
M+4 Energy	€777,997	£58,194
M+4 Capacity	€175,711	£77,917
M+4 Market Operator	€8,516	£572
M+13 Energy	€874,796	£137,253
M+13 Capacity	€44,746	£14,600
M+13 Market Operator	€1,825	£487
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
<b>Total</b>	<b>€90,615,077</b>	<b>£35,944,451</b>

Table 2 - Total Charges for Each Currency

Notes relating to Table 2 and 3:

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

3.2 Total Payments for Each Currency

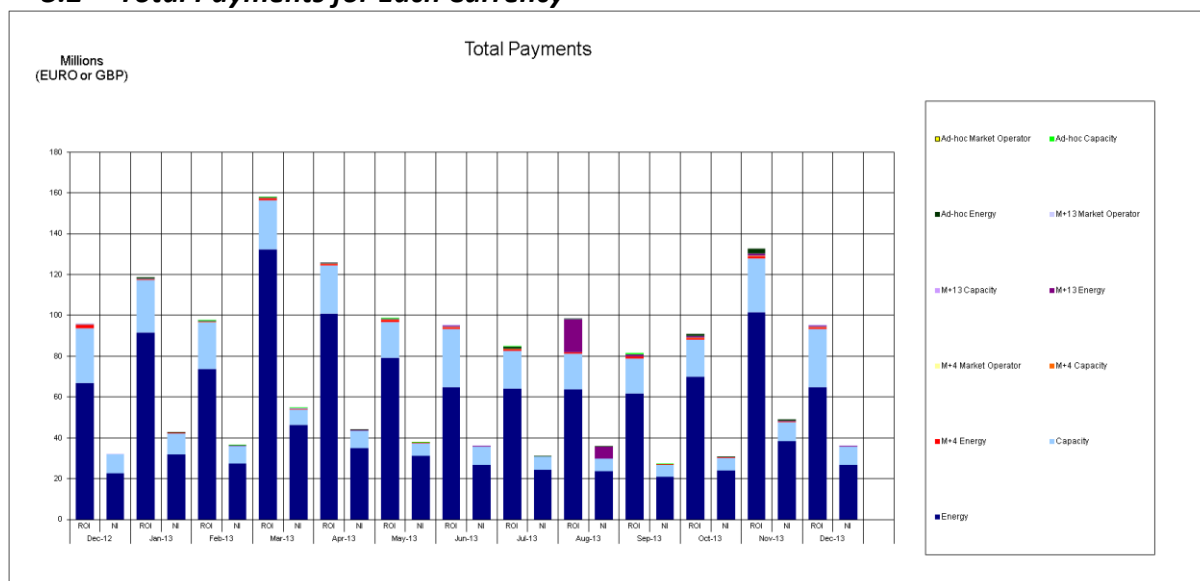


Figure 2 - Total Payments for Each Currency

Market	December-13	
	ROI	NI
Energy	€65,016,105	£26,883,034
Capacity	€28,265,984	£8,854,168
M+4 Energy	€814,482	£62,226
M+4 Capacity	€237,772	£25,458
M+4 Market Operator	€8,561	£563
M+13 Energy	€742,019	£254,390
M+13 Capacity	€45,102	£14,183
M+13 Market Operator	€1,754	£468
Ad-hoc Energy	€0	£0
Ad-hoc Capacity	€0	£0
Ad-hoc Market Operator	€0	£0
<b>Total</b>	<b>€95,131,778</b>	<b>£36,094,490</b>

Table 3 - Total Payments for Each Currency



### 3.3 Total Balancing Costs

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

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

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

	December 2013
<b>Imbalance (Energy Only)</b>	<b>-€21,308,382.56</b>

Table 4 - Balancing Costs for Energy Settlement

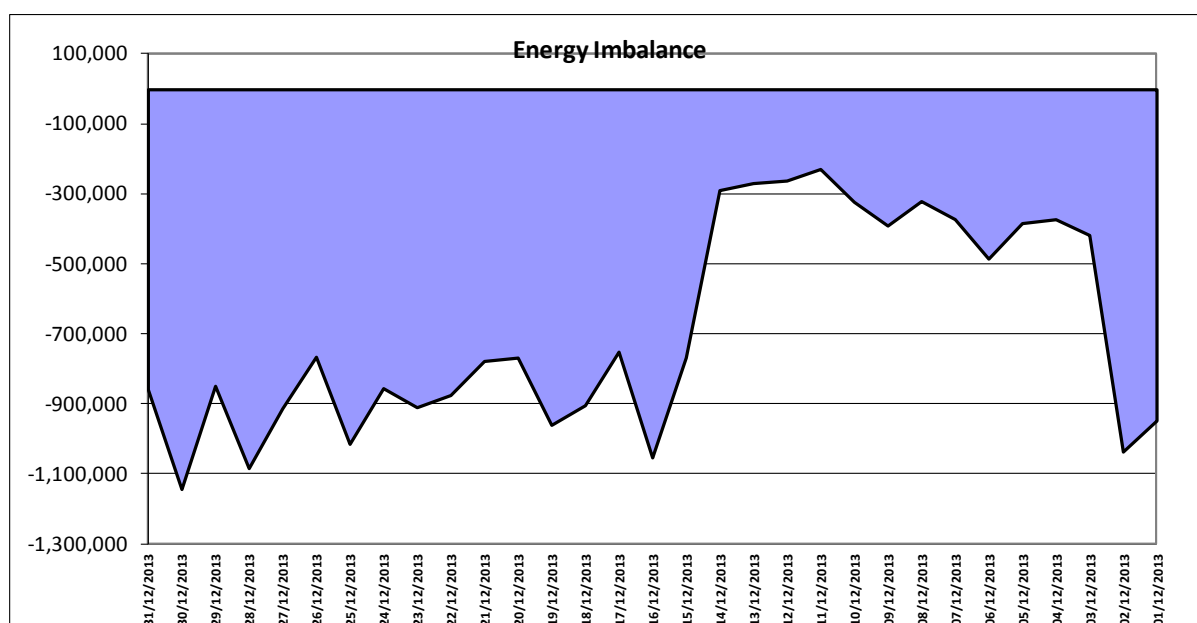


Figure 3 – Energy Imbalances

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
06/12/2013	47	€2,647,032.97	€215,777.46
13/12/2013	48	€752,640.18	€133,576.36
20/12/2013	49	€1,841,603.06	€263,539.44

**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 Code.

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

December 2013	
Capacity Charges	-€56,721,159.95
Capacity Payments	€56,720,765.56
Balancing Costs	-€394.40
VAT	-€454.73

**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.

## Market Operator Monthly Report

### 3.4 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 (or 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 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
30/11/2013	06/12/2013	47	-£32,310.87	£4,482.26	-£27,828.61
07/12/2013	13/12/2013	48	£9,399.69	-£7,654.90	£1,744.79
14/12/2013	20/12/2013	49	£25,412.33	-£3,173.06	£22,239.27

**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 £22,239.79 and a cost of €-27,828.61. Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

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

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

Date Of Invoice	Capacity Month	Currency Costs For Capacity Settlement
10/01/2014	December 2013	-£72,080.70

**Table 8 - Total Currency Costs for Capacity Payments and Charges**

**3.5 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.

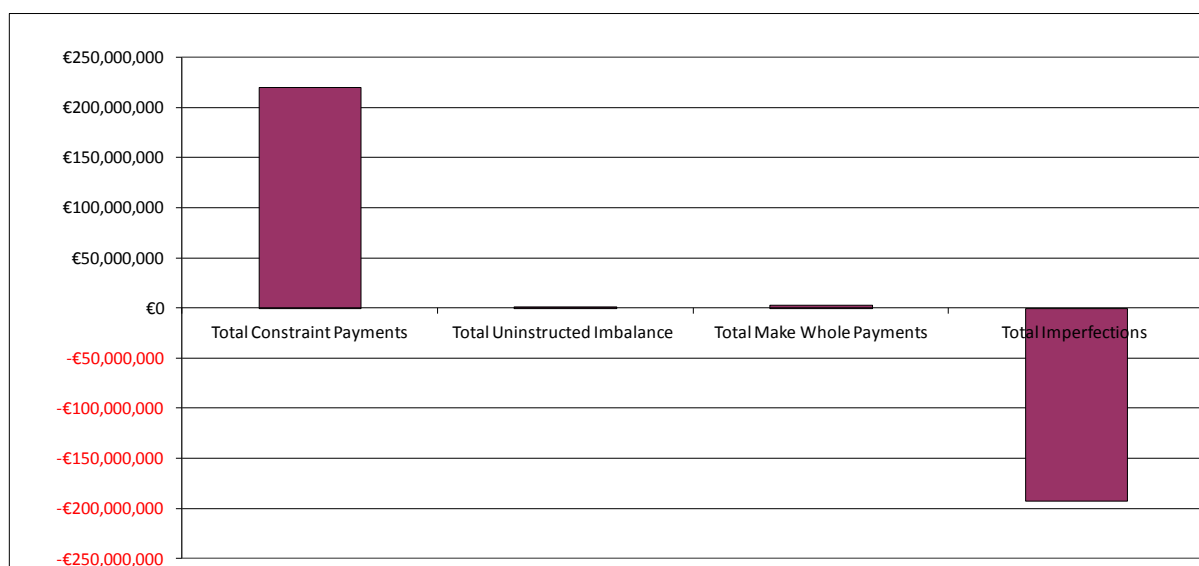
These values have been collected across the months since the start of the new financial year, 1st October 2013. The values expressed in Euros are as follows.

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
€219,919,675.04	€1,449,354.13	€3,067,364.54	-€192,721,110.91

**Table 9 – Cumulative Imperfections Costs Vs Budget**

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](#).

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### 3.6 Financial Changes between Initial Settlement and Subsequent Reruns

The following graphs provide a breakdown of resettlement amounts for the M+4 resettlement period of August 2013 and M+13 resettlement period of November 2012 for Energy and Capacity.

#### 3.6.1 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.

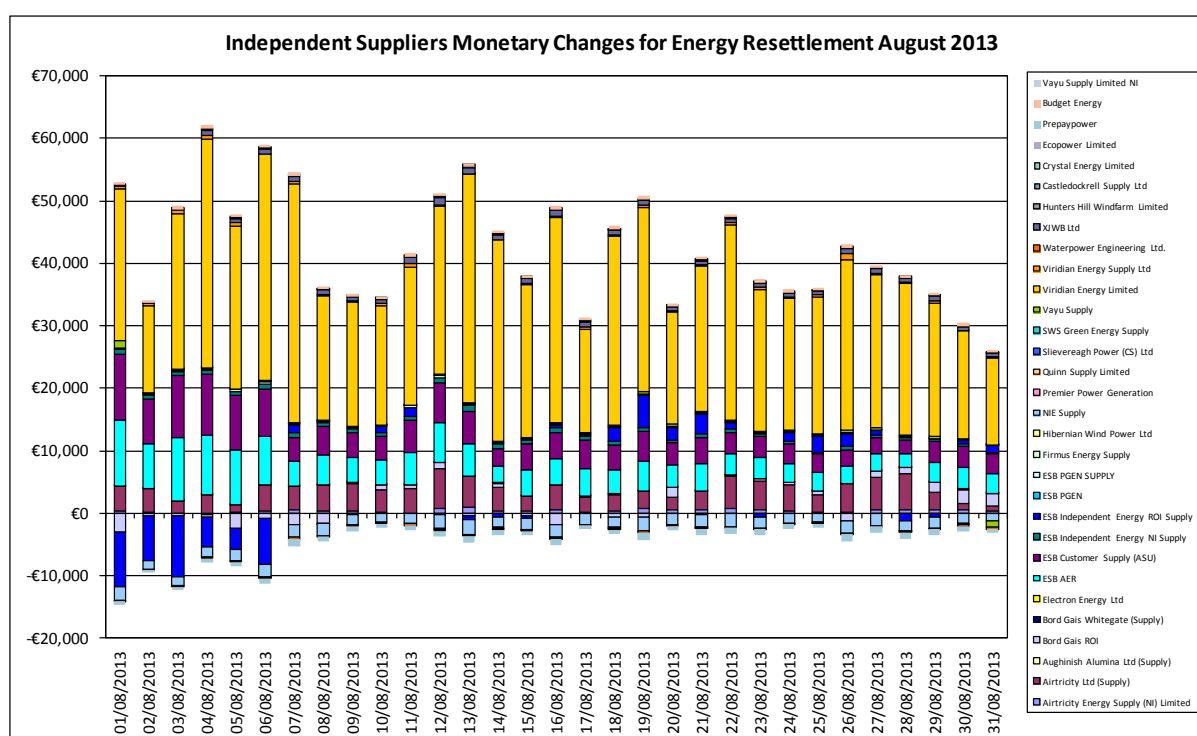


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – August 2013

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

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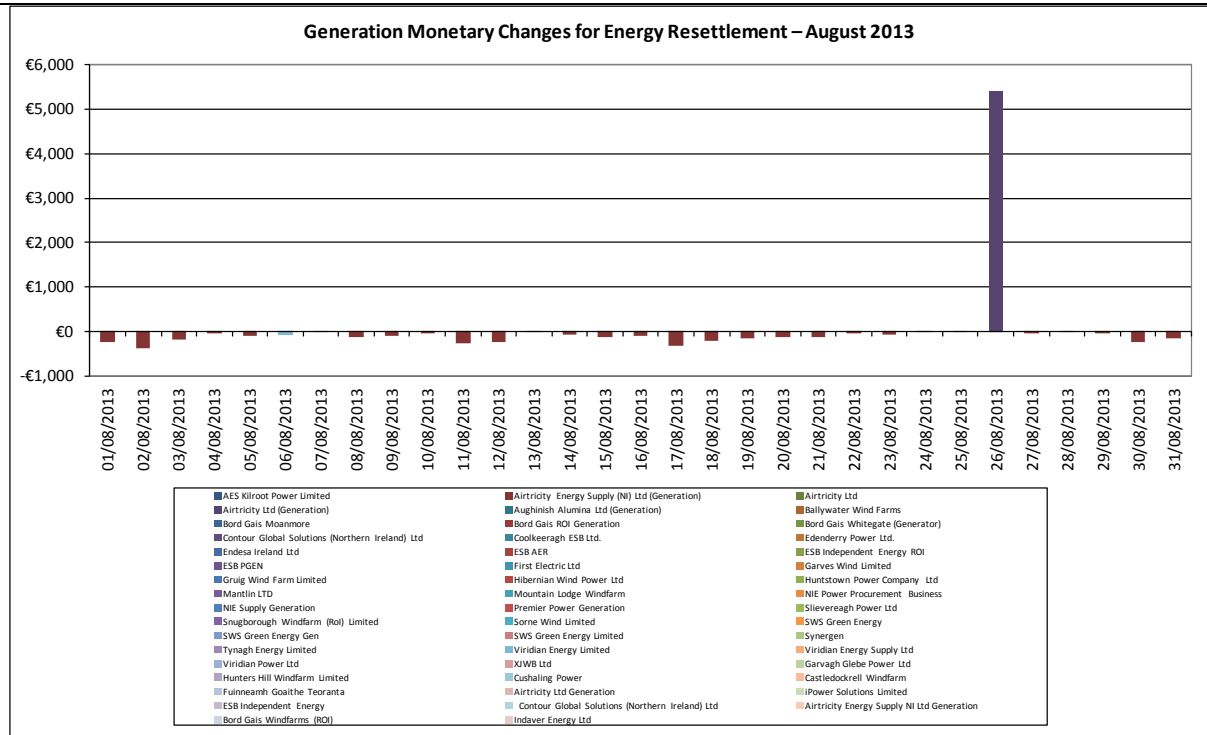


Figure 6 – Generation Monetary Changes for Energy Resettlement – August 2013

Changes noted above are due to revised meter data for an APTG on Trade Date 26<sup>th</sup> August 2013.

