



Market Operator Monthly Report

November 2017

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Executive Summary

This Single Electricity Market Operator's (SEMO) report covers the month of operation of November 2017 and is published in accordance with the Single Electricity Market (SEM) Committee decision and Clause 2.144 of the Trading and Settlement Code.

During the month of November 2017, there were 3 late Indicative Settlement publications.

During the month of November 2017, there was no late Credit Report publication as per the Trading and Settlement code timelines.

There were 18 defaults by Participants during November 2017. The largest of these was a Capacity October 2017 Initial invoice for €54,858.35 which was remedied on the same day.

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

161 general queries were received in November 2017. During the same period 164 general queries were resolved.

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

Monthly Statistics

Trading and Settlement Code Breaches

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

Trading and Settlement Code Breaches			
Area		Major	Minor
Data Providers		-	-
Market Participants	Pricing & Scheduling	-	-
	Settlement	-	-
	Funds Transfer	18	-
	Credit Risk Management	-	-
SEMO	Pricing & Scheduling	-	-
	Settlement	-	-
	Funds Transfer	-	-
	Credit Risk Management	-	-
	Other	-	-
Total		18	-

Table 1 – Trading and Settlement Code Breaches

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

Key:

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

Joining and Terminating Parties and Units

No new Parties joined the Market in November 2017.

There were no terminating parties in November 2017.

The following units went effective in the Market in November 2017

- PT_400066_Bord Gais Energy Supply - GU_402160 - Tullynamoyle Wind Farm 2
- PT_400055_ESB Independent Energy ROI Generation - GU_402190 - Castlepook Wind Farm
- PT_400219_Megawatts Power Trading Limited - SU_400221 - Megawatts Power Trading
- PT_400207_Shamrock Energy Supply - SU_400223 - Shamrock Energy Supply
- PT_400208_Oak Energy Supply Limited- GU_402110 - Cordal Windfarm
- PT_400208_Oak Energy Supply Limited - GU_402130 - Cordal 2 Windfarm
- PT_400210_Oak Energy Supply Limited - SU_400218 - Oak Energy Supply
- PT_400217_Harp Energy Supply Limited GU_402170 - Coollegrean Windfarm
- PT_400222_Plum Energy Supply Limited GU_402270 - Boolinrudda Windarm
- PT_400223_Plum Energy Supply Limited SU_400226 - Plum Energy Supply Limited
- PT_400230_Brookfield Renewable Supply 4 Limited - GU_402310 - Knockalassa Windfarm
- PT_400231_Brookfield Renewable Supply 4 Limited - GU_402320 - Knocknatallig Wind Farm

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

Suspension of Participants

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

Financial Statistics

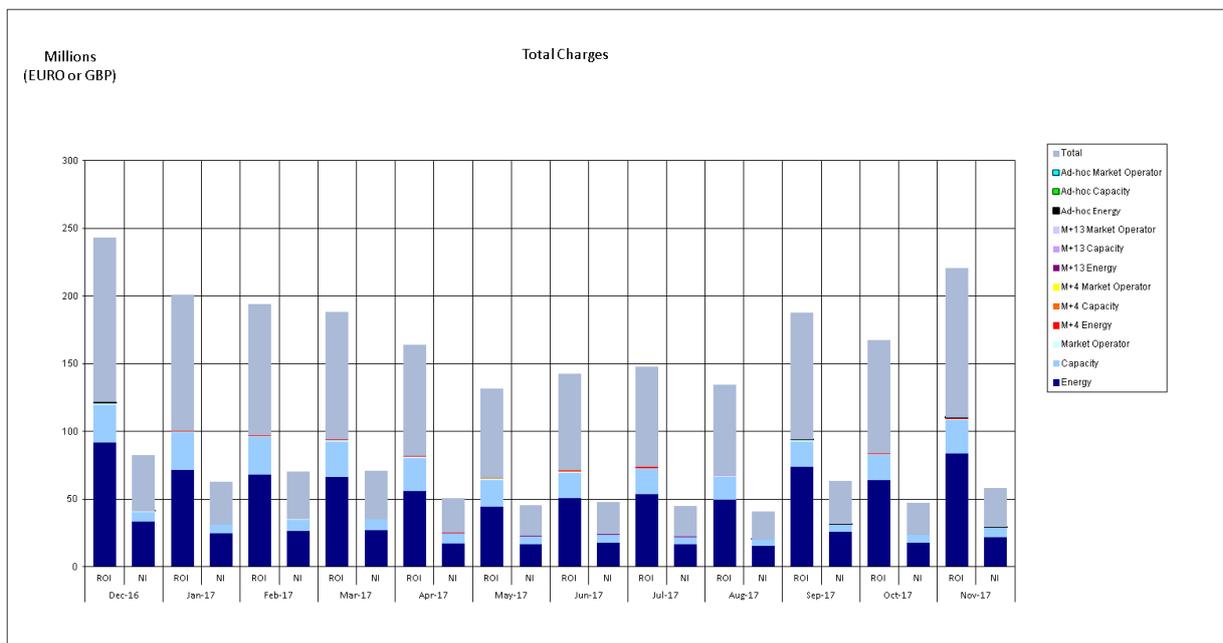


Figure 1 - Total Charges for Each Currency

Market	Nov 17	
	ROI	NI
Energy	€83,791,449	£22,118,497
Capacity	€24,787,352	£6,651,371
Market Operator	€781,890	£204,783
M+4 Energy	€413,698	£141,841
M+4 Capacity	€113,547	£56,639
M+4 Market Operator	€3,295	£1,085
M+13 Energy	€122,794	£61,621
M+13 Capacity	€33,971	£21,195
M+13 Market Operator	€718	£400
Ad-hoc Energy	€458,369	£705
Ad-hoc Capacity	€6,145	£2,550
Ad-hoc Market Operator	€6,145	£2,550
Total	€110,519,371	£29,263,237

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

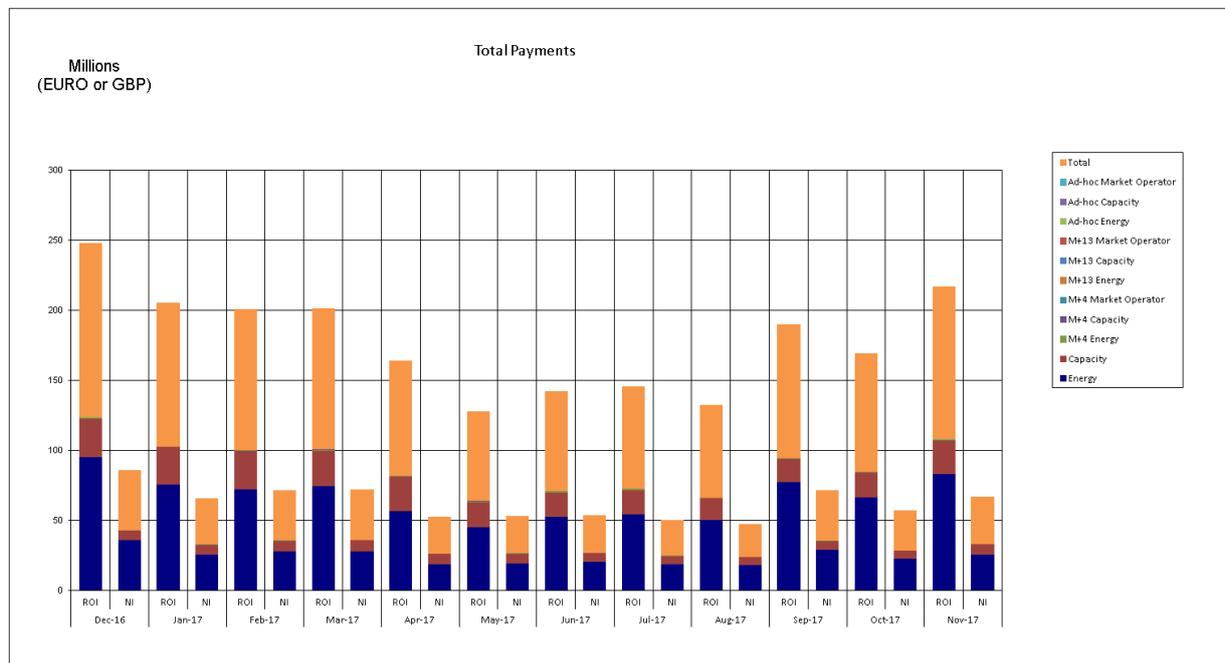


Figure 2 - Total Payments for Each Currency

Market	Nov 17	
	ROI	NI
Energy	€83,230,541	£25,746,600
Capacity	€23,930,421	£7,365,655
M+4 Energy	€473,719	£145,319
M+4 Capacity	€114,595	£55,530
M+4 Market Operator	€3,363	£1,080
M+13 Energy	€122,843	£61,622
M+13 Capacity	€33,951	£21,196
M+13 Market Operator	€718	£399
Ad-hoc Energy	€645,100	£274
Ad-hoc Capacity	€4,985	£3,545
Ad-hoc Market Operator	€800	£0
Total	€108,561,035	£33,401,221

Table 3 - Total Payments for Each Currency

Total Balancing Costs

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

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

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

November 2017	
Imbalance (Energy Only)	-€13,281,182.13

Table 4 - Balancing Costs for Energy Settlement

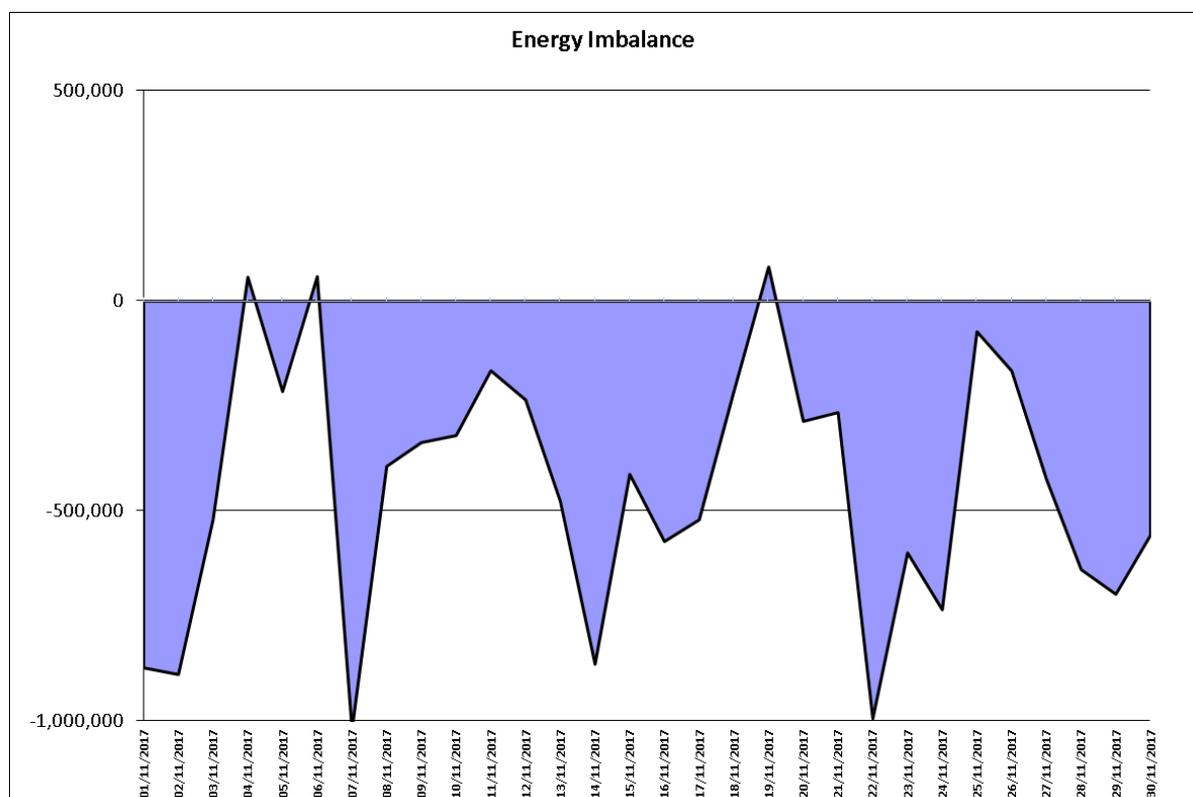


Figure 3 – Energy Imbalances

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The full Balancing Cost of the SEM is determined by the summation of the daily payment amounts for Energy Imbalance, Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges combined with the weekly Make Whole Payments and Testing Charges.

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

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

In tables 5 and 6 below:

- 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
03/11/2017	43	€1,496,601.70	€0
10/11/2017	44	€1,138,507.50	€0
17/11/2017	45	€2,429,067.77	€0
24/11/2017	46	€1,847,665.06	€0

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:

November 2017	
Capacity Charges	€52,556,005.39
Capacity Payments	€52,555,692.33
Balancing Costs	-313.06
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
28/10/2017	03/11/2017	43	£3.99	£-	£3.99
04/11/2017	10/11/2017	44	-£43,794.54	£-	-£43,794.54
11/11/2017	17/11/2017	45	-£4,811.98	£-	-£4,811.98
18/11/2017	24/11/2017	46	-£2.42	£-	-£2.42

Table 7 - Total Currency Costs for Trading Payments and Charges

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

Over the period of this report Currency Costs for each week represented a benefit to Participants of up to £3.99 and a loss of up to £43,794.54. 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.

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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
09/11/2017	Oct 2017	-£25,125.07

Table 8 - Total Currency Costs for Capacity Payments and Charges

Cumulative Imperfections Costs Vs Budget

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

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

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

Total Constraint Payments	Total Uninstructed Imbalance	Total Make Whole Payments	Total Imperfections
€45,206,271.78	-€564,465.50	€960,078.99	-€29,038,746.82

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.