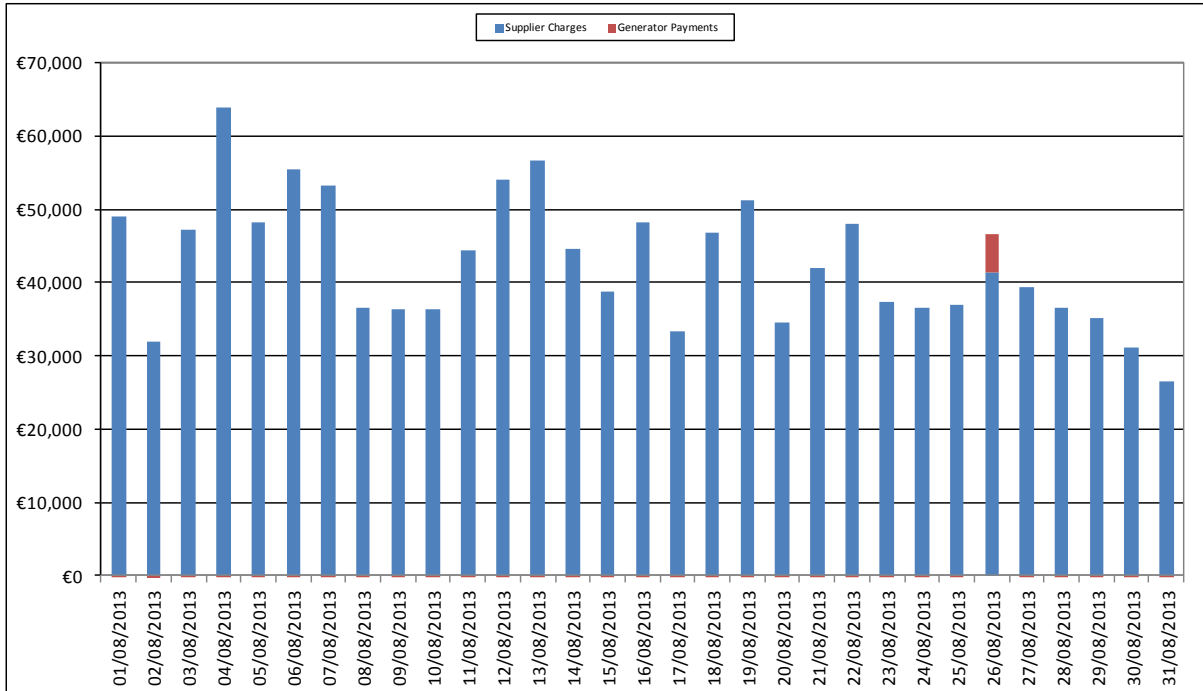
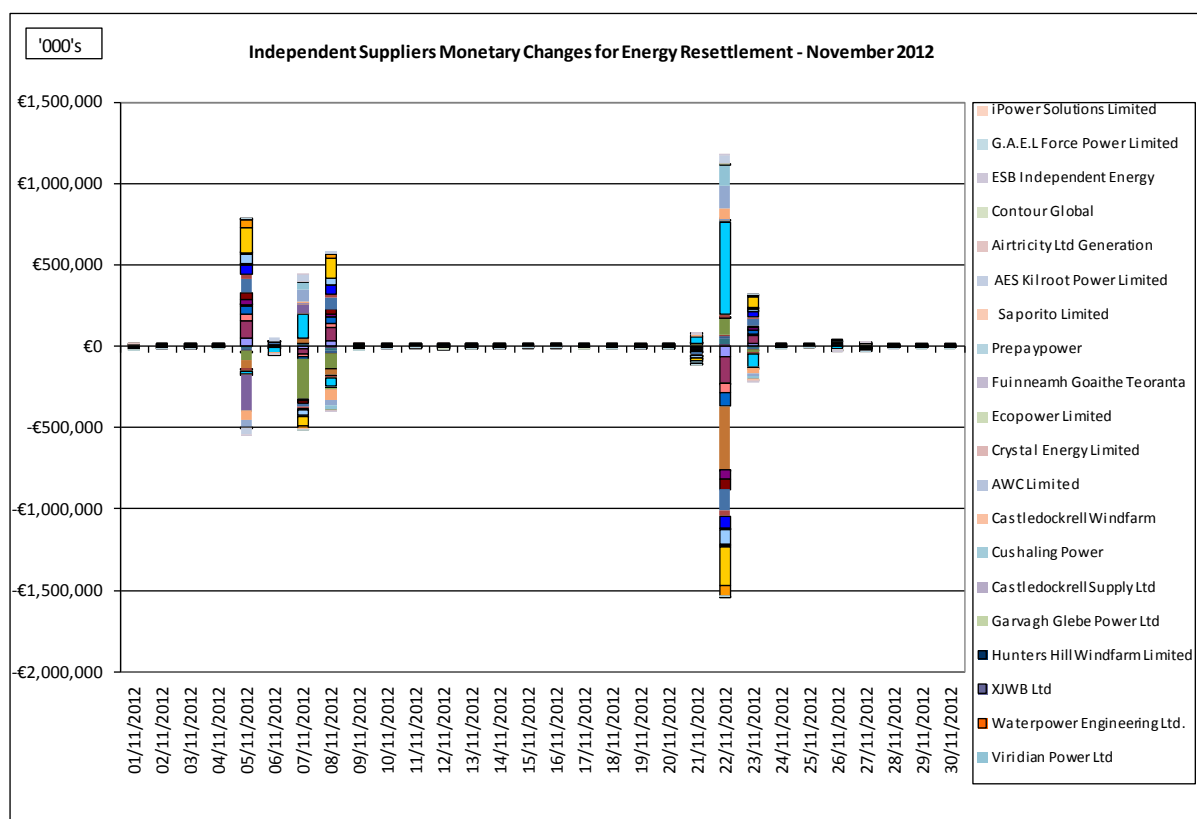


Figure 7 – Total Monetary Changes for Energy Resettlement – August 2013

## M+13 Resettlement



**Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – November 2012**

Changes noted above are driven by updates to Non-Price Effecting Metered Demand from the original Day +4 submissions and re-prices on Trade Dates 5<sup>th</sup>, 7<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup> November 2012.

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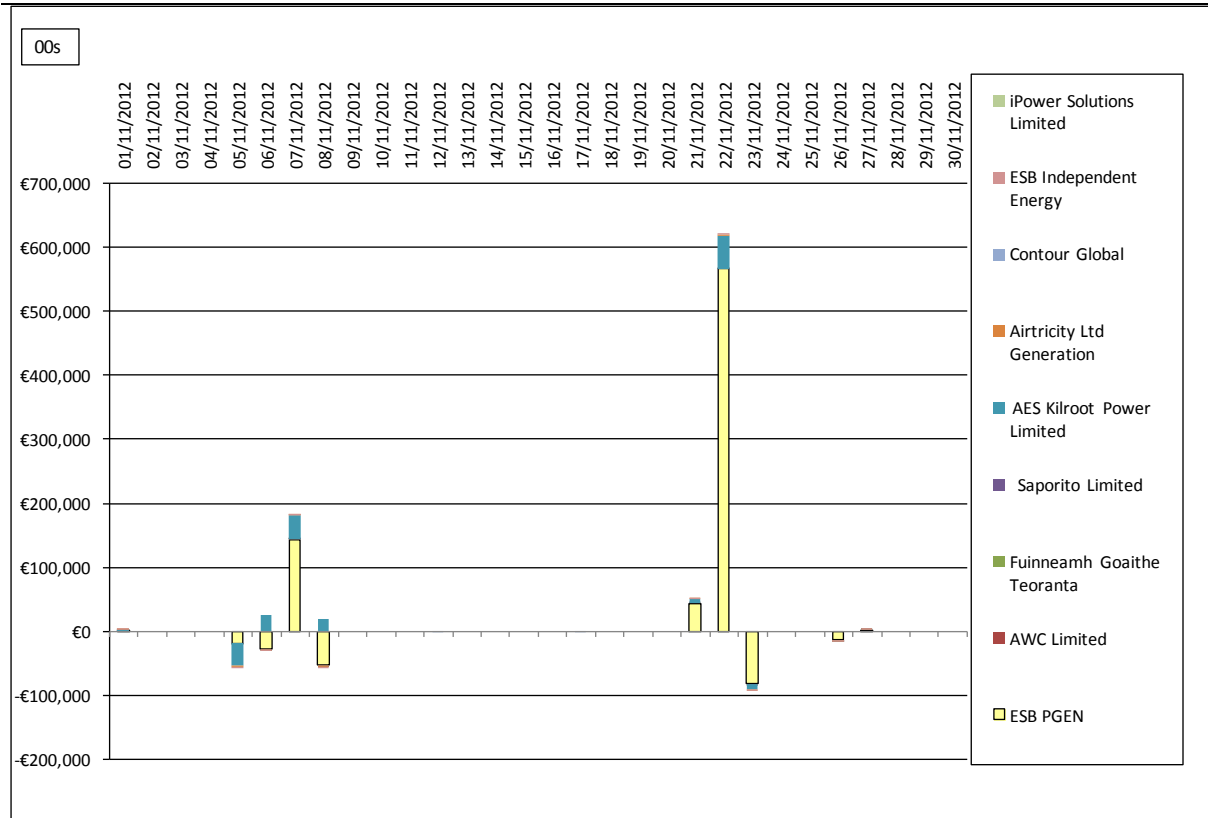


Figure 9 - Generation Monetary Changes for Energy Resettlement – November 2012

Changes noted above are due to re-prices on Trade Dates 5<sup>th</sup>, 7<sup>th</sup>, 21<sup>st</sup> and 22<sup>nd</sup> November 2012.

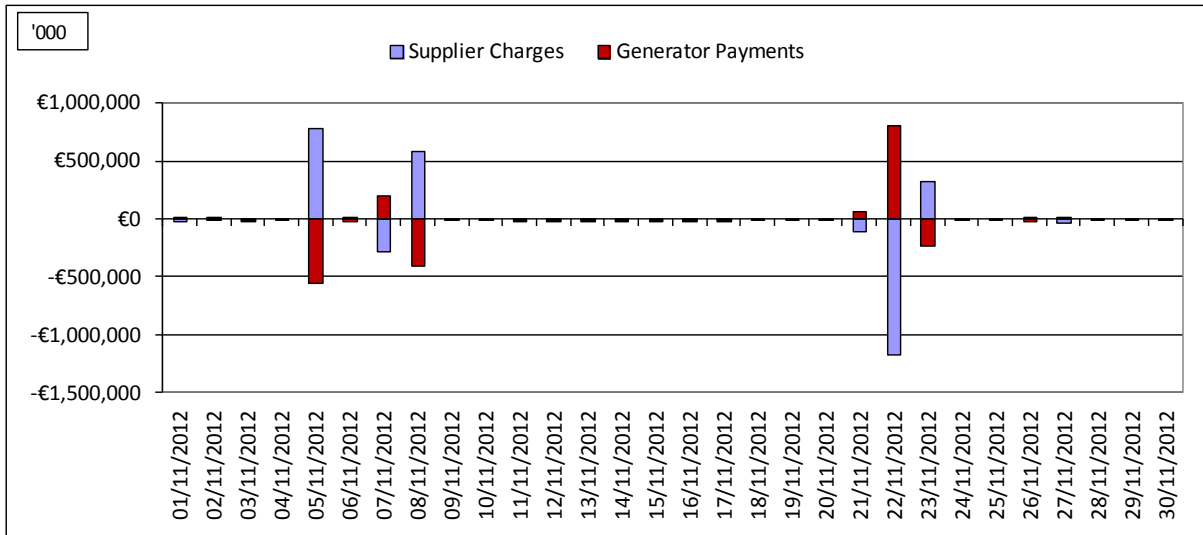


Figure 10 - Total Monetary Changes for Energy Resettlement – November 2012



### 3.6.2 Capacity Market

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

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

The reverse is true for Figure 14 & 22.

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

#### M+4 Resettlement

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

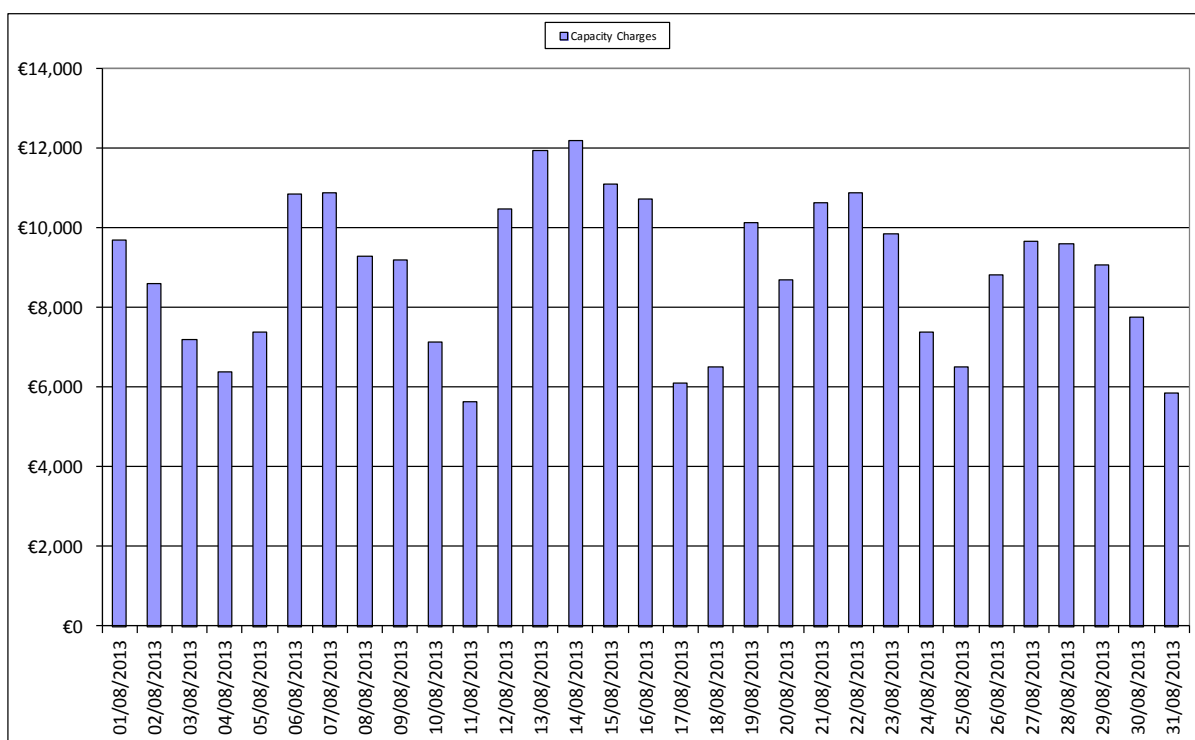


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – August 2013

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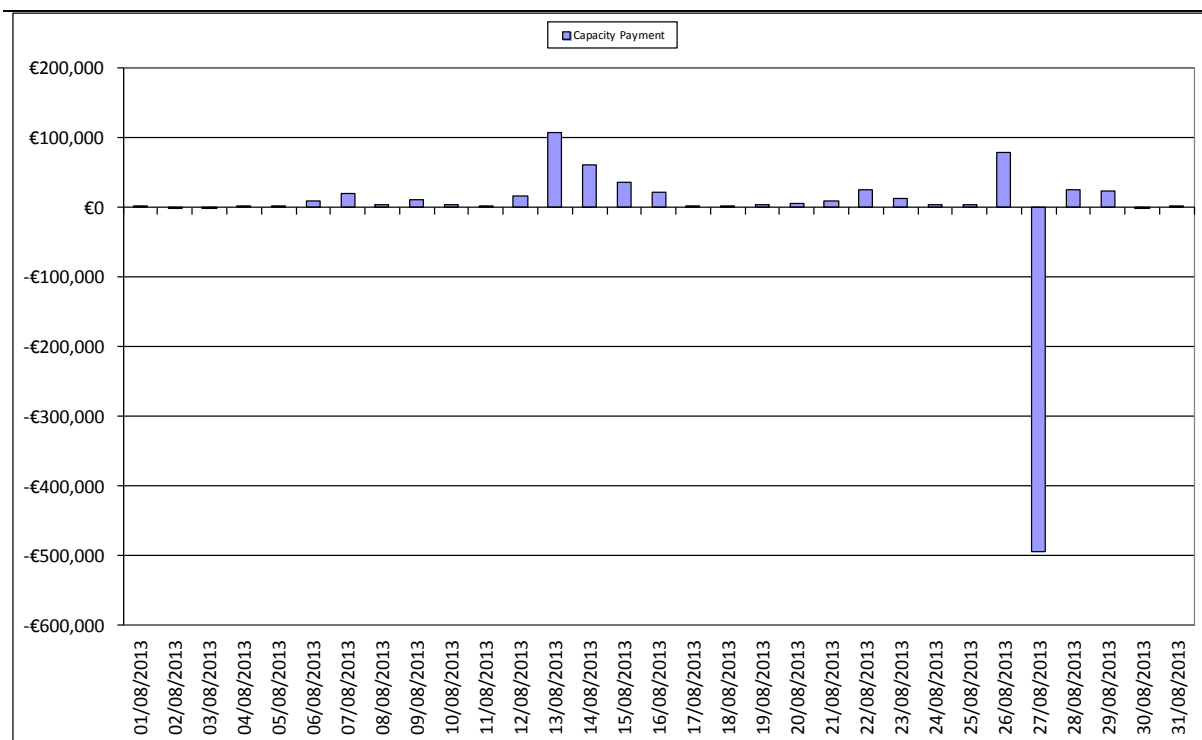


Figure 12 - All Generation Monetary Change for Capacity Resettlement – August 2013

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

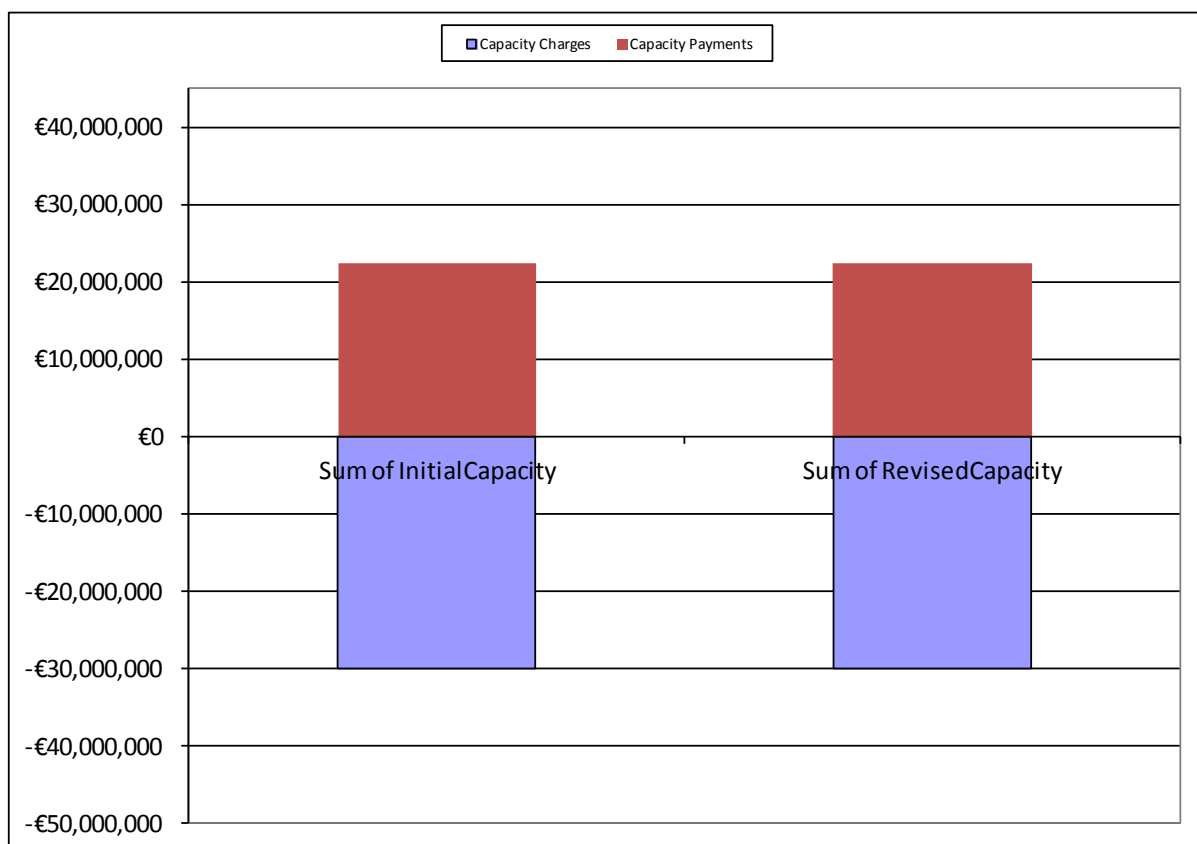


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement – August 2013

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

## M+13 Resettlement

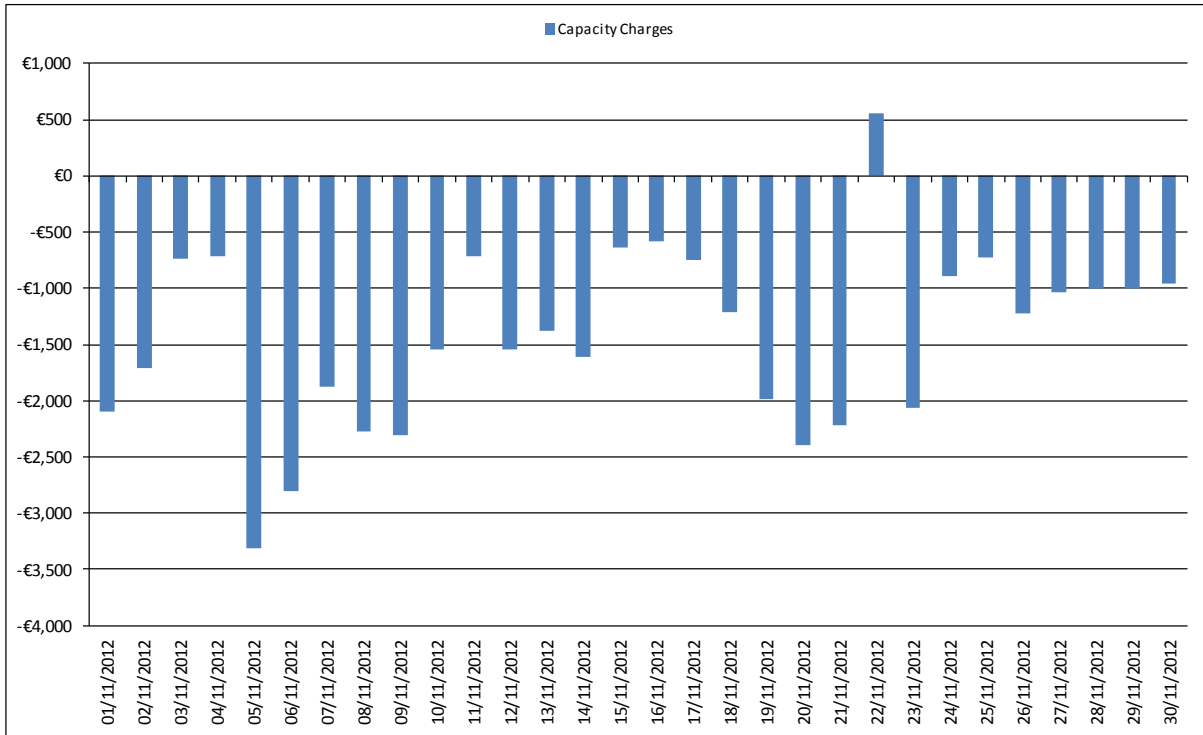


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – November 2012

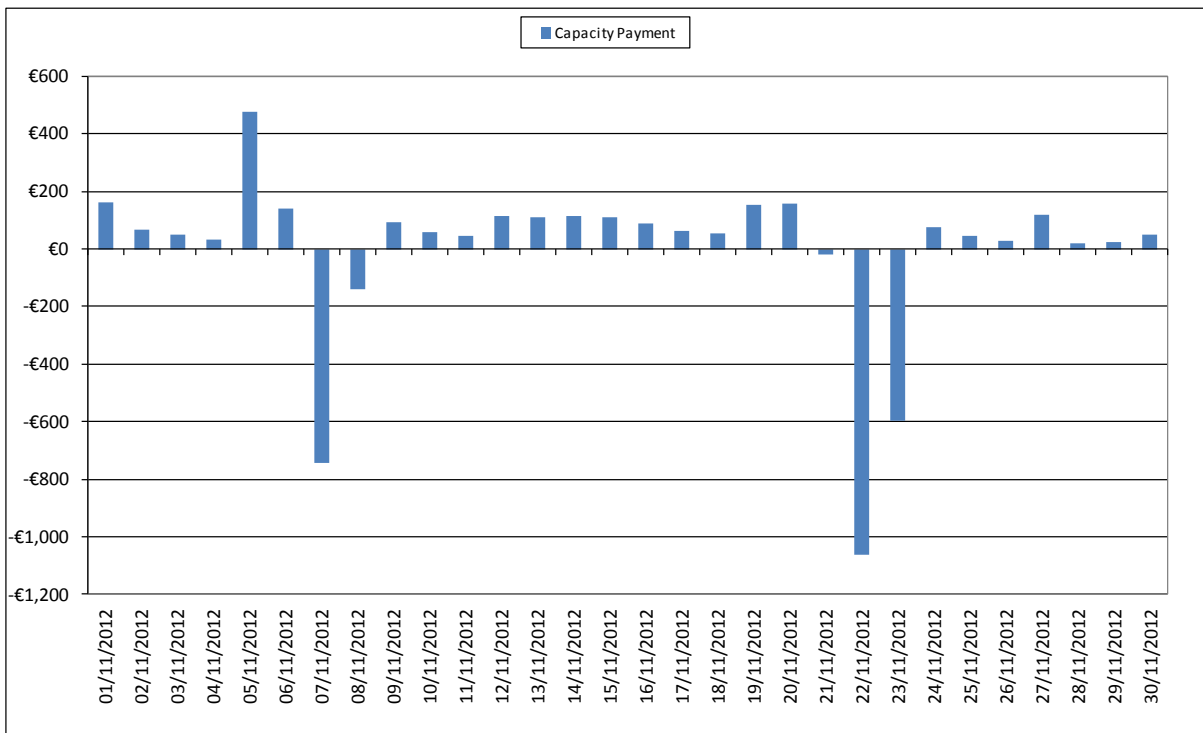


Figure 15 - All Generation Monetary Change for Capacity Resettlement – November 2012

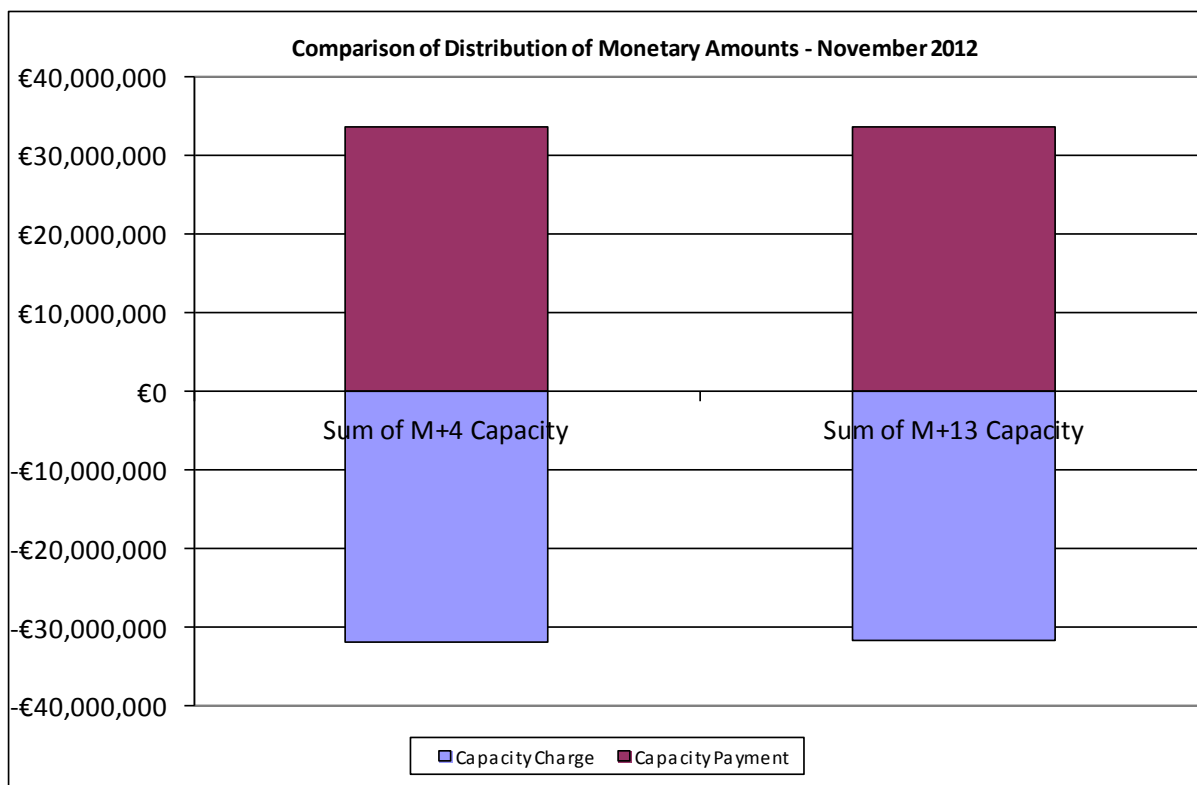


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – November 2012

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 December 2013.

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	162	152	10	176	2.13	161
Important	15	14	1	14	1.08	11
Urgent	2	2	0	2	0.16	2
Settlement	11	10	1	13	5.44	13
Credit	0	0	0	0	0.00	0
Dispute	1	0	1	0	0.00	0
Data	2	2	0	2	1.80	2
<b>Total/Average</b>	<b>193</b>	<b>180</b>	<b>13</b>	<b>207</b>	<b>2.12</b>	<b>189</b>

Table 10 – Helpdesk Statistics

### Definitions:

- *Resolved within the Period* refers to queries raised and resolved within the calendar month of December 2013.
- *Resolved in the Period* refers to queries resolved within December 2013, 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 December 2013.
- *Not Resolved* refers to queries raised but not resolved within December 2013.
- *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 mandated service level under the Trading & Settlement Code.
- *Disputes* are where a dispute has been raised over the outcome of a data or settlement query.

The average resolution time for General Queries has increased by 0.44 working days in December from 1.74 working days in November to 2.18 working days in December. SEMO has a metric to resolve General Queries within 20 Working Days. These include queries received over the phone and e-mail. As of January 9th, 4 queries in December 2013 took over 20 working days to resolve. No pending calls have been open longer than 20 working days.

Data and Settlement Queries generally continue to be responded to within the timelines required by the Code, i.e. one calendar month. No Formal Query timeline extensions were required during December 2013 with regard to formal Settlement Queries.

## 5 Disputes and Queries

### 5.1 List of Disputes by Topic

As of January 9<sup>th</sup> there are 16 outstanding Disputes.

Dispute	Raised	Resolved
F0053411 – F0053421	02-05-2013	Ongoing
F0053512 – F0053514	09-05-2013	Ongoing
F0053576 – F0053577	13-05-2013	Ongoing

Table 11 - List of Disputes

### 5.2 List of Queries by Topic

#### 5.2.1 Data Queries

Two Data Queries were raised in December 2013. Both were upheld. They were relating to incorrect Metered Generation provided by the TSO.

Topic	Number Of Queries
Metered Generation	2

Table 12 – Upheld Data Queries by topic

#### 5.2.2 Settlement Queries

There were Ten Settlement Queries raised in December 2013. Five (5) were upheld and four (4) were not upheld. There were three other unresolved queries as at 10<sup>th</sup> January 2014.

Topic	Number Of Queries
Meter Data	3
Availability	1
Metered Generation	1

Table 13 – Upheld Settlement Queries by topic

A detailed list of all Settlement Queries raised in November is contained in [Appendix B](#).

- Four queries relating to incorrect Availability data were upheld. They were all deemed to be of low materiality (<€50,000) and will be corrected during the next scheduled resettlement which is M+13.
- Three queries relating to incorrect Meter Data were raised. All three were upheld. Two were deemed to be of low materiality (<€50,000) and both will be settled at the next scheduled resettlement which is M+4. We carried out the verification of the variance, which falls above the Settlement Recalculation Threshold of 3% for the third query. This would allow us to carry out a re-price should a Dispute be raised on this query and agreed amicably.
- One query relating to Metered Generation was raised. This was upheld and was rectified ahead of initial invoicing.

### **5.3 Unresolved Queries**

There is one unresolved Data Query as at 10<sup>th</sup> January 2014.

There are two unresolved Settlement Queries as at 10<sup>th</sup> January 2014.

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, 76.28% of data used was submitted by Participants through the normal Bid-Offer process. 23.72% of the data used was based on Standing Commercial Offer Data. 0.00% 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***

##### **6.3.1 Re-Pricing and Resettlement Runs**

There were no Resettlement runs for December 2013

##### **6.3.2 System Errors**

There were no defect identified in December 2013 that required resettlement. There were no system defect identified in December 2013 that required re-pricing.