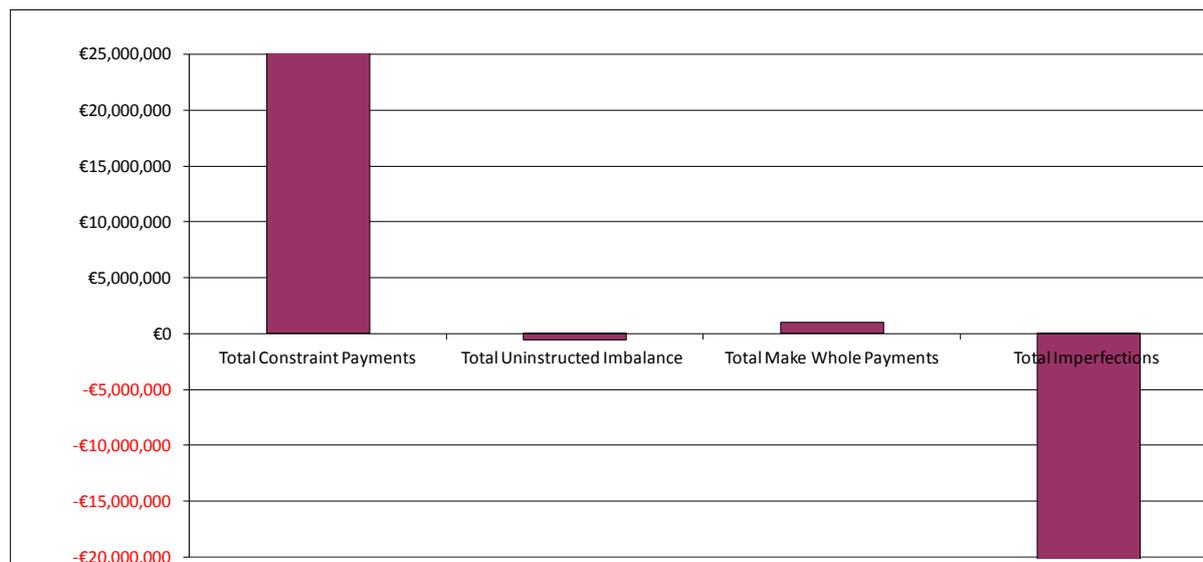


Figure 4 - Cumulative Imperfections Costs Vs Budget

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 July 2017 and M+13 resettlement period of October 2016 for Energy and Capacity.

3.1.1 Energy Market

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

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

The reverse is true for Figure 7 & 10

M+4 Resettlement

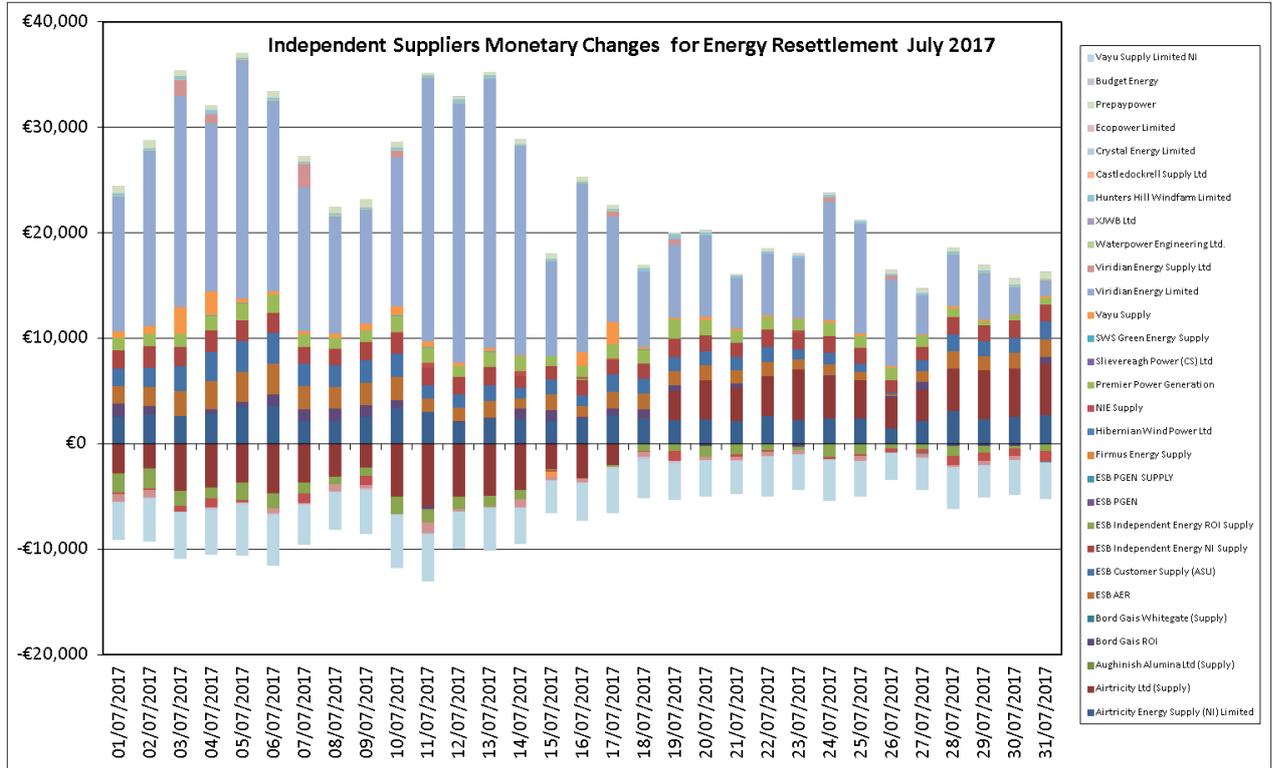


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – July 2017

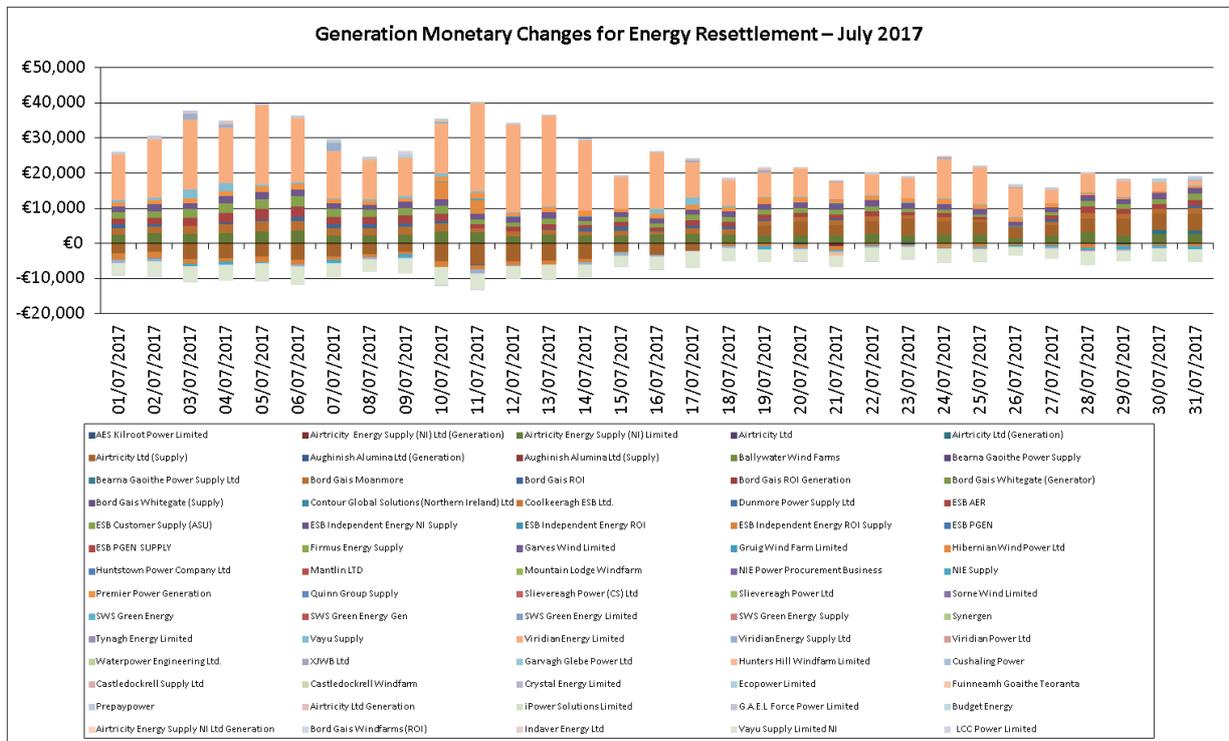


Figure 6 – Generation Monetary Changes for Energy Resettlement – July 2017

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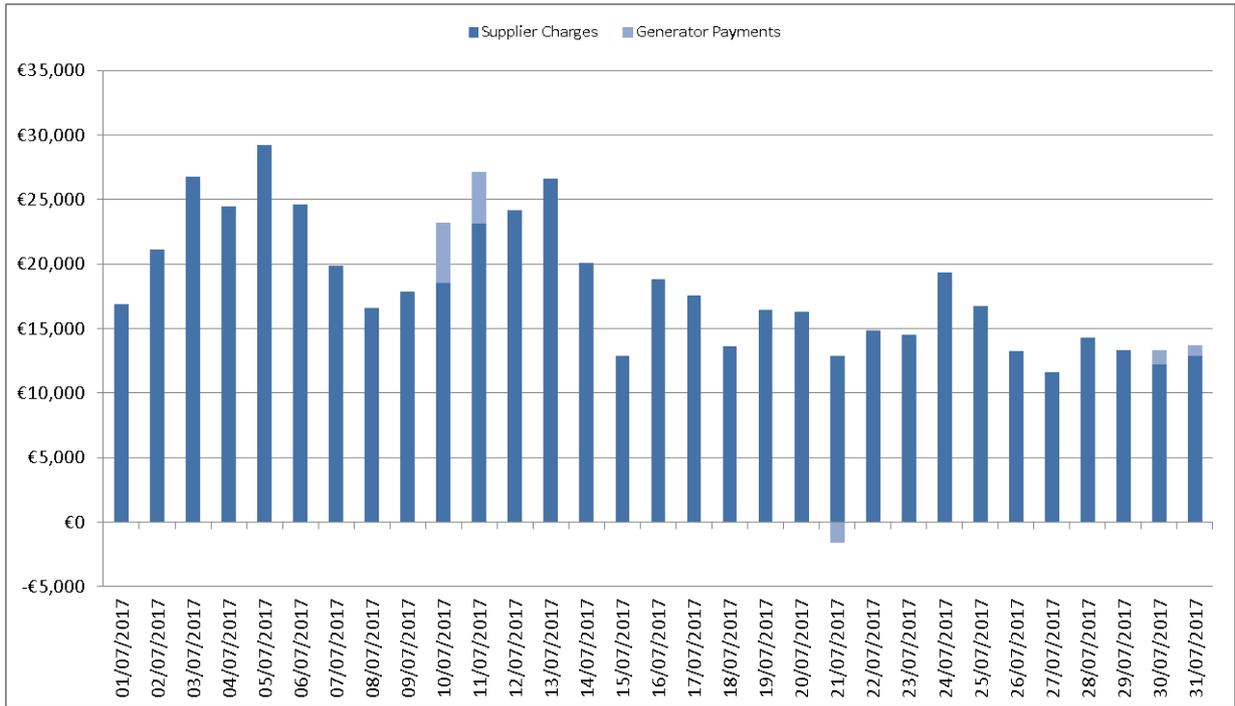