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



## Market Operator Monthly Report

### 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 December 2013.

#### 6.4.1 MSP Postings December 2013

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close EA	31-31	0-31	0-31	0
Post EA1	31-31	0-31	0-31	0
Post EA2	31-31	0-31	0-31	0
Post WD1	31-31	0-31	0-31	0
Post EP1	31-31	0-31	0-31	0
Post EP2	28-31	0-31	3-31	0

Table 14 - Operational Timings

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	100%	0%	0%	0%
Post EA1	100%	0%	0%	0%
Post EA2	100%	0%	0%	0%
Post WD1	100%	0%	0%	0%
Post EP1	100%	0%	0%	0%
Post EP2	90%	0%	10%	0%

Table 15 - Operational Timings (% on time)

# Market Operator Monthly Report

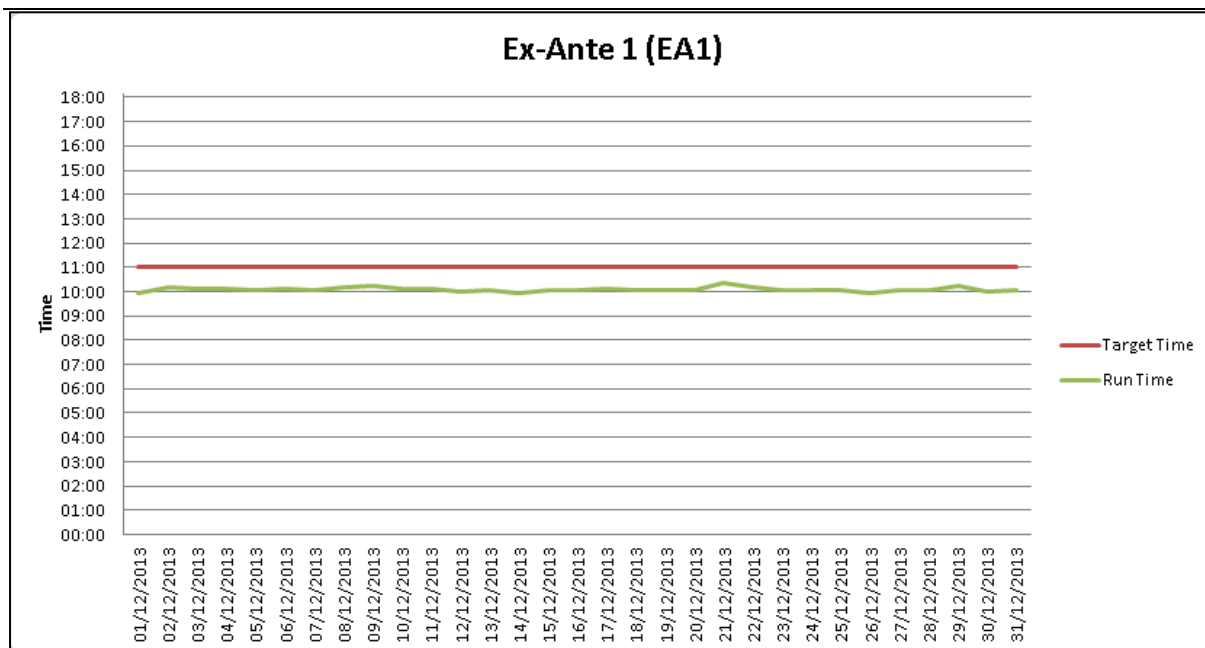


Figure 17 – Ex-Ante 1

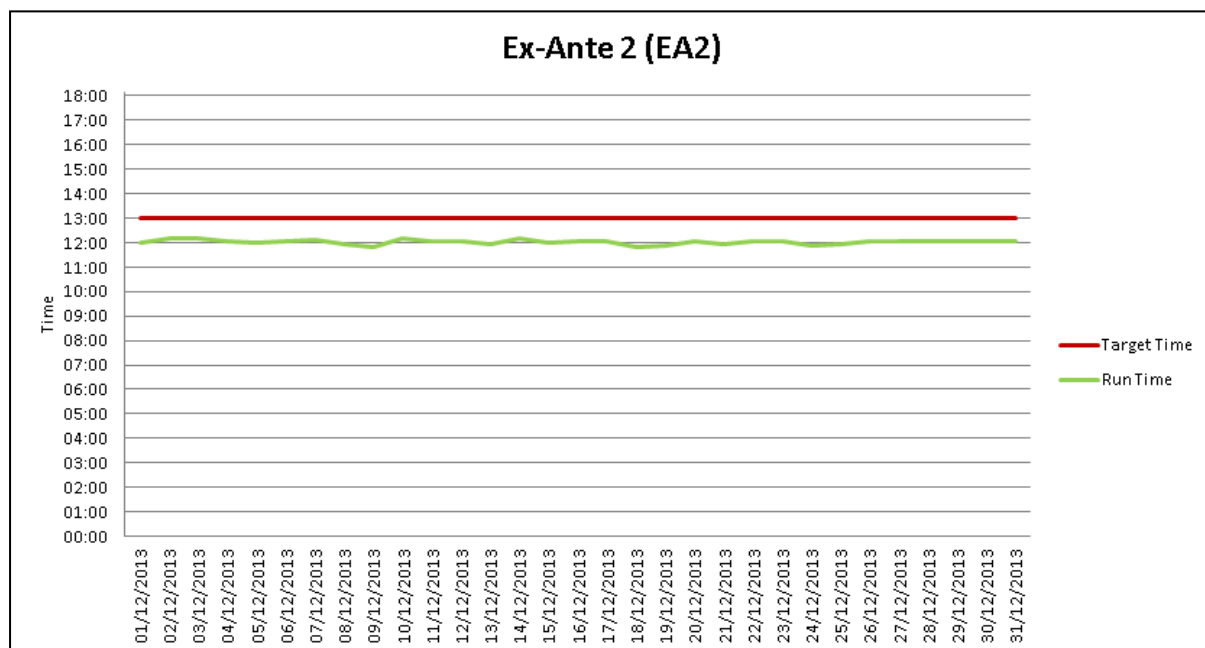


Figure 18 – Ex-Ante 2

# Market Operator Monthly Report

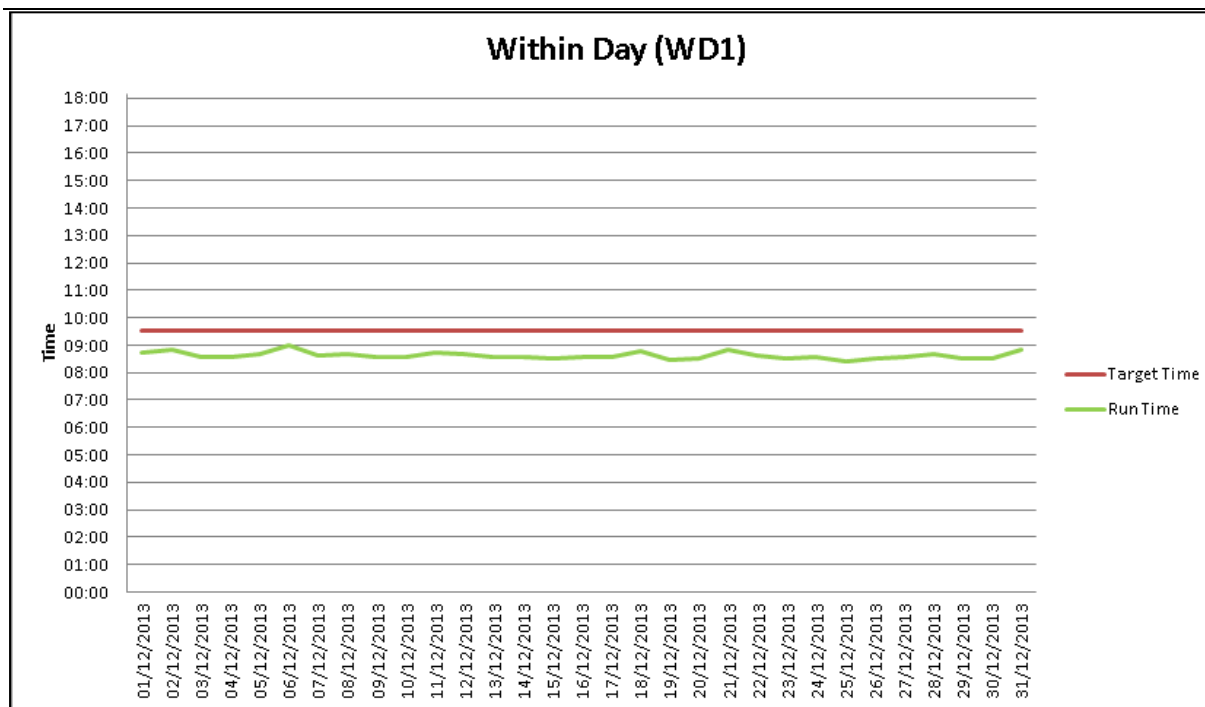


Figure 19 – Within Day 1

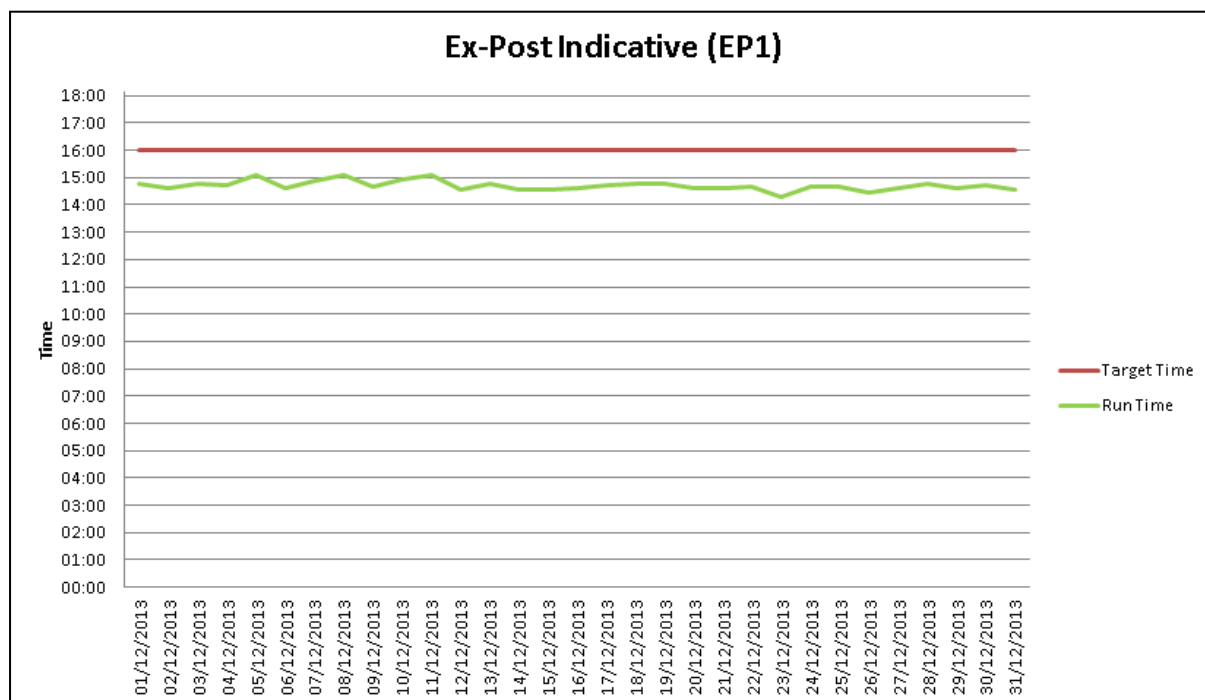
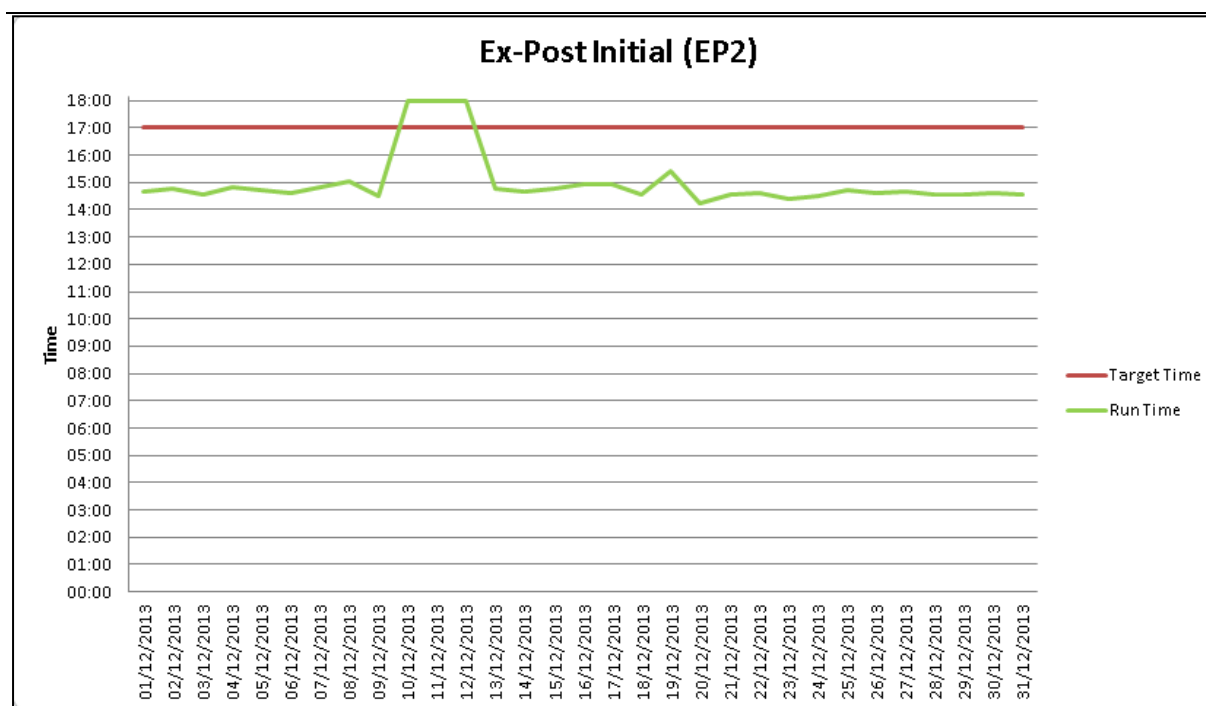


Figure 20 - Ex-Post Indicative

## Market Operator Monthly Report



Note that EP2 for Trading Days 10, 11 and 12 December 2013 were published on 17 December 2013 due to a defect in the MSP Software

**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 December 2013, there were 6 instances of publishing with the MIP solver.

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

6.4.3 Settlement Postings December 2013

The publication timings for Settlement runs are provided below.

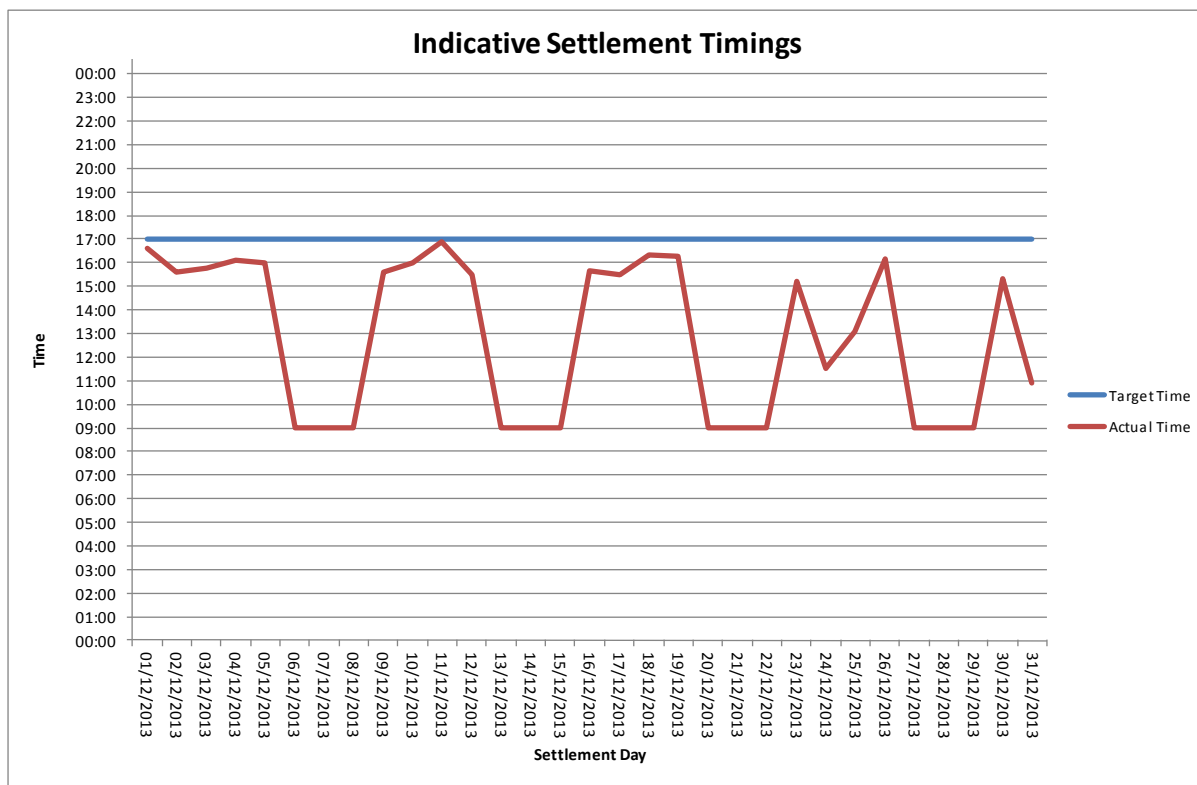


Figure 22 - Indicative Settlement Postings

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

## Market Operator Monthly Report

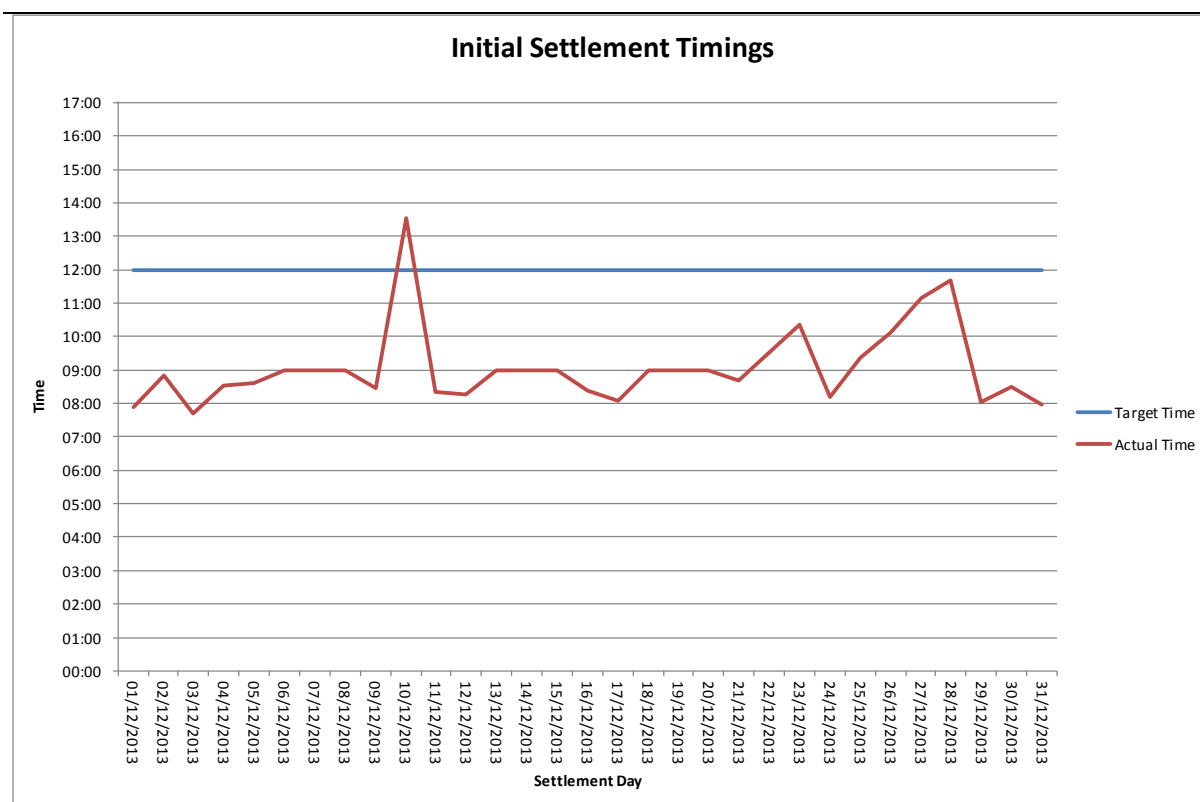


Figure 23 - Initial Settlement Postings

### 6.5 Market System Releases

#### 6.5.1 Release SEM R2.4.0 (Proposed Deployment: May 2014)

Regulatory approval was received for the proposed scope for the SEM R2.4.0 release on November 18<sup>th</sup> and the approved scope was published to the industry on November 20<sup>th</sup>.

The following table outlines the approved scope for the SEM R2.4.0 release to the Central Market Systems:

CR Ref.	System	Description
SEM_PC_CR271	MI	Automated FX download to the Central Market Systems
SEM_PC_CR320	MI	Dispatch Instruction Validation Change
SEM_PC_CR324	MI	Event Warning for DAM event
SEM_PC_CR292	MI	MDP dropdown in the MPI
SEM_PC_CR226	MI	Pop-up reminder for digital certificate renewal
SEM_PC_CR323	STL	Bad Debt Smearing Calculation
SEM_PC_CR309	STL	Tax File Import
SEM_PC_CR325	STL	Automated Data Imports
SEM_PC_CR326	STL	Historical Process Warnings

The Design phase is under way and is due for completion by January 17<sup>th</sup>.

Delivery of the software from our vendors is due on February 28<sup>th</sup>.

Preparations are underway for the System Integration Testing of the release which is scheduled to commence on March 3<sup>rd</sup>.

As the release will impact on interfaces between the Central Market Systems and Participant systems there will be a Market Test phase. The schedule for Market Test will be communicated in early February.

The deployment of the release will take place in mid May, subject to the successful completion of all testing. The specific date will be communicated in early February.

### **6.5.2 Release SEM R2.5.0 (Proposed Deployment: October 2014)**

The release cut-off date for the SEM R2.5.0 release to the Central Market Systems is:

**Friday, February 21<sup>st</sup>, 2014**

### **7 Occasional Components**

#### ***7.1 Disaster Recovery/Business Continuity Tests***

There was no Business Continuity Tests performed during December 2013.

#### ***7.2 Administered Settlement***

There was no requirement to run Administered Settlement during December 2013

#### ***7.3 Communications or Systems Failures***

There were a number of Market Interface system issues during December 2013;

An issue was identified accessing the SEMO public website for a number of participants – the problem was only seen for some participants in the Republic of Ireland. The issue was traced to a problem with the SEMO internet service providers network.

Market systems IT on-call was contacted with a SONI TSO submission issue – investigation did not show any problems in the CMS side. The problem however was traced to a change that was made on the SONI TSO system side – the change was reversed and the submissions worked.

The CMS monitoring system alerted to a problem with one of the Wide Area Links running between the Oval and SONI – a call logged with the vendor who addressed the issue. Root cause was faulty equipment on the vendors side.

There has been a number of functional issues seen in December when running the Instruction Profiler when units change type – this has been logged with the CMS vendor who have provided a workaround. A permanent fix will be part of the April 2014 release.

A time out error was seen by SONI TSO when submitting RCUC information – a call was logged with the CMS vendor who identified a defect, a workaround is now in place for both TSOs until the permanent fix is delivered as part of the R2.4.0 release.

#### ***7.4 Denial of Service Attacks***

There was no Denial of Service Attacks during December 2013.

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

A proposed value for the Annual Capacity Exchange Rate of 0.8363 was submitted to the Regulatory Authorities on December 4th. This was subsequently approved and published by the Regulatory Authorities .



## 8 Appendix A: Detail of Code Breaches

### 8.1 Market Participant

31/12/2013	Money In	Timing	Participant	Payment Default	PT_400090 (Activation Energy Ltd) defaulted on an August 2013 M+4 Capacity invoice.	Participant error	A Default Notice was issued to the participant	Major
10/12/2013	CRM	Timing	Participant	Operational	Waterpower Engineering (CP_400045) defaulted on a CCIN issued on 06/12/2013	CCIN was not resolved within the T&SC timeframes	Waterpower Engineering (CP_400045) paid outstanding invoices the next working day to close the CCIN	Major
09/12/2013	CRM	Timing	Participant	Operational	Prepay Power Ltd (CP_400080) defaulted on a CCIN issued on 05/12/2013	CCIN was not resolved within the T&SC timeframes	Prepay Power (CP_400080) paid outstanding invoices the next working day to close the CCIN	Major
04/12/2013	Money In	Timing	Participant	Payment Default	PT_400085 (Fuinneamh Gaoithe Teoranta) defaulted on a Week 44 2012 M+13 Energy invoice	Participant error	A Default Notice was issued to the participant	Major
04/12/2013	Money In	Timing	Participant	Payment Default	PT_400068 (Ecopower supply Limited) defaulted on a Week 30 2013 M+4 and Week 46 Initial Energy invoices	Participant error	A Default Notice was issued to the participant	Major

Table 16 - Code Breaches – Market Participants

### 8.2 Data Provider

23/12/2013	EA1	Timing	EirGrid TSO	File Submission	Eirgrid Wind Forecast was not submitted by 09:30 for Trade Date 24/12/2013	System issue which required re-start of Cape Clear	File was re-submitted at 09:38 and the Ex-Ante for Trade Date 24/12/2013 was published on time.	Minor
23/12/2013	EA1	Timing	EirGrid TSO	File Submission	Eirgrid load Forecast was not submitted by 09:30 for Trade Date 24/12/2013	System issue which required re-start of Cape Clear	File was re-submitted at 09:38 and the Ex-Ante for Trade Date 24/12/2013 was published on time.	Minor

Table 17 - Code Breaches – Data Provider

**8.3 SEMO - Pricing and Scheduling**

20/12/2013	EP2	Timing	SEMO	System	The Ex-Post Initial Market Schedule for Trading Day 16/12/2013 was delayed.	The issue was caused a registration change whereby a unit was switched from an APTG to VPTG at 06:00 on Trade Date 16/12/2013 in which MA did not handle correctly.	Vendor provided a script which was deployed on 21/12/2013. The Ex-Post Initial Market Schedule was published on the 21/12/2012.	Minor
16/12/2013	EP2	Timing	SEMO	System	The Ex-Post Initial Market Schedule for Trading Day 12/12/2013 was delayed.	The issue was caused by a registration change whereby a unit was switched from an APTG to VPTG at 06:00 on Trade Date 11/12/2013 in which MA did not handle correctly.	Vendor provided a script which was deployed on 17/12/2013. The Ex-Post Initial Market Schedule was published on the 17/12/2012.	Minor
15/12/2013	EP2	Timing	SEMO	System	The Ex-Post Initial Market Schedule for Trading Day 11/12/2013 was delayed.	The issue was caused by a registration change whereby a unit was switched from an APTG to VPTG at 06:00 on Trade Date 11/12/2013 in which MA did not handle correctly.	Vendor provided a script which was deployed on 17/12/2013. The Ex-Post Initial Market Schedule was published on the 17/12/2012.	Minor
14/12/2013	EP2	Timing	SEMO	System	The Ex-Post Initial Market Schedule for Trading Day 10/12/2013 was delayed.	The issue was caused by a registration change whereby a unit was switched from an APTG to VPTG at 06:00 on Trade Date 11/12/2013 in which MA did not handle correctly.	Vendor provided a script which was deployed on 17/12/2013. The Ex-Post Initial Market Schedule was published on the 17/12/2012.	Minor

**Table 18 - Code Breaches – Pricing and Scheduling**

## Market Operator Monthly Report

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### 8.4 SEMO – Settlements

17/12/2013	SE2	Timing	SEMO	System	Initial Energy and VMOC Statements and Participant Information Reports for Settlement Day 10/12/2013 were delayed.	The dependent Ex-Post Initial (EP2) Market Schedule for Trading Day 10/12/2013 was delayed.	Initial Energy and VMOC Statements and Participant Information Reports for Settlement Day 10/12/2013 were published at 14:00 on 17/12/2013.	Minor
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Table 19 - Code Breaches – Settlements

### 8.5 SEMO - Funds Transfer

There were no issues to report in December 2013

### 8.6 SEMO - Credit Management

There were no issues to report in December 2013

### 8.7 SEMO - Other

There were no issues to report in December 2013

9 Appendix B: List of Queries by Type

9.1 Data Queries

Summary Title	Description	Participant ID	Logged On	Date sent to MP
Meter Generation	For GU_400550 (Some Hill Windfarm Phase 1) SCADA was sent to the SEM in the METER D+1 file for the 28/11/2013, as we were unable to contact the meters. Due to issues with the DFI (system used to send meter files to SEM-O) a contingency METER D+1 and METER D+3 file were sent to SEM-O on Sunday the 1st of December 2013. The contingency METER D+1 file (for the 30/11/2013) contained meter readings for the 16/11/2013. The sending of the METER D+3 file (for the 30/11/2013) today corrected this issue in SEM systems. The contingency METER D+3 file (for the 28/11/2013) contained meter readings for the 14/11/2013. This incorrect meter data needs to be corrected by the resending of the METER D+3 file for the 28/11/2013.	GU_400550	2013-12-03	2013-12-06
Meter Generation	Problem with data in the Market Operator file. There appears to be errors in the data provided by the M.O. for 30th Nov 2013. For example, GU_400850 (AD2) received a dispatch instruction to go to 216mw exported on 28th Nov and the next dispatch instruction was received on 30th Nov at 10:15. There is no meter gen. data for this unit in the M.O. file. Also ER4 (GU_400221) has been off since 25th Nov but there is meter gen. in the file for this days, which is incorrect. I have not checked any other units.	PT_400030	2013-12-05	2013-12-06

Table 20 - Data Queries

**9.2 Settlement Queries**

Summary Title	Description	Participant ID	Logged On	Date sent to MP
Metered Generation	We received a large uninstructed imbalance charge for the 28th November for PT_400044. This seems to be because the market has published a MG of zero for several periods that day when the plant was dispatched. Our plant however says they ran that whole day and an MG of zero for any period is incorrect. Market saying 0 MG until 10 am on 28th. Our Plant saying MG the whole day. Market day total = 2832 Plane = 5046	PT_400044	2013-12-05	2013-12-06
Availability	Incorrect availabilities were sent to the SEM for GU_400430 (Coomagearlaghy Windfarm Phase 1) on the 01/08/2013.	GU_400430	2013-12-10	2013-12-17
Meter data	Units GU_400361 TH2 and GU_400363 TH4 missing dispatch instructions. Units GU400361 TH2 and GU_400363 TH4. Instructions issued in EDIL for both units to pump around midnight. These instructions have not been included in Market Operator's data, resulting in high Uninstructed Imbalances.	PT_400030	2013-12-12	2013-12-23
Meter data	GU_401240 (Dromdeeven Windfarm Phase 1) was on outage from the 09/12/2013 until the 13/12/2013 inclusive. The meters for Dromdeeven Windfarm Phase 1 are owned by ESB and so have no power supply while units are on outage, as a result EirGrid were unable to contact the meters for Dromdeeven Windfarm Phase 1 in time for the METER D+3 send to the SEM. As EirGrid were unable to obtain meter data, SCADA data was sent to the SEM for Dromdeeven Windfarm Phase 1 on the 09th and 10th of December 2013. As the outage is now complete meter data is now available for Dromdeeven Windfarm Phase 1 on the 09th and 10th of December 2013. See	PT_400030	2013-12-16	2013-12-19
Meter data	GU_400781 (Tawnaghmore Unit 3) was on outage from the 30/09/2013 until the 13/12/2013 inclusive. The meters for Tawnaghmore Unit 3 are owned by	PT_400030	2013-12-16	2013-12-19

**Market Operator Monthly Report**

	<p>ESB and so have no power supply while units are on outage, as a result EirGrid were unable to contact the meters for Tawnaghmore Unit 3 in time for the METER D+3 send to the SEM. As EirGrid were unable to obtain meter data SCADA and backstop data was sent to the SEM for Tawnaghmore Unit 3 from the 30th of September 2013 until the 10th of December 2013. As the outage is now complete meter data is now available for Tawnaghmore Unit 3 for the period of the 30th of September 2013 until the 10th of December 2013. The following dates have updated meter data available (as non zero values were sent D+3); 14/10/2013, 01/11/2013, 02/11/2013, 07/11/2013, 08/11/2013, 09/11/2013, 10/11/2013, 13/11/2013, 15/11/2013, 16/11/2013, 18/11/2013, 19/11/2013, 20/11/2013, 21/11/2013, 22/11/2013, 23/11/2013, 27/11/2013, 29/11/2013, 30/11/2013, 02/12/2013, 05/12/2013 &amp; 06/12/2013. For the other days in the period of the 30th of September 2013 until the 10th of December 2013 the meter data sent D+3 is unchanged. See</p>			
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**Table 21 - Settlement Queries**

## 10 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 months report will not appear in subsequent Monthly Market Operator Reports as they are no longer open issues.