Figure 7 – Total Monetary Changes for Energy Resettlement – July 2017

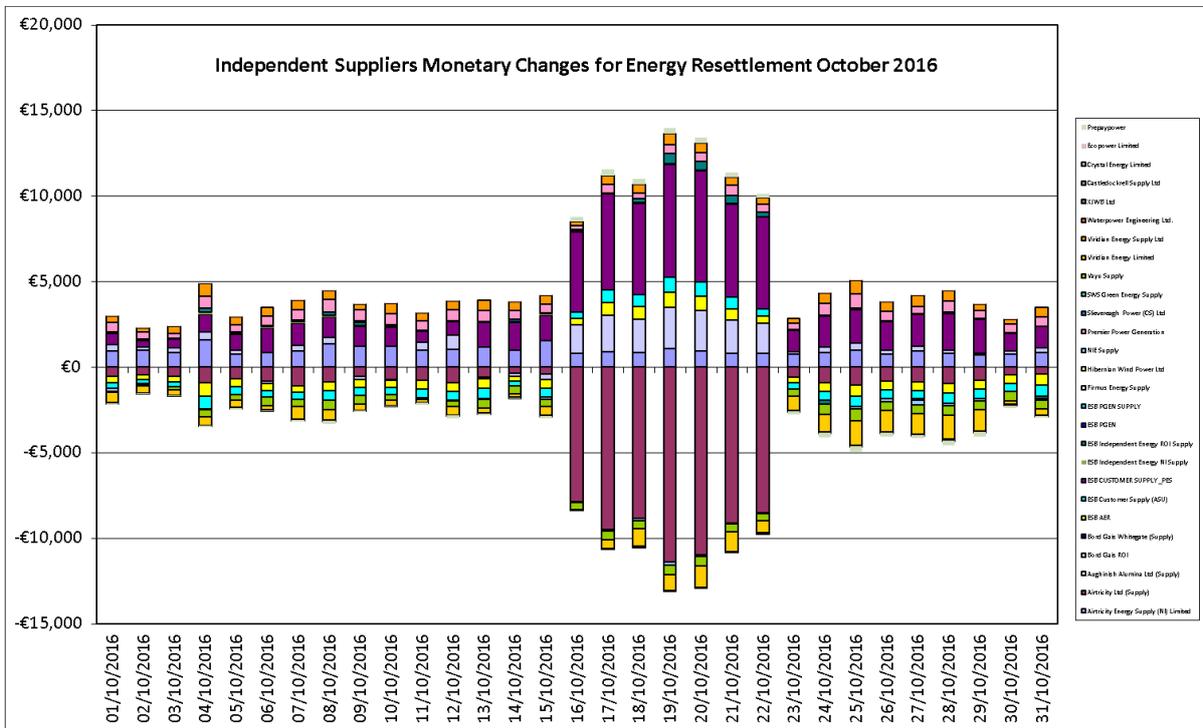


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – October 2016

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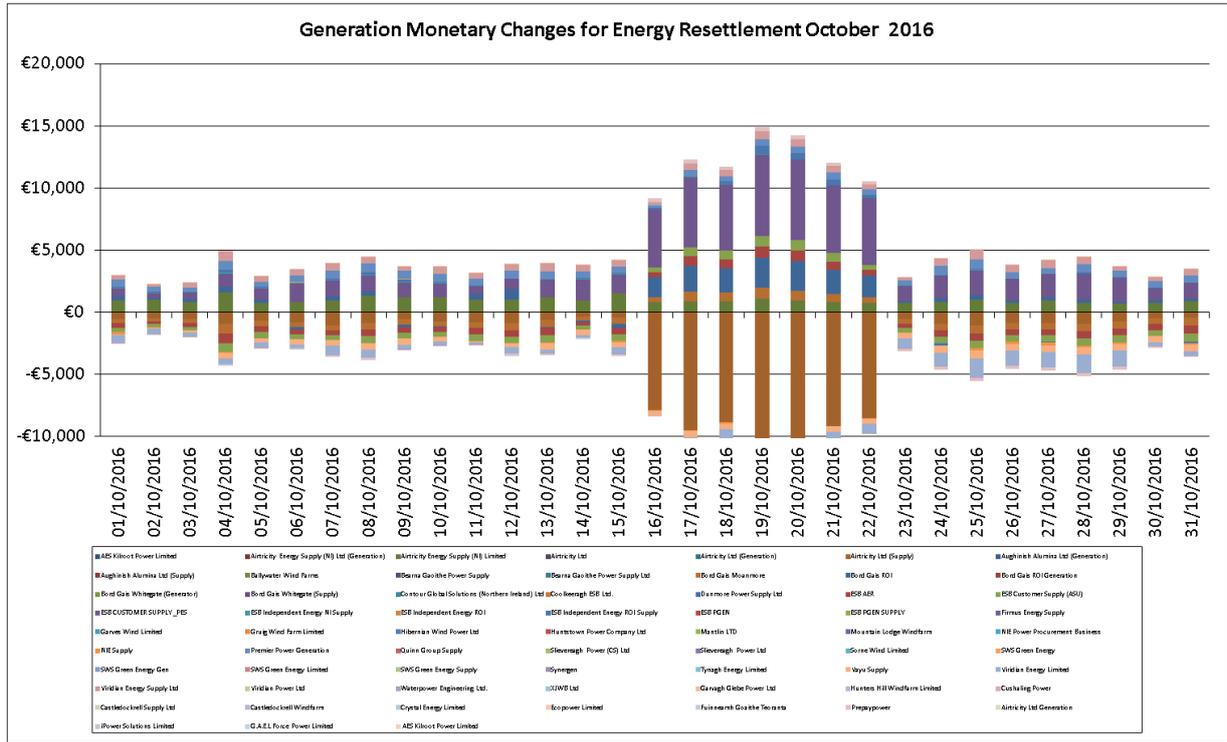


Figure 9 - Generation Monetary Changes for Energy Resettlement – October 2016

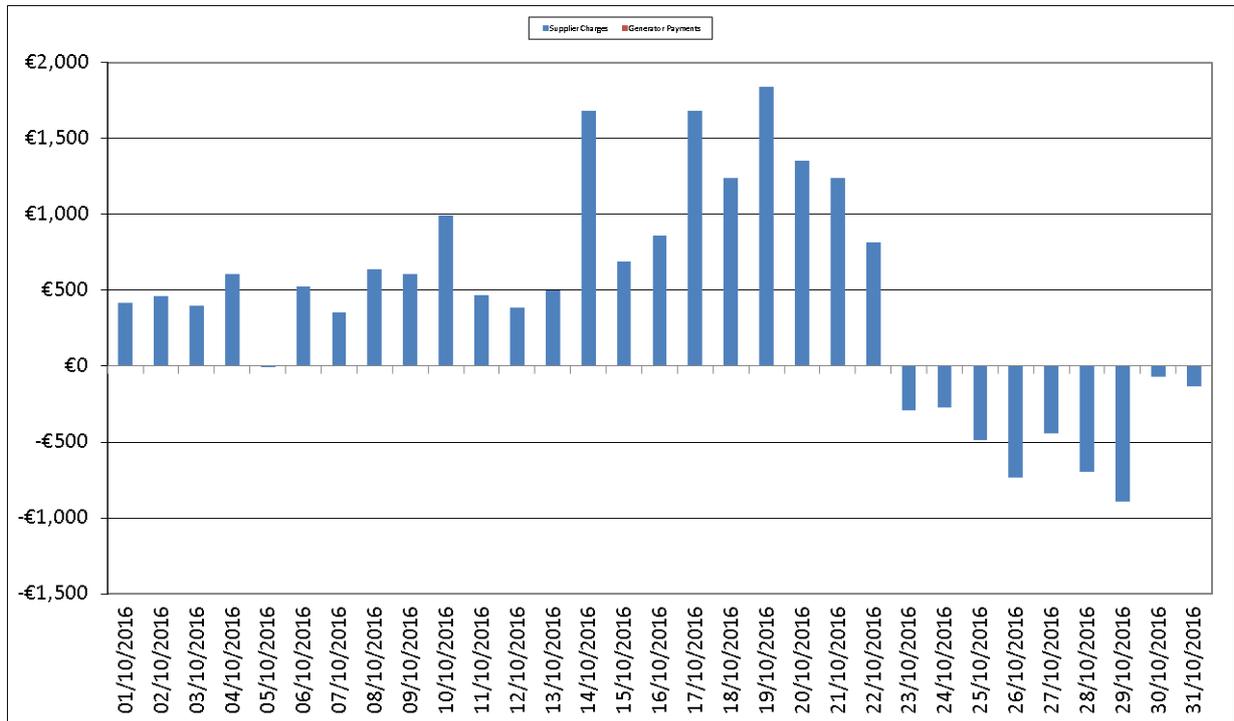


Figure 10 - Total Monetary Changes for Energy Resettlement – October 2016

3.1.2 Capacity Market

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

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- 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