Issue No.	Description	Effect	Fixed from	Re-Pricing	Resettlement	Status
-	There were no system defects identified in December 2013 that required repricing or resettlement	-	-	-	-	-

**Table 22 - List of System Errors and Failures**

## 11 Appendix D: Details of Operational Timings

### 11.1 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
01/12/2013	11:00	09:55:00	13:00	12:00	09:30	08:43	16:00	14:48	17:00	14:39
02/12/2013	11:00	10:10:00	13:00	12:09	09:30	08:50	16:00	14:38	17:00	14:47
03/12/2013	11:00	10:07:00	13:00	12:09	09:30	08:33	16:00	14:47	17:00	14:34
04/12/2013	11:00	10:06:00	13:00	12:04	09:30	08:34	16:00	14:42	17:00	14:50
05/12/2013	11:00	10:05:00	13:00	11:59	09:30	08:39	16:00	15:06	17:00	14:42
06/12/2013	11:00	10:06:00	13:00	12:03	09:30	08:59	16:00	14:38	17:00	14:38
07/12/2013	11:00	10:03:00	13:00	12:07	09:30	08:37	16:00	14:52	17:00	14:51
08/12/2013	11:00	10:09:00	13:00	11:56	09:30	08:42	16:00	15:06	17:00	15:02
09/12/2013	11:00	10:15:00	13:00	11:51	09:30	08:34	16:00	14:41	17:00	14:31
10/12/2013	11:00	10:07:00	13:00	12:12	09:30	08:33	16:00	14:55	17:00	<b>12:07</b>
11/12/2013	11:00	10:08:00	13:00	12:03	09:30	08:44	16:00	15:06	17:00	<b>12:46</b>
12/12/2013	11:00	09:59:00	13:00	12:02	09:30	08:39	16:00	14:35	17:00	<b>13:08</b>
13/12/2013	11:00	10:02:00	13:00	11:58	09:30	08:33	16:00	14:48	17:00	14:48
14/12/2013	11:00	09:56:00	13:00	12:11	09:30	08:34	16:00	14:34	17:00	14:39
15/12/2013	11:00	10:02:00	13:00	12:01	09:30	08:32	16:00	14:34	17:00	14:45
16/12/2013	11:00	10:05:00	13:00	12:04	09:30	08:34	16:00	14:37	17:00	14:55
17/12/2013	11:00	10:06:00	13:00	12:03	09:30	08:34	16:00	14:42	17:00	14:55
18/12/2013	11:00	10:04:00	13:00	11:51	09:30	08:47	16:00	14:48	17:00	14:35
19/12/2013	11:00	10:04:00	13:00	11:54	09:30	08:27	16:00	14:46	17:00	15:25
20/12/2013	11:00	10:02:00	13:00	12:02	09:30	08:32	16:00	14:38	17:00	14:14
21/12/2013	11:00	10:22:00	13:00	11:55	09:30	08:49	16:00	14:37	17:00	14:34
22/12/2013	11:00	10:11:00	13:00	12:05	09:30	08:36	16:00	14:39	17:00	14:37
23/12/2013	11:00	10:03:00	13:00	12:03	09:30	08:31	16:00	14:18	17:00	14:25
24/12/2013	11:00	10:04:00	13:00	11:53	09:30	08:34	16:00	14:39	17:00	14:32
25/12/2013	11:00	10:04:00	13:00	11:55	09:30	08:24	16:00	14:40	17:00	14:43
26/12/2013	11:00	09:57:00	13:00	12:04	09:30	08:32	16:00	14:28	17:00	14:36
27/12/2013	11:00	10:04:00	13:00	12:03	09:30	08:33	16:00	14:38	17:00	14:41
28/12/2013	11:00	10:02:00	13:00	12:02	09:30	08:39	16:00	14:46	17:00	14:33
29/12/2013	11:00	10:13:00	13:00	12:05	09:30	08:32	16:00	14:37	17:00	14:33
30/12/2013	11:00	10:01:00	13:00	12:02	09:30	08:32	16:00	14:42	17:00	14:37
31/12/2013	11:00	10:02:00	13:00	12:05	09:30	08:50	16:00	14:35	17:00	14:34

Note that EP2 for Trading Days 10, 11 and 12 December 2013 were published on 17 December 2013 due to a defect in the MSP Software

**Table 23 – MSP Runs**



## Market Operator Monthly Report

### 11.2 Settlement Runs

Trading Day	INDICATIVE				INITIAL			
	Target Date	Actual Date	Target Time	Actual Time	Trading Day	Actual Date	Target Time	Actual Time
01/12/2013	02/12/2013	02/12/2013	17:00	16:37	01/12/2013	06/12/2013	12:00	07:53
02/12/2013	03/12/2013	03/12/2013	17:00	15:36	02/12/2013	09/12/2013	12:00	08:50
03/12/2013	04/12/2013	04/12/2013	17:00	15:46	03/12/2013	10/12/2013	12:00	07:41
04/12/2013	05/12/2013	05/12/2013	17:00	16:06	04/12/2013	11/12/2013	12:00	08:32
05/12/2013	06/12/2013	06/12/2013	17:00	16:00	05/12/2013	12/12/2013	12:00	08:36
06/12/2013	09/12/2013	09/12/2013	17:00	12:02	06/12/2013	13/12/2013	12:00	11:44
07/12/2013	09/12/2013	09/12/2013	17:00	13:55	07/12/2013	13/12/2013	12:00	13:20
08/12/2013	09/12/2013	09/12/2013	17:00	16:16	08/12/2013	13/12/2013	12:00	08:13
09/12/2013	10/12/2013	10/12/2013	17:00	15:36	09/12/2013	16/12/2013	12:00	08:27
10/12/2013	11/12/2013	11/12/2013	17:00	15:59	10/12/2013	17/12/2013	12:00	13:33
11/12/2013	12/12/2013	12/12/2013	17:00	16:52	11/12/2013	18/12/2013	12:00	08:21
12/12/2013	13/12/2013	13/12/2013	17:00	15:28	12/12/2013	19/12/2013	12:00	08:16
13/12/2013	16/12/2013	16/12/2013	17:00	11:13	13/12/2013	20/12/2013	12:00	11:19
14/12/2013	16/12/2013	16/12/2013	17:00	12:14	14/12/2013	20/12/2013	12:00	12:03
15/12/2013	16/12/2013	16/12/2013	17:00	15:51	15/12/2013	20/12/2013	12:00	08:05
16/12/2013	17/12/2013	17/12/2013	17:00	15:40	16/12/2013	23/12/2013	12:00	08:22
17/12/2013	18/12/2013	18/12/2013	17:00	15:30	17/12/2013	24/12/2013	12:00	08:05
18/12/2013	19/12/2013	19/12/2013	17:00	16:21	18/12/2013	27/12/2013	12:00	09:30
19/12/2013	20/12/2013	20/12/2013	17:00	16:15	19/12/2013	27/12/2013	12:00	09:49
20/12/2013	23/12/2013	23/12/2013	17:00	10:58	20/12/2013	27/12/2013	12:00	11:22
21/12/2013	23/12/2013	23/12/2013	17:00	11:49	21/12/2013	30/12/2013	12:00	08:40
22/12/2013	23/12/2013	23/12/2013	17:00	15:54	22/12/2013	30/12/2013	12:00	09:32
23/12/2013	24/12/2013	24/12/2013	17:00	15:12	23/12/2013	30/12/2013	12:00	10:22
24/12/2013	27/12/2013	27/12/2013	17:00	11:30	24/12/2013	31/12/2013	12:00	08:11
25/12/2013	27/12/2013	27/12/2013	17:00	13:04	25/12/2013	02/01/2014	12:00	09:22
26/12/2013	27/12/2013	27/12/2013	17:00	16:08	26/12/2013	02/01/2014	12:00	10:08
27/12/2013	30/12/2013	30/12/2013	17:00	11:44	27/12/2013	03/01/2014	12:00	11:08
28/12/2013	30/12/2013	30/12/2013	17:00	12:18	28/12/2013	03/01/2014	12:00	11:42
29/12/2013	30/12/2013	30/12/2013	17:00	15:34	29/12/2013	03/01/2014	12:00	08:03
30/12/2013	31/12/2013	31/12/2013	17:00	15:19	30/12/2013	06/01/2014	12:00	08:29
31/12/2013	02/01/2014	02/01/2014	17:00	10:54	31/12/2013	07/01/2014	12:00	07:58

Table 24 - Settlement Runs

## 12 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	Constraints Payments	Uninstructed Imbalances Payments	Imperfections Charges
01/12/2013	€618,471.76	€23,574.73	-€394,819.18
02/12/2013	€546,705.86	-€8,213.20	-€445,698.59
03/12/2013	€520,428.19	-€34,850.50	-€446,981.35
04/12/2013	€476,830.74	-€8,079.64	-€448,632.10
05/12/2013	€654,345.84	-€21,873.44	-€443,571.84
06/12/2013	€487,800.20	-€26,507.17	-€452,257.40
07/12/2013	€552,357.45	€5,183.57	-€401,573.76
08/12/2013	€620,100.37	€44,256.07	-€369,246.04
09/12/2013	€605,289.43	€13,555.24	-€423,544.71
10/12/2013	€742,305.67	-€4,541.48	-€424,295.61
11/12/2013	€566,250.74	-€3,722.55	-€424,419.87
12/12/2013	€772,650.68	-€4,282.01	-€425,277.09
13/12/2013	€705,630.01	-€7,229.25	-€414,614.20
14/12/2013	€684,222.58	-€22,742.61	-€388,742.30
15/12/2013	€887,198.82	-€20,784.17	-€373,031.49
16/12/2013	€717,131.48	€17,785.34	-€440,318.22
17/12/2013	€678,740.45	-€802.86	-€443,361.42
18/12/2013	€810,749.28	-€10,256.99	-€439,097.85
19/12/2013	€875,292.36	-€38,372.26	-€452,135.42
20/12/2013	€948,060.75	-€10,777.07	-€430,223.18
21/12/2013	€911,709.62	€51,326.45	-€392,310.44
22/12/2013	€909,245.99	-€10,986.77	-€383,873.42
23/12/2013	€960,724.12	€63,540.93	-€401,360.93
24/12/2013	€871,098.83	-€13,768.19	-€393,628.36
25/12/2013	€771,723.02	-€15,727.80	-€366,274.40
26/12/2013	€968,349.43	-€4,529.01	-€353,447.63
27/12/2013	€1,123,251.03	€9,818.15	-€372,497.20
28/12/2013	€721,883.85	€46,245.14	-€384,462.93
29/12/2013	€786,251.99	-€4,376.74	-€369,628.21
30/12/2013	€992,253.06	-€39,586.43	-€398,313.56
31/12/2013	€998,884.77	€12,844.84	-€387,846.06

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

## Market Operator Monthly Report

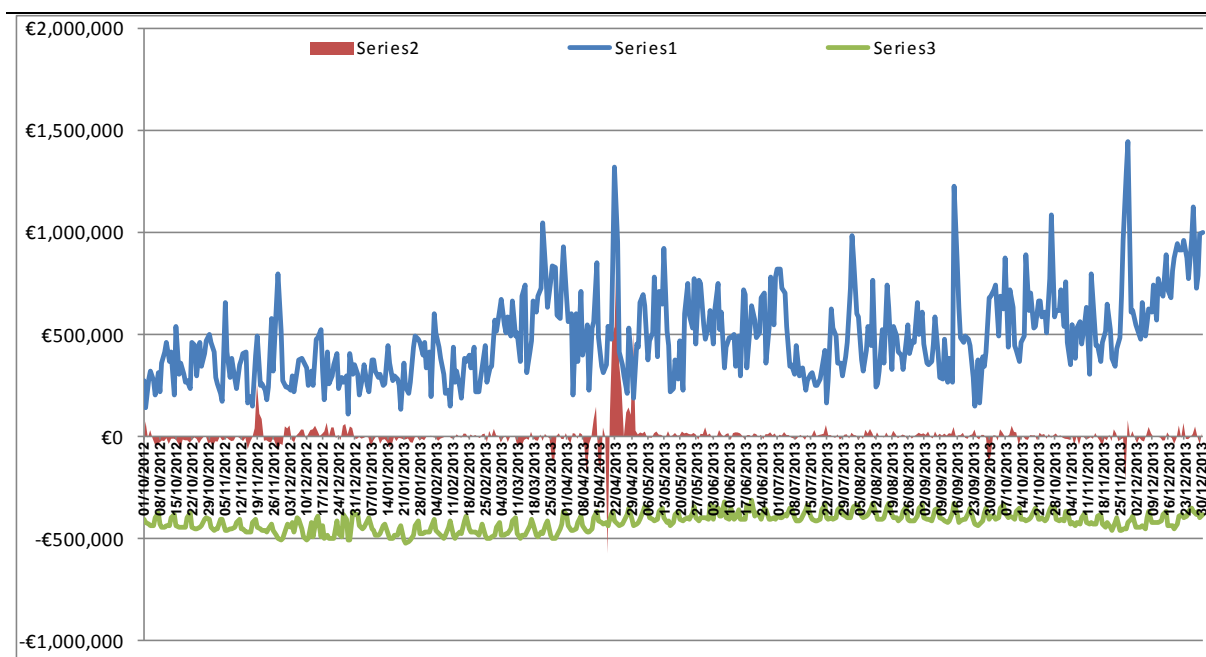


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
39	€0.11
40	€32,465.05
41	€0.00
42	€0.00
43	€0.04
44	€5.72
45	€0.00
46	€0.05
47	€0.00
48	€0.00
49	€0.00
50	€0.35
51	€0.21
52	€0.24
1	€0.24
2	€0.21
3	€0.21
4	€0.24
5	€0.24
6	€0.21
7	€8,938.29
8	€0.09
9	€23.23
10	€0.00
11	€23.23
12	€52,182.82
13	€0.00
14	€71,642.27
15	€73,481.00

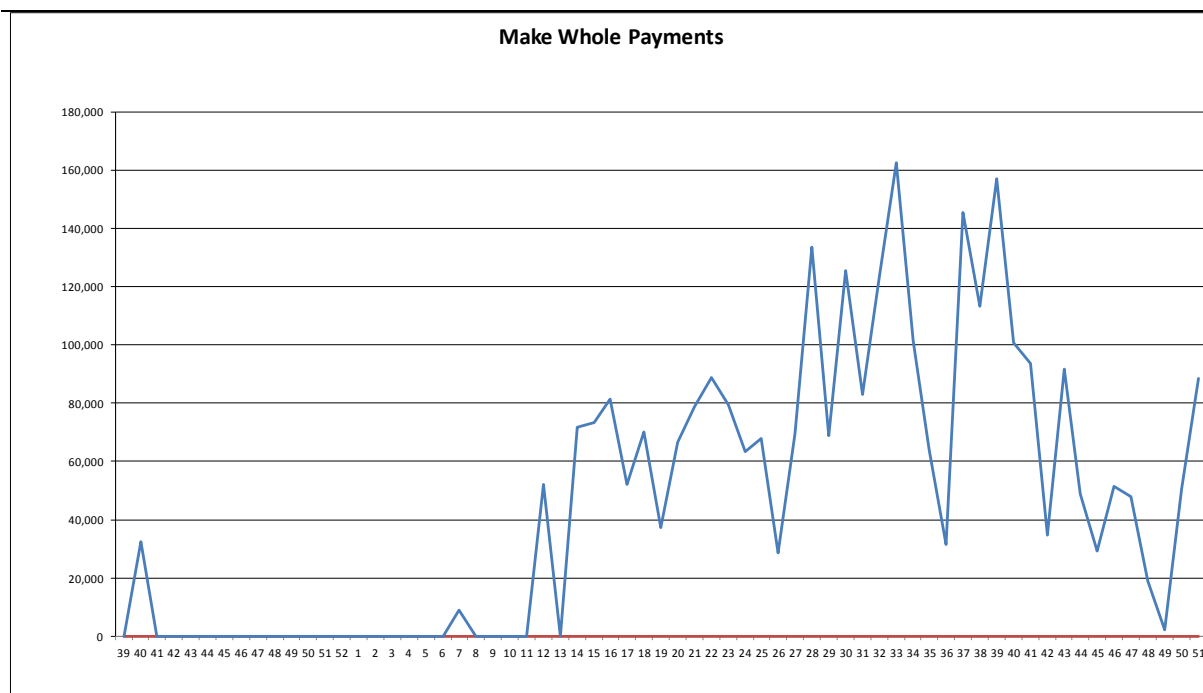
## Market Operator Monthly Report

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16	€81,292.53
17	€52,199.40
18	€70,072.32
19	€37,414.41
20	€66,483.30
21	€78,719.65
22	€88,898.98
23	€79,581.12
24	€63,206.12
25	€67,963.43
26	€28,516.84
27	€69,438.67
28	€133,461.73
29	€68,797.92
30	€125,522.82
31	€83,131.52
32	€123,570.97
33	€162,448.85
34	€101,313.36
35	€63,915.90
36	€31,502.25
37	€145,370.36
38	€113,232.85
39	€157,154.18
40	€100,559.86
41	€93,700.82
42	€34,755.70
43	€91,699.33
44	€48,763.34
45	€29,311.13
46	€51,580.95
47	€47,924.57
48	€18,836.02
49	€2,320.81
50	€50,370.62
51	€88,625.27