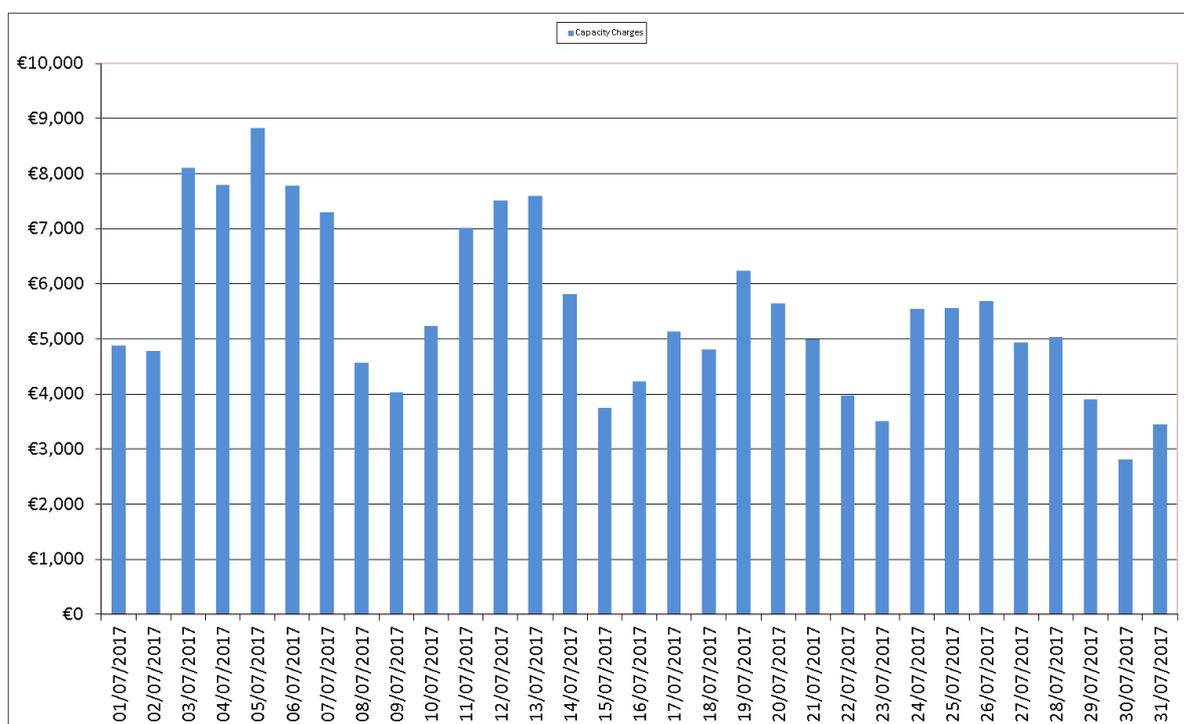


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – July 2017

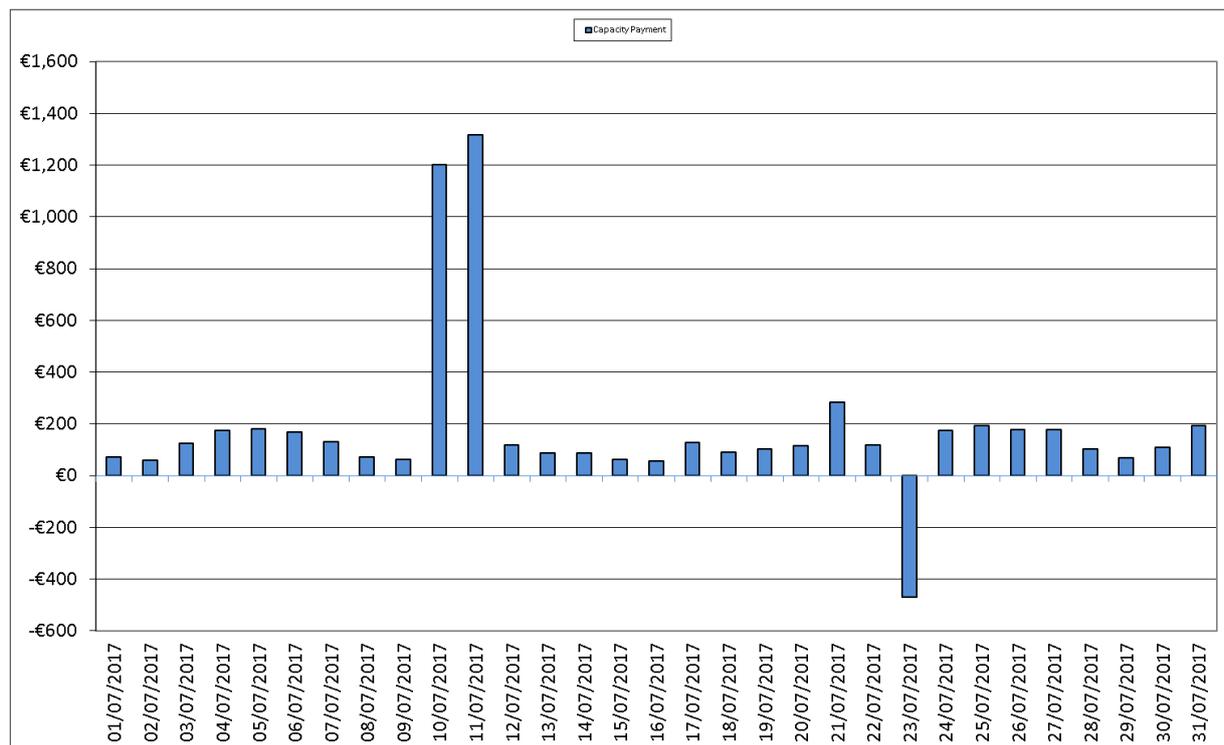


Figure 12 - All Generation Monetary Change for Capacity Resettlement – July 2017

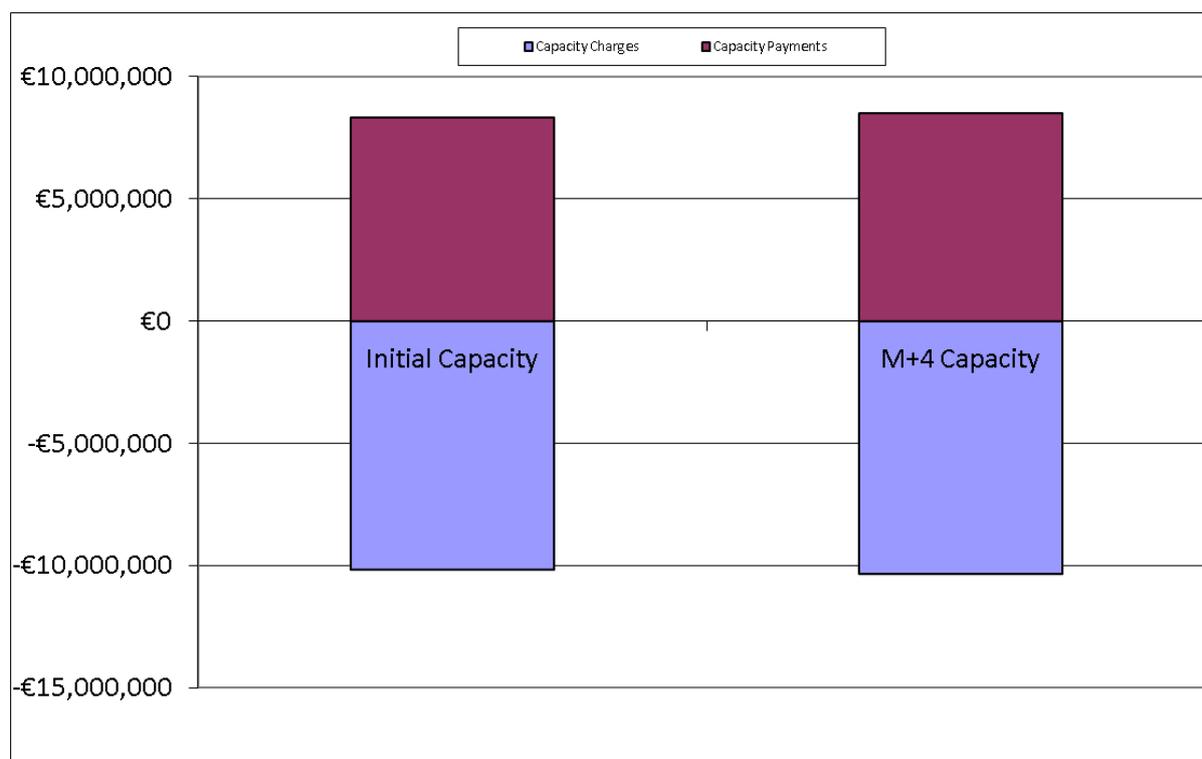


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement July 2017

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

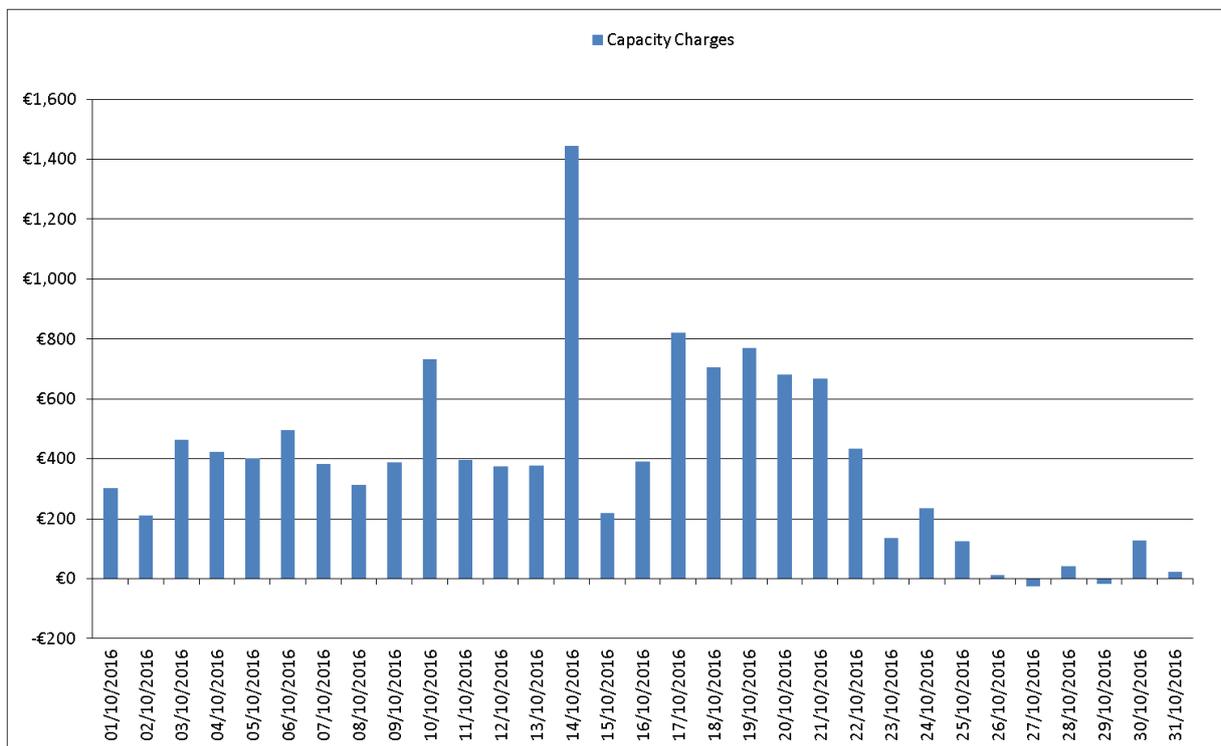


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – October 2016

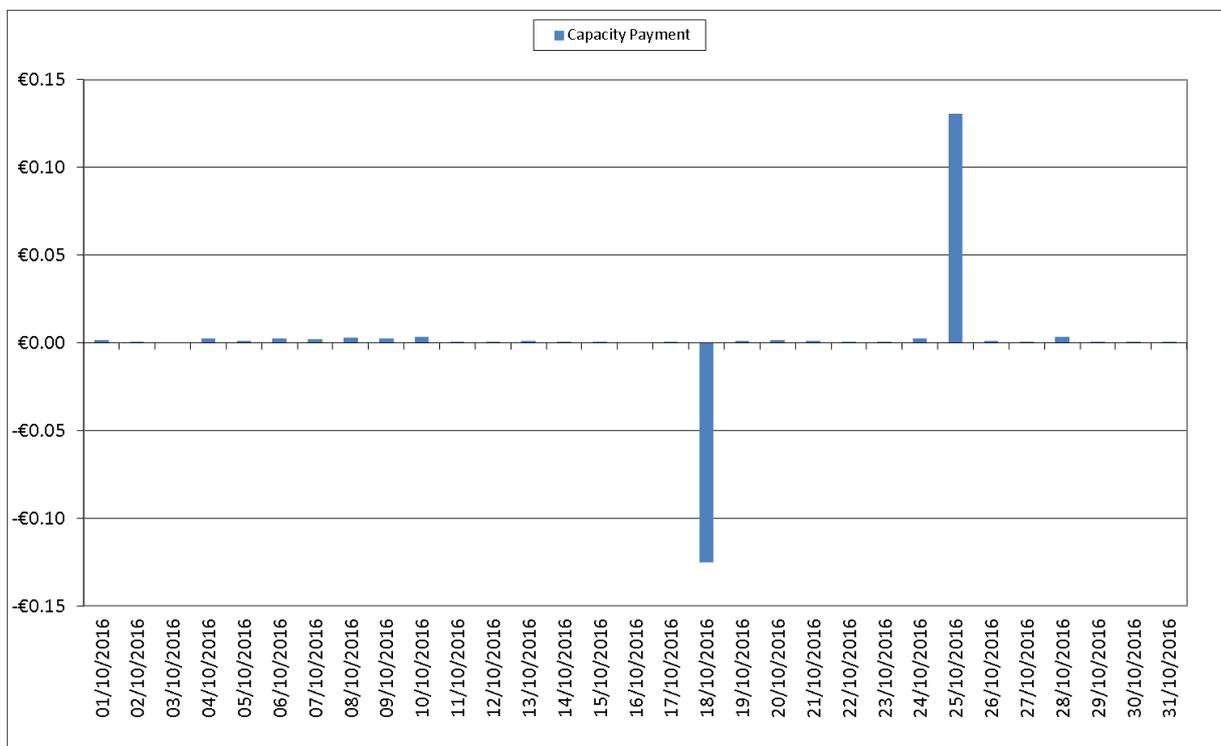


Figure 15 – All Generation Monetary Change for Capacity Resettlement – October 2016

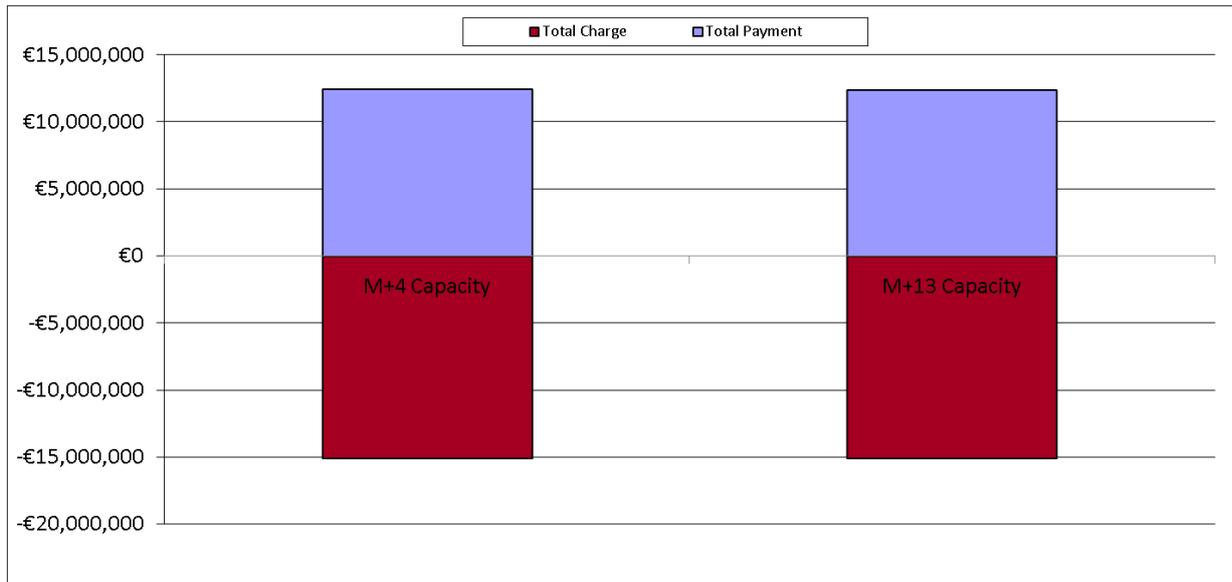


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – October 2016

Helpdesk Call Statistics

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

Market Helpdesk Report: 01/11/17 to 30/11/17

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	161	139	22	164	1.60	153
Important	0	0	0	0	0.00	0
Urgent	0	0	0	0	0.00	0
Settlement	11	7	4	9	3.56	9
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	172	146	26	173	1.03	162

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of November 2017.
- Resolved in the Period refers to queries resolved within November 2017, and includes queries raised before this time.
- Resolution Time (Working Days) refers to average time to resolve, in working days, for this category of query. It is calculated based on all queries for the category, not just November 2017.
- Not Resolved refers to queries raised but not resolved within November 2017.
- Urgent are general queries which may have an impact on market operations. SEMO has an internal objective to resolve these within 3 working days; however, this is not a mandated service level under the Trading and Settlement Code.
- Disputes are where a dispute has been raised over the outcome of a data or settlement query.

The average resolution time for General Queries has decreased by 0.65 working days from 2.28 in October 2017 to 1.63 in November 2017. SEMO has a metric to resolve General Queries within 20 Working Days. These include queries received over the phone and e-mail.

Data and Settlement Queries generally continue to be responded to within the timelines required by the Trading and Settlement Code, i.e. one calendar month. No Formal Query timeline extensions were required during November 2017 with regard to formal Settlement Queries.

Disputes and Queries

5.1.1 Disputes

No disputes were raised during the month of November 2017.

Topic	Number Of Queries

Table 11– Upheld Dispute Queries by Topic

5.1.2 Data Queries

No formal data queries were raised during the month of November 2017.

Topic	Number Of Queries

Table 12– Upheld Data Queries by Topic

5.1.3 Settlement Queries

There were nine formal Settlement queries raised in November 2017. Seven queries were upheld and have since been resolved. One query was not upheld and one query is unresolved. There were a further two queries raised that were later withdrawn by the Participant.

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

Table 13 – Upheld Settlement Queries by Topic

- Three queries relating to SO-SO Trades were raised. These are to be corrected within M+4 resettlement. The three queries were deemed to be of Low Materiality.
- One query relating to Dispatch Instructions was raised. This is to be corrected within M+4 resettlement. The query was deemed to be of Low Materiality.
- Two queries relating to Meter Generation were raised. These are to be corrected within M+4 resettlement. The queries were deemed to be of Low Materiality.
- One query relating Meter Demand was raised. This is to be corrected within ad-hoc resettlement. The query was deemed to be of High Materiality.

Unresolved Queries

There is one unresolved settlement query as of the 14th December 2017.

A full list of all the Data and Settlement queries raised is contained in Appendix B.

Central Systems

6.1 Proportion of Default Data Used

On review of the Commercial Offer Data used in the MSP runs, 67.98% of data used was submitted by Participants through the normal Bid-Offer process. 32.02% of the data used was based on Standing Commercial Offer Data. 0.0% of the data used was based on adjusted offer data. None of the data used was based on Default Commercial Offer Data (Default differs from Standing in that it is based on the initial Default data submitted during registration process and not on more recent Standing Data submitted by the Participant through the Market Participant Interface). Details by unit are provided in [Appendix F](#).

6.2 Proportion of Estimated Meter Data used in Initial Settlement and Resettlement

This is not calculable presently.

6.3 List of System Errors and Re-runs

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

6.3.1 Re-Pricing / Resettlement Runs /MIUN Delays

There was 1 Re-Price carried out in November 2017 for Trade Date 21/07/2017.