**Table 26 - Make Whole Payments**

# Market Operator Monthly Report



**Figure 25 - Make Whole Payments**

Week No	Testing Charges
39	-€24,767.27
40	-€37,940.16
41	-€74,369.80
42	-€22,197.43
43	-€41,005.58
44	-€47,075.17
45	-€39,222.31
46	-€73,973.28
47	€0.00
48	€0.00
49	€0.00
50	€0.00
51	€0.00
52	€0.00
1	€0.00
2	€0.00
3	€0.00
4	€0.00
5	€0.00
6	€0.00
7	€0.00
8	€0.00
9	€0.00
10	€0.00
11	€0.00
12	€28,917.83
13	€0.00
14	€0.00

## Market Operator Monthly Report

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15	€0.00
16	€0.00
17	€0.00
18	€0.00
19	€0.00
20	-€405,577.14
21	€0.00
22	€0.00
23	€0.00
24	€0.00
25	€0.00
26	€0.00
27	€0.00
28	€0.00
29	-€7,265.83
30	€0.00
31	€0.00
32	€0.00
33	-€2,378.90
34	€0.00
35	€0.00
36	-€12,436.63
37	€0.00
38	€0.00
39	€0.00
40	€0.00
41	€0.00
42	€0.00
43	€0.00
44	-€464.74
45	-€4,169.12
46	-€4,361.08
47	-€13,358.69
48	€0.00
49	-€983.42
50	€0.00
51	€0.00

**Table 27 - Testing Charges**

# Market Operator Monthly Report

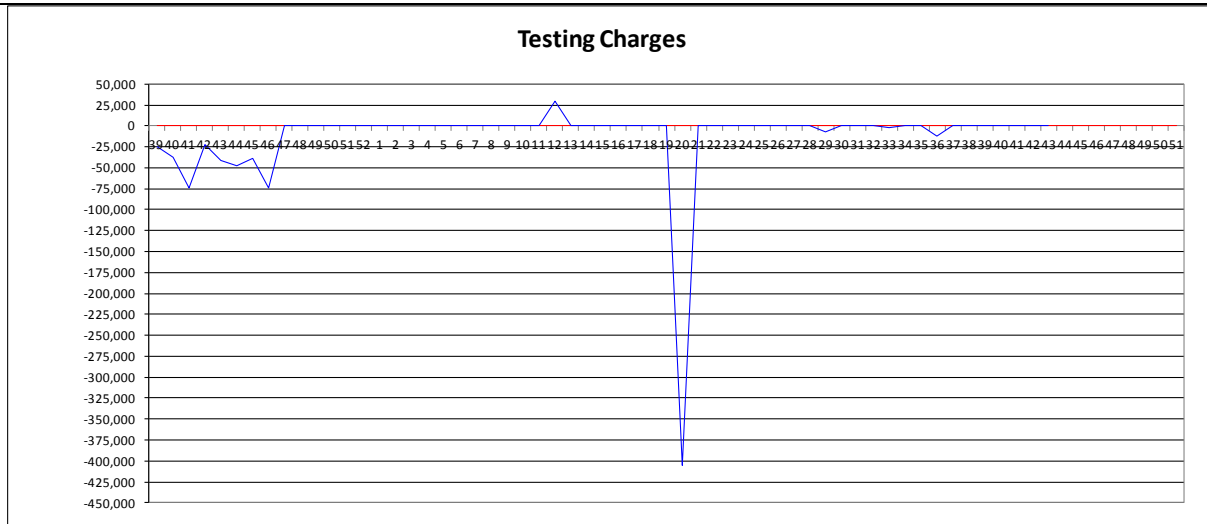


Figure 26 - Testing Charges

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

The table below lists for each unit the number of times in operations during December 2013 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	Standing	COUNT
PT_400090	DSU_401270		7	7
PT_400116	DSU_401400	15		15
PT_400090	DSU_401270	29		29
PT_400101	DSU_401300	31		31
PT_400024	GU_400120	31		31
PT_400024	GU_400121	31		31
PT_400026	GU_400140	31		31
PT_400030	GU_400180	37		37
PT_400030	GU_400181	37		37
PT_400030	GU_400182	37		37
PT_400030	GU_400183	37		37
PT_400030	GU_400200	38		38
PT_400030	GU_400201	38		38
PT_400030	GU_400202	36		36
PT_400030	GU_400203	38		38
PT_400030	GU_400210	36		36
PT_400030	GU_400211	36		36
PT_400030	GU_400220	32		32
PT_400030	GU_400221	36		36
PT_400030	GU_400240	36		36
PT_400030	GU_400250	36		36
PT_400030	GU_400251	36		36
PT_400030	GU_400252	36		36
PT_400030	GU_400260	36		36
PT_400030	GU_400270	36		36
PT_400030	GU_400271	36		36
PT_400030	GU_400272	36		36
PT_400030	GU_400280	36		36
PT_400030	GU_400281	36		36
PT_400030	GU_400290	36		36
PT_400030	GU_400300	37		37
PT_400030	GU_400311	37		37
PT_400030	GU_400323	37		37
PT_400030	GU_400360	36		36
PT_400030	GU_400361	36		36
PT_400030	GU_400362	36		36
PT_400030	GU_400363	36		36
PT_400030	GU_400370	36		36
PT_400030	GU_400850	37		37
PT_400032	GU_400380	30		30
PT_400032	GU_400430	30		30
PT_400034	GU_400940	30		30
PT_400034	GU_401090	30		30
PT_400034	GU_401440	30		30
PT_400035	GU_400480	49		49
PT_400037	GU_400500	31		31



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PT_400041	GU_400530	49		49
PT_400044	GU_400540	49		49
PT_400050	GU_400650	21		21
PT_400055	GU_400630	30		30
PT_400064	GU_400750	31		31
PT_400064	GU_400751	31		31
PT_400064	GU_400752	31		31
PT_400064	GU_400753	31		31
PT_400064	GU_400754	31		31
PT_400064	GU_400760	31		31
PT_400064	GU_400761	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	65		65
PT_400077	GU_400950	30		30
PT_400078	GU_401010	31		31
PT_400078	GU_401011	31		31
PT_400087	GU_401230	5		5
PT_500024	GU_500040	34		34
PT_500024	GU_500041	29		29
PT_500027	GU_500130	81		81
PT_500027	GU_500131	81		81
PT_500027	GU_500140	81		81
PT_500040	GU_500280	32		32
PT_500040	GU_500281	32		32
PT_500040	GU_500282	32		32
PT_500040	GU_500283	32		32
PT_500040	GU_500284	32		32
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_500901	46		46
PT_500048	GU_500902	46		46
PT_500048	GU_500903	46		46
PT_500050	GU_501150	30		30
PT_500050	GU_501190	30		30
PT_500053	GU_501130	31		31
PT_500066	GU_501210	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

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PT_400021	GU_401080		31	31
PT_400025	GU_400130		31	31
PT_400030	GU_400220		3	3
PT_400030	GU_400310		31	31
PT_400032	GU_400380		1	1
PT_400032	GU_400430		1	1
PT_400034	GU_400940		1	1
PT_400034	GU_401090		1	1
PT_400034	GU_401440		1	1
PT_400038	GU_400550		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_400055	GU_400630		1	1
PT_400062	GU_400730		31	31
PT_400062	GU_400731		31	31
PT_400062	GU_400840		31	31
PT_400066	GU_401320		31	31
PT_400066	GU_401430		31	31
PT_400077	GU_400950		1	1
PT_400082	GU_401100		31	31
PT_400087	GU_401230		26	26
PT_500021	GU_500010		31	31
PT_500021	GU_500740		31	31
PT_500021	GU_501160		31	31
PT_500024	GU_500041		2	2
PT_500032	GU_500211		31	31
PT_500032	GU_501120		31	31
PT_500039	GU_500270		31	31
PT_500044	GU_500720		31	31
PT_500047	GU_500790		31	31
PT_500050	GU_501150		1	1
PT_500050	GU_501190		1	1
PT_500061	GU_501170		31	31
PT_500062	GU_501180		31	31
PT_500066	GU_501210		1	1
PT_400021	I_ROIEWIC	31		31
PT_500021	I_NIMOYLE	31		31
PT_500024	I_NIMOYLE	31		31
PT_500069	I_NIMOYLE	90		90
PT_500031	I_NIMOYLE	31		31
PT_500058	I_NIMOYLE	30		30
PT_500037	I_NIMOYLE	31		31
PT_400113	I_ROIEWIC	30		30
PT_400096	I_ROIEWIC	62		62
PT_400115	I_ROIEWIC	31		31
PT_400108	I_ROIEWIC	26		26
PT_500070	I_NIMOYLE	34		34
PT_400030	I_ROIEWIC	31		31

## Market Operator Monthly Report

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PT_400099	I_ROIEWIC	31		31
	<b>Total</b>	<b>3643</b>	<b>1133</b>	<b>4776</b>
	<b>Percentage</b>	<b>76.28%</b>	<b>23.72%</b>	<b>100%</b>

**Table 28 - Default Commercial Data Used**

## 14 Appendix G: Total Charges and Payments Data

The tables below list historical values for Total Charges and Total Payments in the SEM by month and currency since start of the SEM.

- Month of inclusion based on invoice date.
- Amounts are after application of Settlement Reallocation.

Market		Energy	Capacity	Market Operator	M+4 Energy	M+4 Capacity	M+4 Market Operator	M+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
Dec-12	ROI	£68,890,367.82	£27,175,258.66	£1,453,892.42	£1,367,682.89	£211,913.45	£13,640.44	£184,887.15	£68,193.14	£2,122.34	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>99,367,958.31</b>
	NI	£24,651,820.70	£9,131,472.08	£401,777.60	£44,749.52	£11,940.86	£465.14	£63,380.27	£22,288.31	£634.76	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>34,328,529.24</b>
Jan-13	ROI	£89,827,878.57	£26,334,617.52	£2,179,428.02	£275,938.89	£60,704.91	£2,917.73	£338,895.92	£104,548.76	£3,484.00	£485,756.37	£0.00	£0.00	£0.00	£0.00	£0.00	<b>119,614,171.69</b>
	NI	£38,908,867.22	£9,892,058.69	£625,001.59	£114,941.48	£16,060.27	£787.73	£79,831.02	£23,734.39	£794.02	£102,060.65	£0.00	£0.00	£0.00	£0.00	£0.00	<b>49,764,137.06</b>
Feb-13	ROI	£72,865,873.54	£22,784,571.67	£1,864,807.04	£202,860.04	£90,593.84	£2,270.62	£210,440.14	£55,013.84	£2,455.48	£411,882.56	£4,580.15	£0.00	£0.00	£0.00	£0.00	<b>98,495,348.92</b>
	NI	£32,936,712.97	£8,462,296.20	£550,141.87	£114,801.30	£34,659.85	£1,115.24	£103,408.99	£30,682.40	£1,022.45	£64,545.24	£108,480.69	£0.00	£0.00	£0.00	£0.00	<b>42,407,867.20</b>
Mar-13	ROI	£127,314,463.58	£23,722,798.04	£2,291,239.29	£864,841.00	£174,940.58	£8,550.98	£186,631.48	£857.64	£2,030.63	£975.81	£35,849.23	£0.00	£0.00	£0.00	£0.00	<b>154,603,178.26</b>
	NI	£50,188,227.14	£7,867,652.16	£670,314.56	£168,687.60	£25,656.56	£1,296.87	£192,392.70	£19,921.59	£1,759.69	£326.36	£40,303.36	£0.00	£0.00	£0.00	£0.00	<b>59,176,538.59</b>
Apr-13	ROI	£94,898,266.67	£24,603,683.43	£1,748,803.30	£804,681.41	£212,498.40	£9,193.22	£80,220.96	£20,929.63	£916.08	£48.99	£0.00	£0.00	£0.00	£0.00	£0.00	<b>122,379,242.09</b>
	NI	£37,421,753.53	£7,712,011.14	£502,580.98	£118,654.43	£33,935.90	£1,120.40	£148,272.63	£40,588.36	£1,442.34	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>45,980,359.71</b>
May-13	ROI	£75,322,037.00	£18,225,439.33	£1,992,774.31	£1,158,818.37	£146,111.71	£15,573.02	£111,887.20	£28,127.61	£1,193.04	£152,210.12	£652.17	£0.00	£0.00	£0.00	£0.00	<b>97,154,823.88</b>
	NI	£31,159,914.52	£5,593,300.54	£573,502.76	£82,329.55	£16,818.23	£626.00	£137,450.86	£29,792.11	£1,305.88	£59,854.79	£266.11	£0.00	£0.00	£0.00	£0.00	<b>37,655,161.35</b>
Jun-13	ROI	£53,639,376.33	£23,772,504.60	£1,559,489.89	£540,072.04	£142,565.06	£7,016.24	£102,851.57	£13,071.70	£771.48	£998.47	£0.00	£0.00	£0.00	£0.00	£0.00	<b>79,778,717.38</b>
	NI	£23,668,207.38	£5,028,617.48	£449,494.74	£57,959.79	£29,005.42	£934.94	£79,008.70	£15,600.91	£697.05	£156,734.88	£0.00	£0.00	£0.00	£0.00	£0.00	<b>29,486,261.29</b>
Jul-13	ROI	£62,352,631.32	£18,204,333.81	£1,583,236.61	£975,631.58	£172,502.45	£7,848.20	£63,562.31	£16,373.37	£690.66	£904,389.43	£100,791.99	£0.00	£0.00	£0.00	£0.00	<b>84,381,991.73</b>
	NI	£23,916,092.51	£6,533,901.21	£432,681.38	£92,026.95	£16,773.81	£694.39	£14,400.35	£3,081.82	£130.14	£204,040.13	£152.19	£0.00	£0.00	£0.00	£0.00	<b>31,213,974.88</b>
Aug-13	ROI	£56,496,937.96	£18,035,531.87	£1,912,592.26	£627,109.44	£97,756.86	£9,727.88	£15,214,588.11	£12,273.00	£808.64	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>92,407,326.02</b>
	NI	£27,126,182.07	£5,775,203.97	£544,995.28	£40,928.60	£52,444.19	£3,674.11	£6,235,909.64	£5,483.53	£223.46	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>39,785,044.85</b>
Sep-13	ROI	£55,820,919.05	£17,453,995.09	£1,590,840.77	£871,046.03	£104,726.26	£5,239.42	£999,727.04	£165,703.71	£11,019.16	£0.00	£324,142.04	£0.00	£0.00	£0.00	£0.00	<b>77,347,358.57</b>
	NI	£24,090,106.60	£5,421,565.87	£449,859.41	£232,772.49	£25,268.64	£1,265.21	£119,141.06	£13,356.37	£112.60	£0.00	£78,558.74	£0.00	£0.00	£0.00	£0.00	<b>30,432,006.99</b>
Oct-13	ROI	£63,823,874.40	£19,230,805.66	£1,459,680.53	£665,669.95	£112,389.91	£4,962.50	£1,056,400.80	£25,936.14	£883.81	£1,141,610.70	£0.00	£0.00	£0.00	£0.00	£0.00	<b>87,522,214.40</b>
	NI	£25,790,053.14	£5,439,039.21	£415,013.56	£77,362.24	£11,759.56	£437.51	£286,637.75	£5,978.86	£356.54	£375,245.80	£0.00	£0.00	£0.00	£0.00	£0.00	<b>32,401,884.17</b>
Nov-13	ROI	£94,237,410.27	£26,111,830.04	£1,768,924.89	£1,095,479.88	£186,255.41	£10,667.03	£1,203,541.15	£58,436.00	£1,881.53	£2,162,845.35	£0.00	£0.00	£0.00	£0.00	£0.00	<b>126,837,271.55</b>
	NI	£40,120,956.32	£9,383,627.04	£512,345.05	£79,171.25	£13,455.28	£753.82	£304,333.70	£18,778.73	£614.32	£591,913.98	£0.00	£0.00	£0.00	£0.00	£0.00	<b>51,025,949.49</b>
Dec-13	ROI	£59,731,699.86	£27,864,400.43	£1,135,385.04	£777,997.00	£175,711.33	£8,515.85	£874,795.89	£44,746.05	£1,825.43	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>90,615,076.88</b>
	NI	£26,108,999.75	£9,220,782.35	£325,646.22	£58,193.58	£77,917.35	£571.58	£137,253.25	£487.47	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	<b>35,944,451.42</b>