There was 6 Ad hoc Re-Settlement runs carried out in November 2017.

There was a delay to the publication of WD1 MIUN's for Trade Date 03/11/2017.

6.3.2 System Errors

There was one Market Application defects found in November 2017.

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

6.4 Operational Timings

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

There are five run types for MSP software,

- Ex-Ante 1 Indicative, run on Trading Day – 1 calendar day,
- Ex-Ante 2 Indicative, run on Trading Day – 1 calendar day,
- With In Day 1 Indicative, run on Trading Day,
- Ex-Post Indicative, run on Trading Day + 1 calendar day, and
- Ex-Post Initial, run on Trading Day + 4 calendar days.

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

Ex Post Indicative (EP1) Market Schedule delayed for Trading Day's 28/11/2017, 29/11/2017 and 30/11/2017 due to a system issue.

1.4.1 MSP Postings November 2017

Process	On Time	< 1 hr late	> 1 hr late	Not done
Gate Close	30-30	0	0	0
Post EA1	30-30	0	0	0
Post EA2	30-30	0	0	0
Post WD1	30-30	0	0	0
Post EP1	27-30	3	0	0
Post EP2	30-30	0	0	0

Table 14 - Operational Timings

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

Table 15 - Operational Timings (% on time)

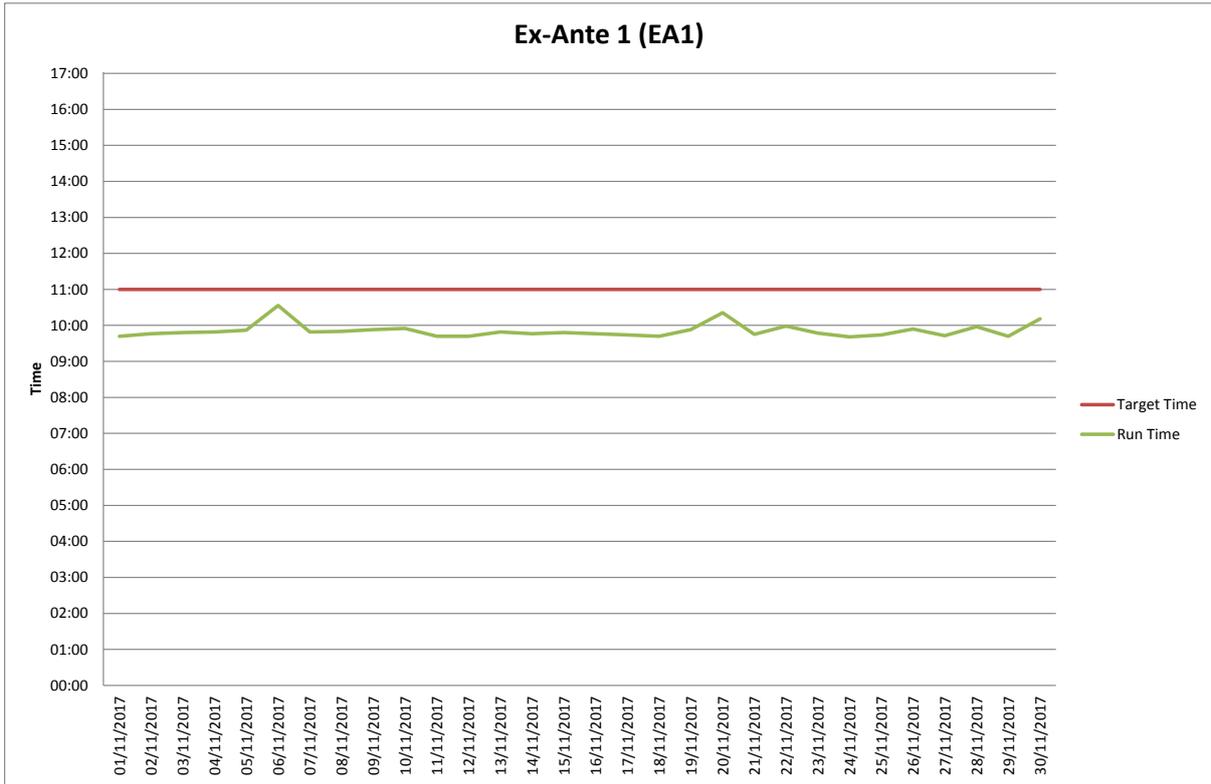


Figure 17 – Ex-Ante 1

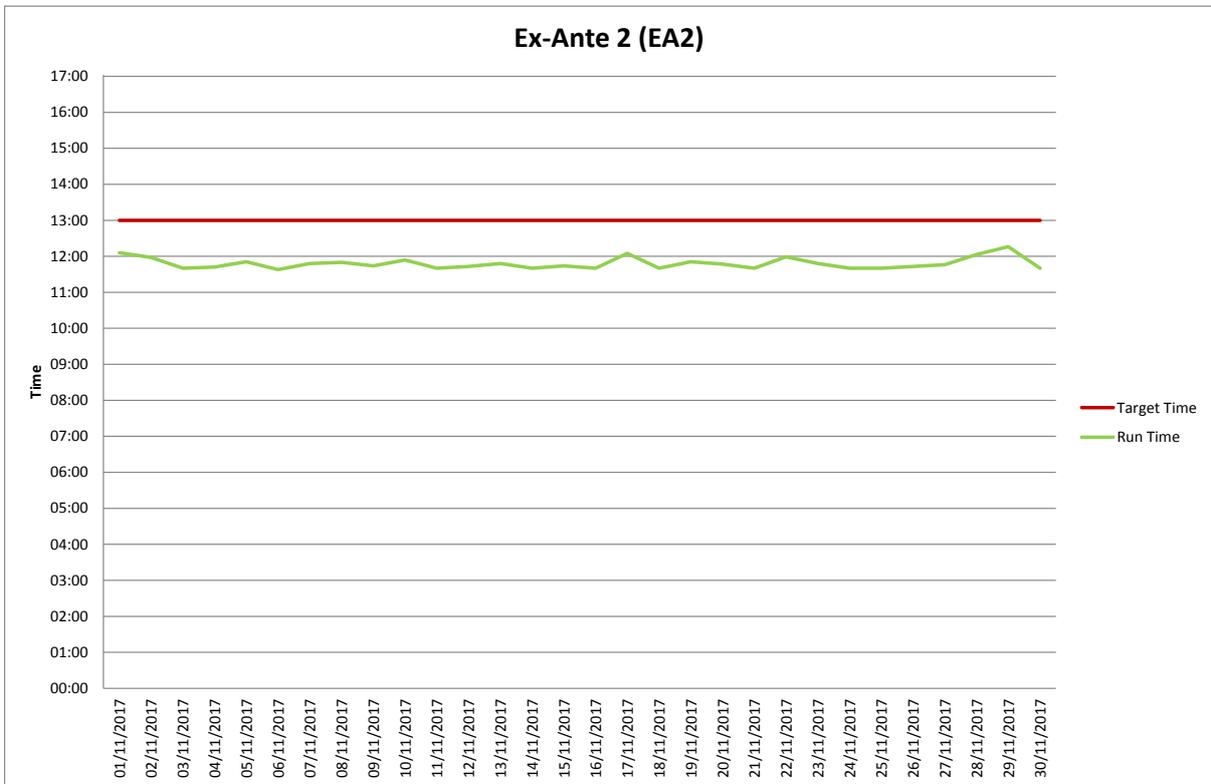


Figure 18 – Ex-Ante 2

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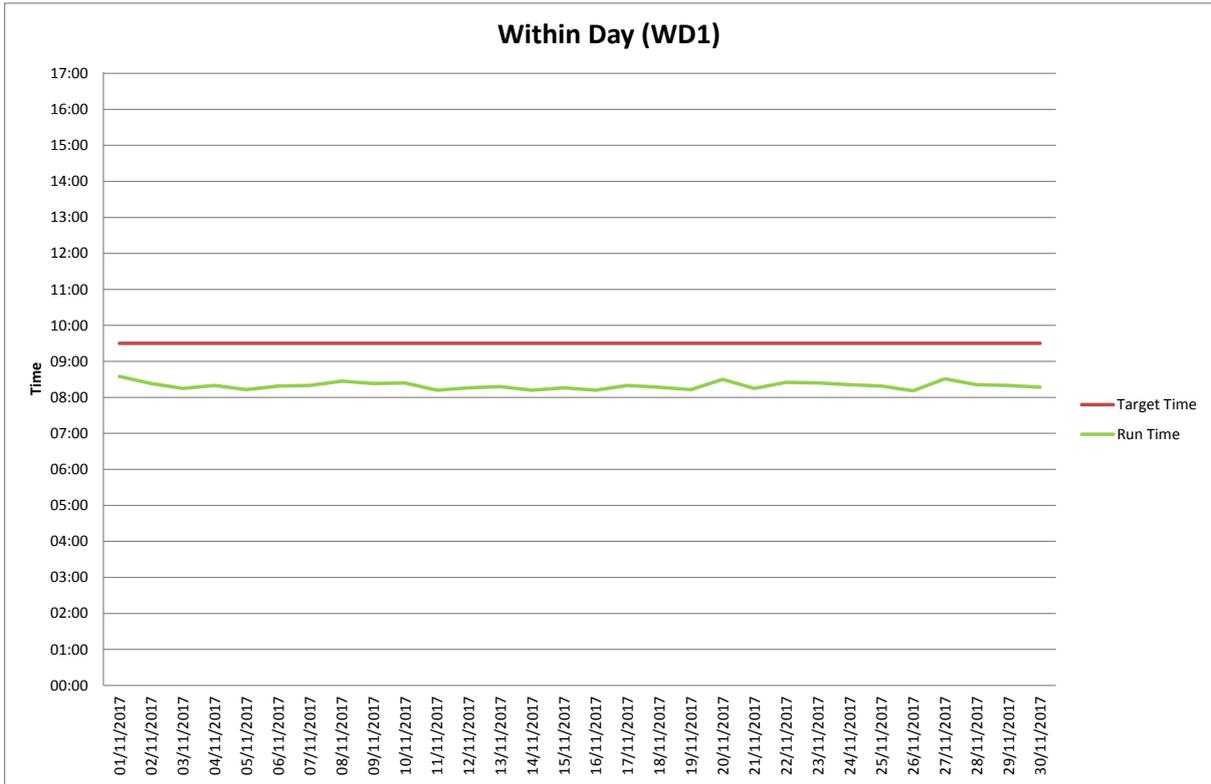


Figure 19 – Within Day 1

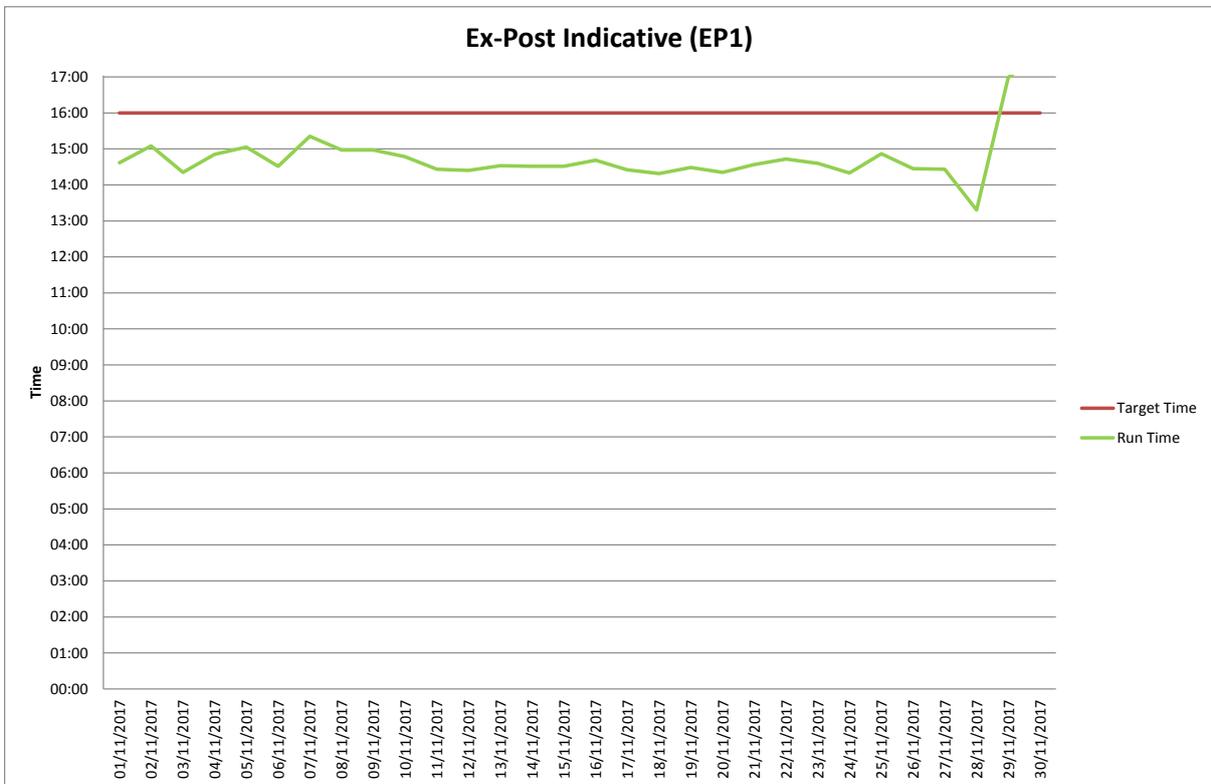


Figure 20 - Ex-Post Indicative

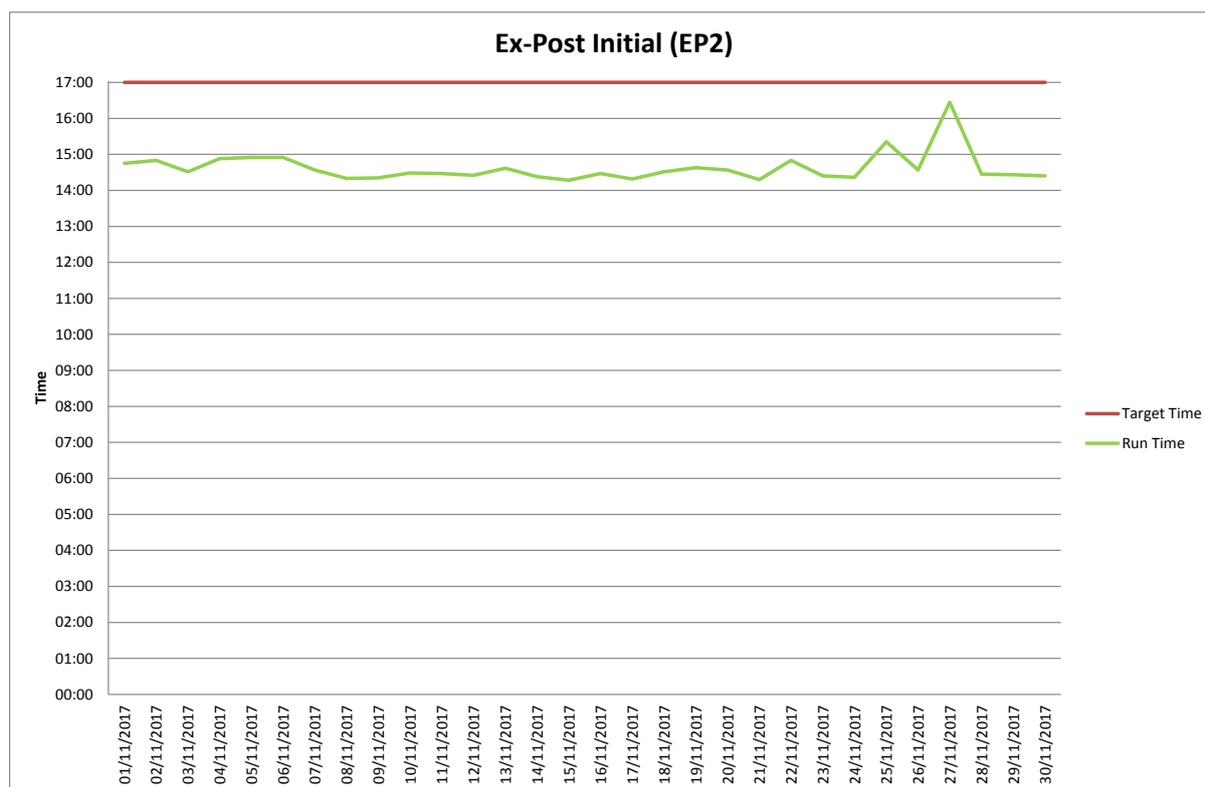


Figure 21 - Ex-Post Initial

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

6.4.2 MSP Algorithms

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

The primary solver used in the SEM is Lagrangian Relaxation (LR). Under certain schedule outcomes where a significant pricing event is observed, the MSP software is re-run using the Mixed Integer Programming (MIP) solver. The outcomes of the two solvers are compared. Where solution determined using the MIP solver provides a better overall solution, this solution maybe selected for publishing. An updated policy document on the use of MIP has been published and is available on the SEMO website [here](#).

In November 2017, there were 12 instances of publishing with the MIP solver. A detail of historical runs and dates where the MIP algorithm has been used for published results is provided in [Appendix I](#).

1.4.1 Settlement Postings November 2017

The publication timings for Settlement runs are provided below.

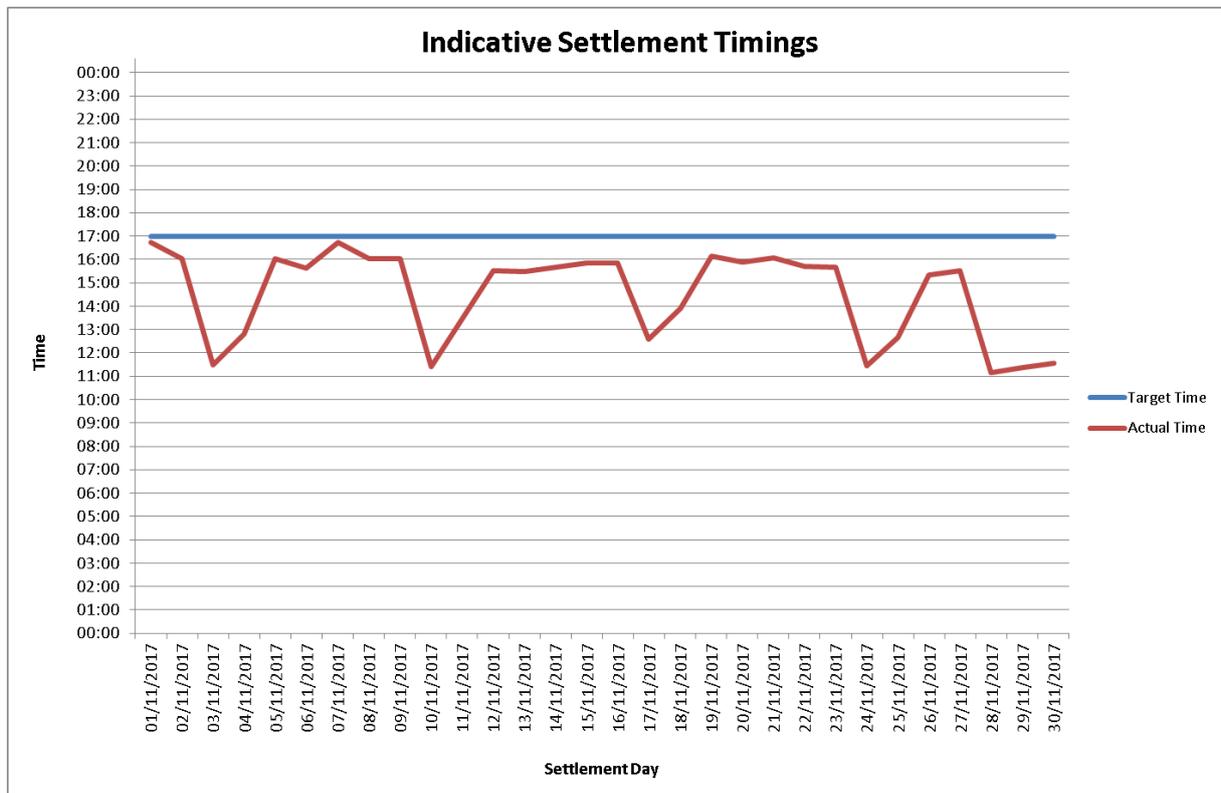


Figure 22 - Indicative Settlement Postings

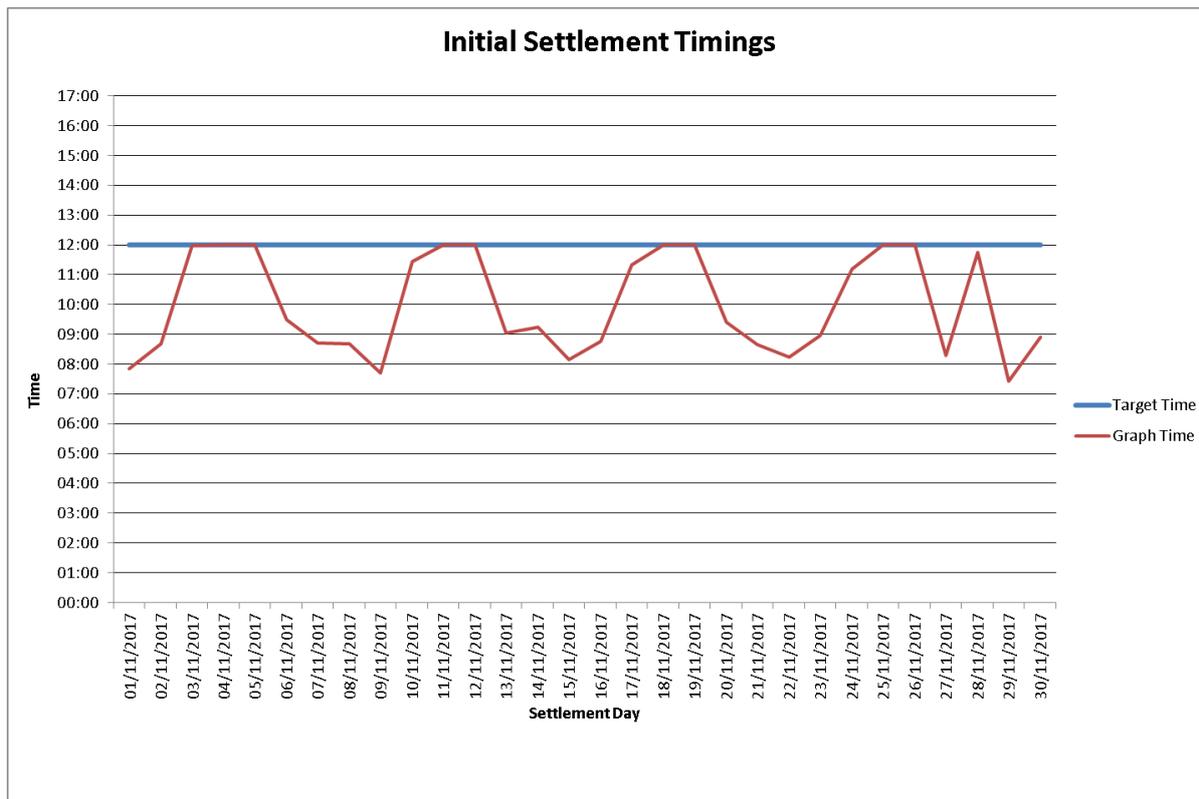


Figure 23 - Initial Settlement Postings

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

6.5. – No update for November 2017

Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

The Bi-Annual release took place in November 2017. Production 1 was flipped to Production 2

7.3 Communications or Systems Failures

There were on communication failures during November 2017.

7.4 Denial of Service Attacks

There was no Denial of Service Attacks during November 2017.

7.5 Submission of Parameters to RAs for Approval

The Annual Capacity Exchange Rate 2018 is due to be published in December and is being progressed.

Appendix A: Detail of Trading and Settlement Code Breaches

Data Provider

There were no issues to report in November 2017.

Market Participant

Copy Data Identified	Item Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach	Edit
03/11/2017	Money In	Timing	Participant	Payment Default	Dublin Waste to Energy Supply Limited (PT_400189) defaulted on a VMOC Week 42 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major	
03/11/2017	Money In	Timing	Participant	Payment Default	Activation Energy DSU (PT_400090) defaulted on a Capacity June 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major	
03/11/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Capacity September 2016 M+13 Invoice.	Participant Error	A default letter was issued to the Participant.	Major	
03/11/2017	Money In	Timing	Participant	Payment Default	ACTIVATION ENERGY DSU LTD (PT_500098) defaulted on a Capacity June 2017 M+4 Invoice.	Participant Error	A default letter was issued to the Participant.	Major	
08/11/2017	Money In	Timing	Participant	Payment Default	Cnoc Energy Supply Limited (PT_400140) defaulted on a Energy Week 43 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major	
10/11/2017	Money In	Timing	Participant	Payment	Powerhouse Generation (PT_500078) defaulted on an FMOC October 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major	
10/11/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 40 2016 M+13 Invoice.	Participant Error	A default letter was issued to the participant.	Major	
14/11/2017	Money In	Timing	Participant	Payment Default	Captured Carbon Ltd (PT_400168) defaulted on a Capacity October 2017 Initial Invoice.	Participant Error	A default letter was issued to the participant.	Major	
14/11/2017	Money In	Timing	Participant	Payment Default	Dan Twomey Waterpower Engineering Ltd (PT_400045) defaulted on a Capacity Week October 2017 Initial Invoice.	Participant Error	A default letter was issued to the participant.	Major	
15/11/2017	Money In	Timing	Participant	Payment Default	Electricity Exchange (PT_400116) defaulted on an Energy Week 28 2017 M+4 and on a Capacity August 2016 AdHoc Invoice.	Participant Error	A default letter was issued to the participant.	Major	
15/11/2017	Money In	Timing	Participant	Payment Default	ACTIVATION ENERGY DSU LTD (PT_500098) defaulted on a Capacity August 2016 AdHoc Invoice.	Participant Error	A default letter was issued to the participant.	Major	
22/11/2017	Money In	Timing	Participant	Payment Default	Arden Energy (PT_400149) defaulted on an Energy Week 45 2017 Initial Invoice.	Participant Error	A default letter was issued to the participant.	Major	
22/11/2017	Money In	Timing	Participant	Payment Default	Templederry Renewable Energy Supply Ltd (PT_400129) defaulted on an Energy Week 45 2017 Initial Invoice.	Participant Error	A default letter was issued to the participant.	Major	
22/11/2017	Money In	Timing	Participant	Payment Default	Activation Energy DSU (PT_500098) defaulted on an Week 42 2016 M+13 Invoice.	Participant Error	A default letter was issued to the participant.	Major	
29/11/2017	Money In	Timing	Participant	Payment Default	Arden Energy (PT_400149) defaulted on an Energy Week 46 2017 Initial Invoice.	Participant Error	A default letter was issued to the participant.	Major	
29/11/2017	Money In	n/s	Participant	Payment Default	Captured Carbon (PT_400168) defaulted on an Energy Week 46 2017 Initial Invoice.	Participant Error	A default letter was issued to the participant.	Major	
29/11/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on an Energy Week 43 2016 M+13 Invoice.	Participant Error	A default letter was issued to the participant.	Major	
29/11/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a Capacity October 2016 M+13 Invoice.	Participant Error	A default letter was issued to the participant.	Major	

Table 16 – Trading and Settlement Code Breaches – Market Participants

SEMO - Pricing and Scheduling

There were no issues to report in November 2017.