Table 29 - Total Charges by Month

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Market		Energy	Capacity	M+4 Energy	M+4 Capacity	M+4 Market Operator	M+13 Energy	M+13 Capacity	M+13 Market Operator	Ad-hoc Energy	Ad-hoc Capacity	Ad-hoc Market Operator	Total
Dec-12	ROI	€66,869,248.59	€26,943,220.74	€1,559,542.02	€214,977.96	€15,688.09	€191,971.09	€68,256.74	€2,172.02	€0.00	€0.00	€0.00	€95,865,077.25
	NI	€22,744,382.44	€9,319,176.55	€45,013.45	€9,560.28	€467.21	€63,419.24	€22,207.72	€634.76	€0.00	€0.00	€0.00	€32,204,861.65
Jan-13	ROI	€91,759,322.00	€25,712,722.97	€274,887.70	€51,586.65	€2,809.90	€392,982.49	€101,294.32	€3,484.23	€419,922.27	€0.00	€0.00	€118,659,012.53
	NI	€32,027,783.27	€10,446,605.69	€121,418.33	€23,726.56	€1,485.52	€77,993.90	€26,479.72	€794.11	€135,435.31	€0.00	€0.00	€42,861,722.41
Feb-13	ROI	€73,704,113.80	€23,029,404.56	€199,730.87	€87,310.46	€1,919.17	€210,628.92	€55,032.66	€2,455.70	€294,099.32	€26,403.93	€0.00	€97,611,099.39
	NI	€27,818,032.41	€8,376,133.85	€122,937.80	€37,714.70	€925.87	€103,468.58	€30,688.62	€1,022.54	€74,109.24	€89,510.50	€0.00	€36,654,544.11
Mar-13	ROI	€132,581,329.95	€23,933,777.63	€854,530.25	€170,044.84	€9,205.75	€186,261.22	€17,546.38	€2,030.72	€102,825.18	€34,807.36	€0.00	€157,892,359.28
	NI	€46,332,187.69	€7,780,431.46	€185,025.05	€29,721.69	€1,214.91	€192,287.94	€5,154.36	€1,759.68	€0.00	€40,546.06	€0.00	€54,568,328.84
Apr-13	ROI	€100,948,367.03	€23,458,654.50	€807,793.67	€206,615.70	€7,720.47	€80,292.46	€20,961.03	€915.98	€15,278.90	€0.00	€0.00	€125,546,599.74
	NI	€35,045,424.03	€8,627,034.92	€119,014.70	€39,049.40	€1,115.60	€148,303.90	€40,600.32	€1,442.59	€132,224.24	€0.00	€0.00	€44,154,209.70
May-13	ROI	€79,510,881.07	€17,301,213.34	€1,115,672.13	€140,740.46	€14,573.32	€112,291.28	€35,779.70	€1,189.42	€224,599.73	€414.39	€0.00	€98,457,354.84
	NI	€31,347,092.48	€6,357,878.47	€111,377.22	€21,468.44	€1,305.48	€139,334.16	€23,234.36	€1,305.31	€1,089.56	€473.49	€0.00	€38,004,558.97
Jun-13	ROI	€62,856,676.93	€22,620,279.73	€495,012.84	€137,864.81	€7,303.60	€61,553.46	€12,972.87	€771.42	€7,168.09	€0.00	€0.00	€86,199,603.75
	NI	€20,005,532.91	€5,952,891.95	€123,662.20	€32,894.53	€1,059.57	€67,817.83	€15,562.24	€697.08	€160,132.43	€0.00	€0.00	€26,360,250.74
Jul-13	ROI	€64,373,421.59	€18,247,432.96	€964,041.86	€173,902.58	€7,906.35	€55,507.11	€17,916.41	€690.80	€924,828.19	€100,969.43	€0.00	€84,866,617.28
	NI	€24,434,329.71	€6,507,406.51	€94,802.99	€15,679.58	€710.78	€12,978.92	€1,777.48	€130.12	€206,821.52	€0.00	€0.00	€31,274,637.61
Aug-13	ROI	€63,981,400.27	€17,490,496.02	€574,908.31	€103,763.23	€10,083.25	€16,006,162.20	€10,709.76	€808.95	€986.69	€0.00	€0.00	€98,179,318.68
	NI	€23,798,215.28	€6,256,493.76	€56,417.87	€47,293.31	€2,768.68	€5,757,671.12	€6,849.67	€223.45	€18,449.41	€0.00	€0.00	€35,944,382.55
Sep-13	ROI	€62,051,092.84	€16,936,760.25	€1,068,679.90	€128,081.30	€7,144.86	€971,541.05	€151,818.04	€11,020.17	€0.00	€416,852.38	€0.00	€81,742,990.79
	NI	€21,229,997.89	€5,817,250.40	€156,880.27	€5,515.98	€108.46	€19,000.09	€25,023.77	€112.65	€0.00	€92.64	€0.00	€27,253,982.15
Oct-13	ROI	€70,147,828.86	€18,147,894.98	€704,498.56	€112,615.82	€6,476.59	€907,795.23	€25,996.67	€883.97	€1,040,063.76	€0.00	€0.00	€91,094,054.44
	NI	€24,161,387.51	€6,338,740.34	€71,964.41	€11,643.56	€445.89	€216,015.53	€5,767.60	€356.54	€303,081.27	€0.00	€0.00	€31,109,402.65
Nov-13	ROI	€101,727,467.69	€26,117,243.83	€1,224,763.25	€189,998.42	€12,263.50	€1,215,831.35	€57,206.41	€1,470.22	€2,187,635.43	€0.00	€0.00	€132,733,880.10
	NI	€38,593,632.08	€9,396,822.98	€111,667.01	€10,330.33	€754.66	€405,512.07	€19,818.44	€503.29	€523,998.04	€0.00	€0.00	€49,063,038.90
Dec-13	ROI	€65,016,104.57	€28,265,983.93	€814,481.63	€237,772.30	€8,560.54	€742,019.49	€45,101.88	€1,753.62	€0.00	€0.00	€0.00	€95,131,777.96
	NI	€26,883,033.60	€8,854,167.97	€62,225.77	€25,458.47	€563.46	€254,389.50	€14,183.48	€467.80	€0.00	€0.00	€0.00	€36,094,490.05

Table 30 - Total Payments by Month

## 15 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.

### 15.1 Trading Market

Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
05/10/2012	39	-€1,077,539.06	€20,257.96
12/10/2012	40	-€692,560.91	-€104,333.10
19/10/2012	41	-€1,258,033.40	€31,919.77
26/10/2012	42	-€646,984.66	-€54,760.48
02/11/2012	43	-€970,686.14	-€9,966.85
09/11/2012	44	-€508,715.25	€6,228.89
16/11/2012	45	-€636,721.45	-€22,097.99
23/11/2012	46	-€813,412.49	-€100,206.95
30/11/2012	47	-€1,259,783.89	-€49,499.93
07/12/2012	48	-€723,279.80	-€107,658.75
14/12/2012	49	-€180,494.54	€96,306.36
21/12/2012	50	-€897,747.20	-€120,196.01
21/12/2012	51	-€593,996.15	€-88,195.77
04/01/2013	52	-€1,077,836.51	-€9,406.58
11/01/2013	53	-€862,900.80	-€704,411.86
18/01/2013	1	-€1,242,645.13	-€74,124.96
25/01/2013	2	-€1,384,005.15	-€44,938.68.
01/02/2013	3	-€1,413,334.62	-€749,099.00
08/02/2013	4	-€573,311.06	€-110,612.60
15/02/2013	5	-€683,271.00	-€150,504.58
22/02/2013	6	-€1,304,677.00	-€ 87,285.68
01/03/2013	7	-€955,481.00	-€63,387.10
08/03/2013	8	€521,885.20	-€37,612.20
15/03/2013	9	€780,017.82	-€191,346.31
22/03/2013	10	€76,682.83	-€ 33,779.34
29/03/2013	11	€1,751,026.70	€226,127.75
05/04/2013	12	€1,481,990.19	€233,031.06
12/04/2013	13	€900,447.74	€169,797.61
19/04/2013	14	€174,491.87	€79,222.01
26/04/2013	15	-€124,155.84	€55,001.41
03/05/2013	16	€4,194,033.05	€95,195.72
10/05/2013	17	€588,449.05	€72,510.56
17/05/2013	18	€1,201,538.52	€231,453.11
24/05/2013	19	€533,643.75	€171,819.33
31/05/2013	20	€726,548.40	€151,511.16
07/06/2013	21	€1,451,045.71	-€107,404.19
14/06/2013	22	€36,158,415.40	€81,081.91
21/06/2013	23	€33,532,711.17	€254,620.85
28/06/2013	24	€32,560,665.31	€137,013.94
05/07/2013	25	€30,755,155.90	-€270,703.40
12/07/2013	26	-€1,089,924.40	€262,177.74

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Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
19/07/2013	27	-€563,128.35	-€68,673.69
26/07/2013	28	-€714,901.13	-€40,860.48
02/08/2013	29	€205,917.92	€66,609.70
09/08/2013	30	€1,437,026.89	€247,168.27
16/08/2013	31	€707,065.78	€132,509.43
23/08/2013	32	€558,514.35	€164,313.15
30/08/2013	33	€444,519.00	€66,601.88
06/09/2013	34	€739,427.97	€46,104.76
13/09/2013	35	€503,537.51	€120,987.81
20/09/2013	36	-€397,801.42	-€15,480.32
27/09/2013	37	€1,900,605.03	€349,945.09
04/10/2013	38	-€674,643.65	-€7304.11
11/10/2013	39	€1,470,454.75	€282,967.81
18/10/2013	40	€1,565,540.72	€261,420.05
25/10/2013	41	€1,216,501.47	-€203,049.68
01/11/2013	42	€1,582,640.50	€227,924.39
08/11/2013	43	€2,175,993.38	€368,919.09
15/11/2013	44	€234,229.47	€89,641.72
22/11/2013	45	€893,912.83	€182,707.89
29/11/2013	46	€112,506.60	€1,606.89
06/12/2013	47	€2,647,032.97	€215,777.46
13/12/2013	48	€752,640.18	€133,576.36
20/12/2013	49	€1,841,603.06	€263,539.44

**Table 31 – 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.

### 15.2 Capacity Market

Invoice Month	SEM Balancing Costs	VAT Balancing Costs
October 2011	-€393.18	€0.02
November 2011	-€429.87	€0.02
December 2011	-€455.01	€0.04
January 2012	-€378.81	€0.05
February 2012	-€353.95	€0.01
March 2012	-€353.86	€0.05
April 2012	-€260.80	€0.02
May 2012	-€256.60	€0.05
June 2012	-€220.29	€0.06
July 2012	-€225.36	€0.05
August 2012	-€242.79	€0.02
September 2012	-€254.31	€0.03
October 2012	-€345.29	€0.00
November 2012	-€375.57	€0.04

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Invoice Month	SEM Balancing Costs	VAT Balancing Costs
December 2012	-€390.80	€0.04
January 2013	-€412.09	-€0.02
February 2013	-€333.91	€4,279.75
March 2013	-€358.50	€8,568.37
April 2013	-€253.55	€180.62
May 2013	-€251.13	€0.04
June 2013	-€148.82	€0.03
July 2013	-€221.96	-668.47
August 2013	-€235.63	€79.92
September 2013	-€978.79	-€129.09
October 2013	-€304.76	-€94.05
November 2013	-€372.56	€2,045.28
December 2013	-€394.40	€-454.73

**Table 32 - 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.



## 16 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
September 2012	-	-	-	-	14/09/2012
October 2012	-	-	14/10/2012	07/10/2012 21/10/2012	-
November 2012	-	01/11/2012	29/11/2012 30/11/2012	29/11/2012	-
December 2012	-	-	06/12/2012 28/12/2012	02/12/2012 16/12/2012	-
January 2013	-	-	22/01/2013 31/01/2013	08/01/2013 25/01/2013 26/01/2013	06/01/2013
February 2013	10/02/2013	01/02/2013	-	03/02/2013	06/02/2013 18/02/2013
March 2013	05/03/2013 18/03/2013	12/03/2013 19/03/2013	11/03/2013 18/03/2013 26/03/2013 29/03/2013	11/03/2013 26/03/2013	11/03/2013 21/03/2013 20/03/2013 30/03/2013
April 2013	-	-	-	-	09/04/2013 29/04/2013

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Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
May 2013	-	-	-	-	-
June 2013	-	18/06/2013	-	-	-
July 2013	-	-	-	25/07/2013	16/07/2013
August 2013	-	13/08/2013	14/08/2013	-	05/08/2013
September 2013	-	24/09/2013	05/09/2013	12/09/2013	03/09/2013 30/09/2013
October 2013	-	-	30/10/2013	07/10/2013, 24/10/2013 & 30/10/2013	-
November 2013	-	-	14/11/2013 20/11/2013	14/11/2013	17/11/2013 30/11/2013
December 2013	02/12/2013 03/12/2013	02/12/2013	02/12/2013 21/12/2013		19/12/2013

Table 33 - MIP Algorithms

Operational Date	Trade Date	Run Type	LR Peak SMP	MIP Peak SMP	Published
04/03/2013	05/03/2013	EA1	€586.55	€301.78	MIP
11/03/2013	11/03/2013	WD1	€629.46	€333.37	MIP
11/03/2013	12/03/2013	EA2	€561.28	€221.27	MIP
12/03/2013	11/03/2013	EP1	€1,350.64	€699.49	MIP
15/03/2013	11/03/2013	EP2	€1,350.64	€699.49	MIP
17/03/2013	18/03/2013	EA1	€576.04	€346.00	MIP
18/03/2013	19/03/2013	EA2	€682.41	€346.00	MIP
19/03/2013	18/03/2013	EP1	€576.04	€372.23	MIP
20/03/2013	24/03/2013	EP2	€625.32	€168.48	MIP
21/03/2013	21/03/2013	WD1	€596.97	€259.45	MIP
27/03/2013	26/03/2013	EP1	€508.83	€265.65	MIP
30/03/2013	30/03/2013	WD1	€556.86	€396.00	MIP

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30/03/2013	29/03/2013	EP1	€732.81	€414.64	MIP
30/03/2013	26/03/2013	EP2	€509.19	€265.65	MIP
09/04/2013	09/04/2013	WD1	€710.75	€123.59	MIP
29/04/2013	29/04/2013	WD1	€1000.00	€168.92	MIP
17/06/2013	18/06/2013	EA2	€576.24	€84.08	MIP
16/07/2013	16/07/2013	WD1	583.17	48.11	MIP
29/07/2013	25/07/2013	EP2	€591.29	€97.59	MIP
05/08/2013	05/08/2013	WD1	€1,000	€47.02	MIP
12/08/2013	13/08/2013	EA2	€591.14	€91.37	MIP
15/08/2013	14/08/2013	EP1	€590.51	€79.91	MIP
03/09/2013	03/09/2013	WD1	€591.42	€96.56	MIP
06/09/2013	05/09/2013	EP1	€598.70	€116.29	MIP
16/09/2013	12/09/2013	EP2	€1000.00	€313.90	MIP
23/09/2013	24/09/2013	EA2	€609.58	€98.56	MIP
30/09/2013	30/09/2013	WD1	-€100.00	€31.47	MIP
11/10/2013	07/10/2013	EP2	€1000	€77.71	MIP
28/10/2013	24/10/2013	EP2	€517.40	€517.40	MIP
31/10/2013	30/10/2013	EP1	€596.88	€363.43	MIP
03/11/2013	30/10/2013	EP2	€596.88	€363.43	MIP
15/11/2013	14/11/2013	EP1	€555.85	€511.00	MIP
18/11/2013	14/11/2013	EP2	€679.09	€511.00	MIP
17/11/2013	17/11/2013	WD1	€638.64	€572.75	MIP
21/11/2013	20/11/2013	EP1	€ -100.00	€268.28	MIP
30/11/2013	30/11/2013	WD1	€568.78	€283.21	MIP
01/12/2013	02/12/2013	EA1	€569.78	€264.13	MIP
01/12/2013	02/12/2013	EA2	€569.78	€265.85	MIP
02/12/2013	02/12/2013	WD1	€651.62	€243.25	MIP
02/12/2013	03/12/2013	EA1	€1000.00	€311.25	MIP
21/12/2013	21/12/2013	WD1	€637.14	€308.15	MIP
23/12/2013	19/12/2013	EP2	€633.99	€371.89	MIP

**Table 34 - MIP Vs LR Peak Price Comparison**