SEMO – Settlements

There were no issues to report in November 2017.

SEMO - Funds Transfer

There were no issues to report in November 2017.

SEMO - Credit Management

There were no issues to report in November 2017.

SEMO – Other

There were no issues to report in November 2017.

Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Meter Generation	GU_401940. Raheenleagh is missing meter generation data for the month of October 2017. The unit was generating. According to the MRSO the problem was that the annual DLAF upload, which happens from the 1st of October every year, didn't update for this wind farm. I would like to formally raise this query as I suspect that the value for each settlement period is greater than 750k and therefore an ad-hoc resettlement may be required.	F0075244	2017-11-08	2017-11-14	Settlement
Start Up Costs	TEL paid for a hot start instead of a warm start. 26 trading periods start and previous stop however this falls over the daylight savings time adjustment (2am) which may have caused SEMOs system to count 24 periods instead of 26.	F0075290	2017-11-10	2017-11-13	Settlement
SO-SO Trades	Incorrect SO costs submitted for EMC trade date 261017. As per attached spreadsheet please see the costs added in periods 9,2 through to 23,1	F0075333	2017-11-14	2017-12-05	Settlement
SO-SO Trades	Incorrect SO costs submitted for EMC trade date 270917. As per attached spreadsheet please see the costs added in periods 7, 1 and 6, 2.	F0075367	2017-11-15	2017-12-05	Settlement

Summary Title	Description	ID	Logged On	Date sent to MP	Type
SO-SO Trades	Incorrect SO costs submitted for Moyle NG 24410/17. As per attached spreadsheet please see the costs updated in periods 11,1 11,2 and 12,1	F0075368	2017-11-15	2017-12-05	Settlement
Dispatch Instructions	GU_400370 (W04). Periods 05:00 to 06:00, unit followed EDIL instructions of 105mw at 05:12 and 129mw at 05:30. Unit achieved these instructions quicker than dispatch instructions which incurred high imbalances. Can these dispatch instructions please be checked to see if they are correct. Secondly, there was a testing period between 12 and 16:30	F0075370	2017-11-15	2017-11-27	Settlement
Metered Generation	Updated Meter Data for calendar / settlement 23/07/17 for GU_501130 (POWVER AGU) Metering sent to SEMO on 15/11/17 Variable name: MG_GU_501130 Quantity due(MW) 0.965 These values have been submitted to SEMO on 15/11/17 and are an update to the previous values submitted on 28/07/17. Please use these values for next settlement of this day. Please assess materiality of this change and let SONI know when a resubmission of Actual Availabilities and Dispatch Instructions will be required.	F0075380	2017-11-16	2017-11-16	Settlement
Metered Demand	Incorrect MD sent to SEMO by NIE for PT_500056/SU_500075. This will impact energy settlement for 16/11/2017 / billing week 46 2017 and Capacity Settlement for November 2017	F0075544	2017-11-16	2017-11-30	Settlement
0	Following receipt of SSE Airtricity Ltd Energy invoices for 15/11/17 to 17/11/17 it reported the En payments for GU_401990 are different from expected. The site was on compensated outage from 15/11/17 to 17/11/17 Eirgrid in agreement with the asset manager was submitting availability profile and windfarm constraints on their behalf to the SEM. Unfortunately there was an issue in this process as we have not received the expected energy payments. The market has provided minimal payment for 15 - 17 November 2017. We wish for this to be corrected in time to minimize the affect our Nov 2017 Capacity invoice due in Dec 2017. PT_400021 GU_401990 effect on charges ENPEX 15 - 17 Nov 2017 was calculated as 0.087MW. Availability Profile totals 15-17 Nov 2090.09 mw. Using the relevant TLAFs and SMPs the monetary impact of the uncompensated outage period is calculated in the region of 51,000EUR.	F0075572	2017-11-28	N/A	Settlement
0	Following receipt of SSE Airtricity Ltd Energy invoices for 15/11/17 to 17/11/17 it reported the En payments for GU_401960 are different from expected. The site was on compensated outage from 15/11/17 to 17/11/17 Eirgrid in agreement with the asset manager was submitting availability profile and windfarm constraints on their behalf to the SEM. Unfortunately there was an issue in this process as we have not received the expected energy payments. The market has provided minimal payment for 15 - 17 November 2017. We wish for this to be corrected in time to minimize the affect our Nov 2017 Capacity invoice due in Dec 2017. PT_400021 GU_401960 effect on charges ENPEX 15 - 17 Nov 2017 was calculated as 0.059MW. Availability Profile totals 15-17 Nov 1273.03 mw. Using the relevant TLAFs and SMPs the monetary impact of the uncompensated outage period is calculated in the region of 31,000EUR.	F0075573	2017-11-28	N/A	Settlement
Actual Availabilities	Garvagh Windfarm Phase 1, GU_400950, and Garvagh Windfarm Phase 2, GU_400940, were outturn available on 07/11/2017. As part of this process wind forecast availabilities should have been sent as ACTA values. This process was not executed correctly and as a result updated ACTAs are to be sent.	F0075642	2017-11-30		Settlement

Table 17- Formal Queries

Appendix C: List of All System Errors and Failures

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

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

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

There was one Market Application defect found in November 2017.

Issue No.	Description	Effect	Fixed from	Re-Pricing	Resettlement	Status
1	DSI Failure in EP1 Run	EP1 Failure	29/11	-	-	-

Table 18 - List of System Errors and Failures

Appendix D: Details of Operational Timings

Market Schedule and Price Runs

Operational Day	EA1 Postings		EA2 Postings			WD1 Postings			EP1 Postings		EP2 Postings		
	Target	Actual	Target	Actual	Actual	Target	Actual	Actual	Target	Actual	Target	Actual	Actual
01/11/2017	11:00	09:42	13:00	12:06	09:30	08:35	16:00	14:37	17:00	14:45			
02/11/2017	11:00	09:46	13:00	11:58	09:30	08:23	16:00	15:05	17:00	14:50			
03/11/2017	11:00	09:48	13:00	11:40	09:30	08:15	16:00	14:21	17:00	14:31			
04/11/2017	11:00	09:49	13:00	11:42	09:30	08:20	16:00	14:51	17:00	14:53			
05/11/2017	11:00	09:52	13:00	11:51	09:30	08:13	16:00	15:03	17:00	14:55			
06/11/2017	11:00	10:33	13:00	11:38	09:30	08:19	16:00	14:31	17:00	14:55			
07/11/2017	11:00	09:49	13:00	11:48	09:30	08:20	16:00	15:21	17:00	14:34			
08/11/2017	11:00	09:50	13:00	11:50	09:30	08:27	16:00	14:58	17:00	14:20			
09/11/2017	11:00	09:53	13:00	11:44	09:30	08:23	16:00	14:58	17:00	14:21			
10/11/2017	11:00	09:55	13:00	11:54	09:30	08:24	16:00	14:47	17:00	14:29			
11/11/2017	11:00	09:42	13:00	11:40	09:30	08:12	16:00	14:26	17:00	14:28			
12/11/2017	11:00	09:42	13:00	11:43	09:30	08:16	16:00	14:24	17:00	14:25			
13/11/2017	11:00	09:49	13:00	11:48	09:30	08:18	16:00	14:32	17:00	14:37			
14/11/2017	11:00	09:46	13:00	11:40	09:30	08:12	16:00	14:31	17:00	14:23			
15/11/2017	11:00	09:48	13:00	11:44	09:30	08:16	16:00	14:31	17:00	14:17			
16/11/2017	11:00	09:46	13:00	11:40	09:30	08:12	16:00	14:41	17:00	14:28			
17/11/2017	11:00	09:44	13:00	12:05	09:30	08:20	16:00	14:25	17:00	14:19			
18/11/2017	11:00	09:42	13:00	11:40	09:30	08:17	16:00	14:19	17:00	14:31			
19/11/2017	11:00	09:53	13:00	11:51	09:30	08:13	16:00	14:29	17:00	14:38			
20/11/2017	11:00	10:21	13:00	11:47	09:30	08:30	16:00	14:21	17:00	14:34			
21/11/2017	11:00	09:45	13:00	11:40	09:30	08:15	16:00	14:34	17:00	14:18			
22/11/2017	11:00	09:59	13:00	11:59	09:30	08:25	16:00	14:43	17:00	14:50			
23/11/2017	11:00	09:47	13:00	11:48	09:30	08:24	16:00	14:36	17:00	14:24			
24/11/2017	11:00	09:41	13:00	11:40	09:30	08:21	16:00	14:20	17:00	14:22			
25/11/2017	11:00	09:44	13:00	11:40	09:30	08:19	16:00	14:52	17:00	15:21			
26/11/2017	11:00	09:54	13:00	11:43	09:30	08:11	16:00	14:27	17:00	14:34			
27/11/2017	11:00	09:43	13:00	11:46	09:30	08:31	16:00	14:26	17:00	16:27			
28/11/2017	11:00	09:58	13:00	12:03	09:30	08:21	16:00	13:18	17:00	14:27			
29/11/2017	11:00	09:42	13:00	12:16	09:30	08:20	16:00	16:59	17:00	14:26			
30/11/2017	11:00	10:11	13:00	11:40	09:30	08:17	16:00	17:39	17:00	14:24			
01/12/2017	11:00	09:53	13:00	12:11	09:30	08:13	16:00	14:27	17:00	14:29			

Table 19 – MSP Runs

Settlement Runs

Indicative				Initial			
Trading	Actual	Target	Actual	Trading	Actual	Target	Actual
Day	Date	Time	Time	Day	Date	Time	Time
01/11/2017	02/11/2017	17:00	16:43	01/11/2017	08/11/2017	12:00	07:50
02/11/2017	03/11/2017	17:00	16:01	02/11/2017	09/11/2017	12:00	08:41
03/11/2017	06/11/2017	17:00	11:29	03/11/2017	10/11/2017	12:00	11:58
04/11/2017	06/11/2017	17:00	12:49	04/11/2017	10/11/2017	12:00	12:00
05/11/2017	06/11/2017	17:00	16:02	05/11/2017	10/11/2017	12:00	12:00
06/11/2017	07/11/2017	17:00	15:38	06/11/2017	13/11/2017	12:00	09:30
07/11/2017	08/11/2017	17:00	16:44	07/11/2017	14/11/2017	12:00	08:43
08/11/2017	09/11/2017	17:00	16:03	08/11/2017	15/11/2017	12:00	08:41
09/11/2017	10/11/2017	17:00	16:01	09/11/2017	16/11/2017	12:00	07:43
10/11/2017	13/11/2017	17:00	11:24	10/11/2017	17/11/2017	12:00	11:27
11/11/2017	13/11/2017	17:00	13:28	11/11/2017	17/11/2017	12:00	12:00
12/11/2017	13/11/2017	17:00	15:31	12/11/2017	17/11/2017	12:00	12:00
13/11/2017	14/11/2017	17:00	15:29	13/11/2017	20/11/2017	12:00	09:03
14/11/2017	15/11/2017	17:00	15:39	14/11/2017	21/11/2017	12:00	09:15
15/11/2017	16/11/2017	17:00	15:50	15/11/2017	22/11/2017	12:00	08:10
16/11/2017	17/11/2017	17:00	15:50	16/11/2017	23/11/2017	12:00	08:46
17/11/2017	20/11/2017	17:00	12:35	17/11/2017	24/11/2017	12:00	11:20
18/11/2017	20/11/2017	17:00	13:54	18/11/2017	24/11/2017	12:00	12:00
19/11/2017	20/11/2017	17:00	16:08	19/11/2017	24/11/2017	12:00	12:00
20/11/2017	21/11/2017	17:00	15:53	20/11/2017	27/11/2017	12:00	09:25
21/11/2017	22/11/2017	17:00	16:05	21/11/2017	28/11/2017	12:00	08:39
22/11/2017	23/11/2017	17:00	15:43	22/11/2017	29/11/2017	12:00	08:15
23/11/2017	24/11/2017	17:00	15:41	23/11/2017	30/11/2017	12:00	08:58
24/11/2017	27/11/2017	17:00	11:28	24/11/2017	01/12/2017	12:00	11:12
25/11/2017	27/11/2017	17:00	12:40	25/11/2017	01/12/2017	12:00	12:00
26/11/2017	27/11/2017	17:00	15:21	26/11/2017	01/12/2017	12:00	12:00
27/11/2017	28/11/2017	18:00	15:31	27/11/2017	04/12/2017	12:00	08:17
28/11/2017	04/12/2017	19:00	11:10	28/11/2017	05/12/2017	12:00	11:45
29/11/2017	04/12/2017	20:00	11:23	29/11/2017	06/12/2017	12:00	07:26
30/11/2017	04/12/2017	21:00	11:34	30/11/2017	07/12/2017	12:00	08:55

Table 20 – Settlement Runs

Appendix E: Imperfections Charge

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

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

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

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

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

18/11/2017	€641,678.53	-€12,312.51	-€483,698.00
19/11/2017	€681,550.58	-€210.80	-€457,825.35
20/11/2017	€690,457.41	-€9,436.02	-€502,410.50
21/11/2017	€881,388.63	-€14,900.47	-€505,386.09
22/11/2017	€814,158.91	€21,134.19	-€530,166.05
23/11/2017	€765,003.37	€1,455.10	-€522,381.63
24/11/2017	€746,628.87	-€23,375.05	-€540,392.09
25/11/2017	€727,927.70	-€32,238.40	-€482,715.14
26/11/2017	€1,026,529.88	-€52,461.86	-€463,393.98
27/11/2017	€668,953.92	€8,690.26	-€514,024.06
28/11/2017	€668,857.78	-€23,316.60	-€530,834.78
29/11/2017	€672,507.63	€17,955.74	-€545,922.34
30/11/2017	€873,915.32	-€22,024.34	-€545,436.84

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

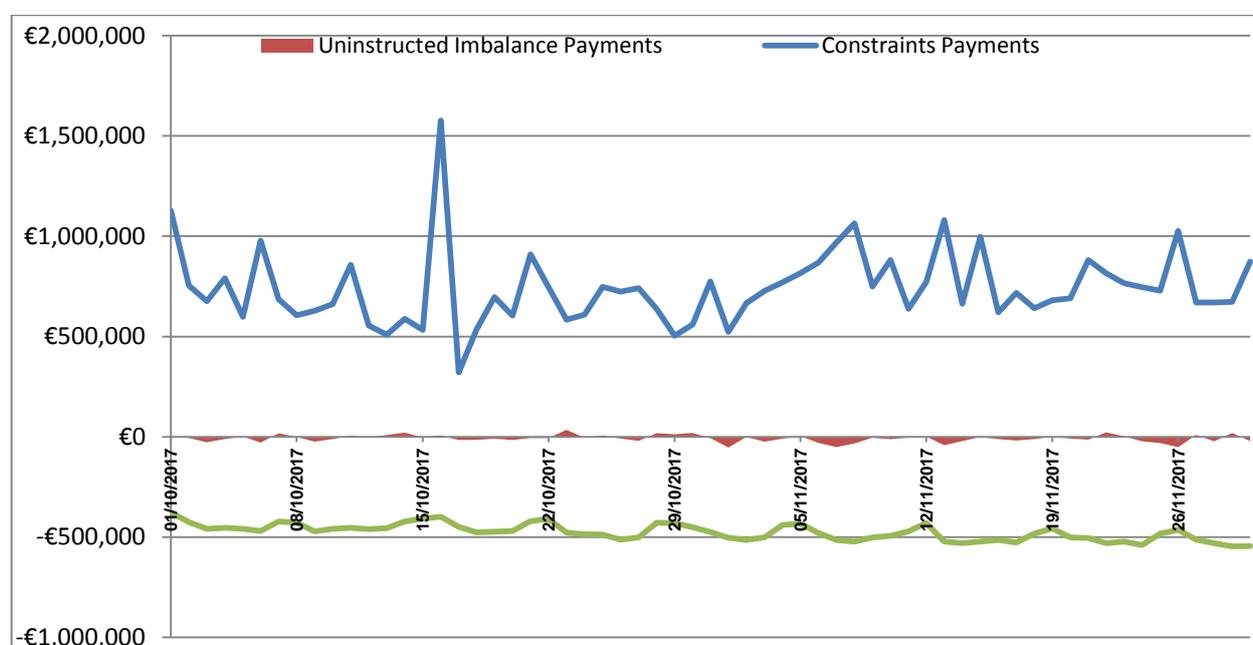


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

Week No	Make Whole Payments
40	€250,374.71
41	€83,919.38
42	€25,546.52
43	€167,868.48
44	€30,640.51
45	€178,465.56
46	€145,307.99
47	€77,955.85

Table 22 - Make Whole Payments

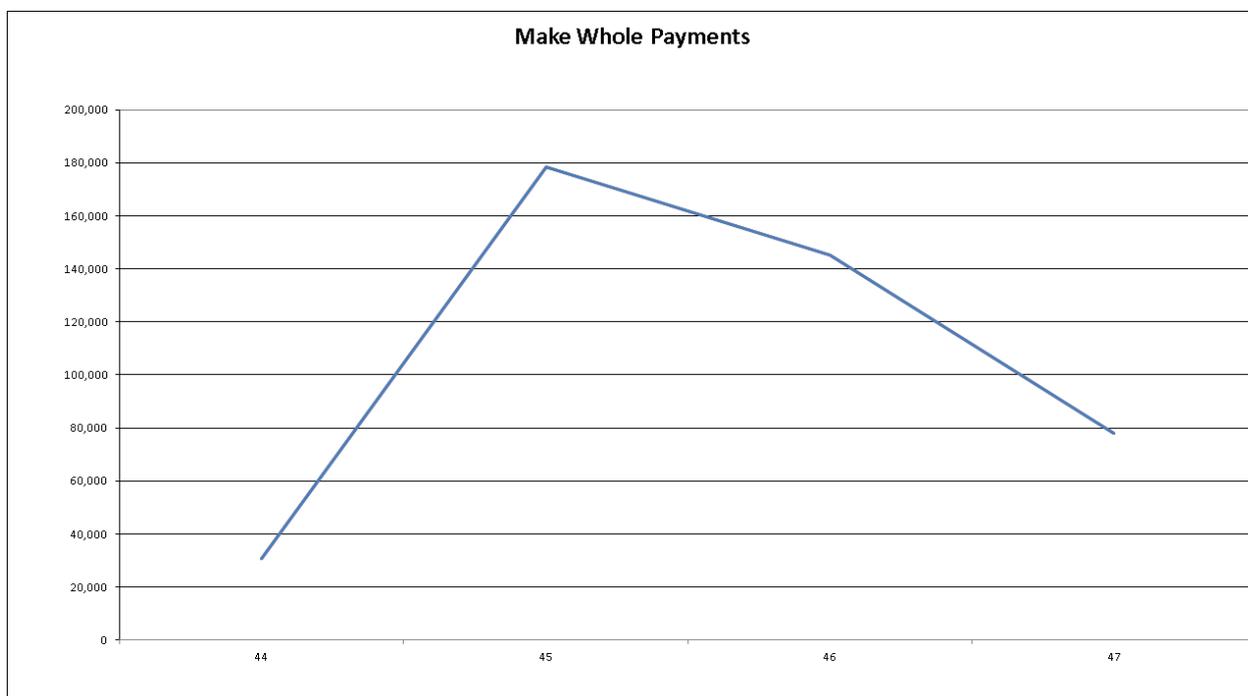


Figure 25 - Make Whole Payments

Week No	Testing Charges
40	-€47,420.09
41	-€31,943.73
42	-€37,408.75
43	-€44,370.66
44	-€31,520.74
45	-€1,129.07
46	€0.00

47	-€31,615.34
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Table 23 - Testing Charges



Figure 26 - Testing Charges

Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during November 2017 where the Commercial Offer Data was based on a Participant submission within the Market window, or based on Standing Data or Default Data submitted.

PNAME	RNAME	Manual	Adjusted	Standing	COUNT
PT_400090	DSU_401270	12			12
PT_400106	DSU_401330	30			30
PT_400111	DSU_401390	19			19
PT_400116	DSU_401400	16			16
PT_400124	DSU_401490	30			30
PT_400138	DSU_401590	30			30
PT_400090	DSU_401610	18			18
PT_400090	DSU_401620	13			13
PT_400138	DSU_402040	30			30
PT_400116	DSU_402100	16			16
PT_500067	DSU_501380	30			30
PT_500099	DSU_501460	24			24
PT_500105	DSU_501510	8			8
PT_400024	GU_400120	30			30
PT_400024	GU_400121	30			30
PT_400030	GU_400180	36			36
PT_400030	GU_400181	36			36
PT_400030	GU_400182	36			36
PT_400030	GU_400183	36			36
PT_400030	GU_400200	34			34
PT_400030	GU_400201	34			34
PT_400030	GU_400202	36			36
PT_400030	GU_400203	34			34
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	35			35
PT_400030	GU_400281	34			34
PT_400030	GU_400290	34			34
PT_400030	GU_400300	36			36
PT_400030	GU_400311	36			36
PT_400030	GU_400324	36			36
PT_400030	GU_400325	36			36
PT_400030	GU_400360	34			34
PT_400030	GU_400361	34			34

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PT_400030	GU_400362	34		34
PT_400030	GU_400363	34		34
PT_400030	GU_400370	34		34
PT_400032	GU_400430	30		30
PT_400035	GU_400480	51		51
PT_400037	GU_400500	30		30
PT_400041	GU_400530	64		64
PT_400044	GU_400540	51		51
PT_400054	GU_400620	30		30
PT_400055	GU_400630	30		30
PT_400064	GU_400750	30		30
PT_400064	GU_400751	30		30
PT_400064	GU_400752	30		30
PT_400064	GU_400753	30		30
PT_400064	GU_400762	30		30
PT_400064	GU_400770	30		30
PT_400064	GU_400771	30		30
PT_400064	GU_400780	30		30
PT_400064	GU_400781	30		30
PT_400030	GU_400850	35		35
PT_400075	GU_400930	37		37
PT_400034	GU_400940	30		30
PT_400077	GU_400950	30		30
PT_400078	GU_401010	31		31
PT_400078	GU_401011	31		31
PT_400034	GU_401090	30		30
PT_400034	GU_401440	30		30
PT_400034	GU_401680	30		30
PT_400165	GU_401840	30		30
PT_400172	GU_401860	31		31
PT_400021	GU_401990	8		8
PT_400198	GU_402030	31		31
PT_500024	GU_500040	37		37
PT_500024	GU_500041	32		32
PT_500027	GU_500130	86		86
PT_500027	GU_500131	86		86
PT_500027	GU_500140	86		86
PT_500040	GU_500281	60		60
PT_500040	GU_500282	60		60
PT_500040	GU_500283	30		30
PT_500040	GU_500284	30		30
PT_500045	GU_500820	30		30
PT_500045	GU_500821	30		30
PT_500045	GU_500822	30		30
PT_500045	GU_500823	30		30
PT_500045	GU_500824	30		30
PT_500045	GU_500825	30		30
PT_500048	GU_500904	47		47
PT_500050	GU_501040	30		30
PT_500050	GU_501050	30		30
PT_500053	GU_501130	30		30
PT_500050	GU_501150	30		30
PT_500050	GU_501190	30		30

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PT_500066	GU_501210	30		30
PT_500034	GU_501350	30		30
PT_500050	GU_501430	11		11
PT_500050	GU_501440	31		31
PT_500021	GU_501520	1		1
PT_500110	GU_501580	10		10
PT_500021	GU_501620	8		8
PT_500021	GU_501630	8		8
PT_500024	I_NIMOYLE	30		30
PT_500031	I_NIMOYLE	30		30
PT_500037	I_NIMOYLE	29		29
PT_500081	I_NIMOYLE	52		52
PT_500070	I_NIMOYLE	65		65
PT_500092	I_NIMOYLE	69		69
PT_500085	I_NIMOYLE	45		45
PT_500083	I_NIMOYLE	86		86
PT_500075	I_NIMOYLE	87		87
PT_500069	I_NIMOYLE	89		89
PT_500107	I_NIMOYLE	1		1
PT_500120	I_NIMOYLE	41		41
PT_400164	I_ROIEWIC	45		45
PT_400099	I_ROIEWIC	31		31
PT_400030	I_ROIEWIC	30		30
PT_400201	I_ROIEWIC	40		40
PT_400163	I_ROIEWIC	88		88
PT_400157	I_ROIEWIC	51		51
PT_400096	I_ROIEWIC	88		88
PT_400168	I_ROIEWIC	63		63
PT_400136	I_ROIEWIC	89		89
PT_400188	I_ROIEWIC	7		7
PT_400115	I_ROIEWIC	30		30
PT_400108	I_ROIEWIC	67		67
PT_400171	I_ROIEWIC	69		69
PT_400090	DSU_401270		18	18
PT_400111	DSU_401390		12	12
PT_400116	DSU_401400		14	14
PT_400124	DSU_401490		1	1
PT_400133	DSU_401530		30	30
PT_400090	DSU_401610		12	12
PT_400090	DSU_401620		17	17
PT_400144	DSU_401660		30	30
PT_400090	DSU_401800		30	30
PT_400090	DSU_401850		30	30
PT_400116	DSU_401870		30	30
PT_400124	DSU_401880		30	30
PT_400133	DSU_401910		30	30
PT_400116	DSU_402090		30	30
PT_400116	DSU_402100		14	14
PT_400116	DSU_402120		30	30
PT_500064	DSU_501200		30	30
PT_500078	DSU_501330		30	30
PT_500098	DSU_501450		30	30
PT_500099	DSU_501460		6	6

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PT_500105	DSU_501510			22	22
PT_500108	DSU_501560			30	30
PT_400021	GU_400021			30	30
PT_400021	GU_400050			30	30
PT_400021	GU_400060			30	30
PT_400021	GU_400070			30	30
PT_400021	GU_400080			30	30
PT_400025	GU_400130			30	30
PT_400032	GU_400430			1	1
PT_400037	GU_400500			2	2
PT_400038	GU_400550			30	30
PT_400021	GU_400591			30	30
PT_400021	GU_400600			30	30
PT_400054	GU_400620			1	1
PT_400055	GU_400630			1	1
PT_400050	GU_400650			30	30
PT_400050	GU_400660			30	30
PT_400062	GU_400730			30	30
PT_400062	GU_400731			30	30
PT_400062	GU_400840			30	30
PT_400021	GU_400910			30	30
PT_400021	GU_400920			30	30
PT_400034	GU_400940			1	1
PT_400077	GU_400950			1	1
PT_400050	GU_401000			30	30
PT_400050	GU_401060			30	30
PT_400021	GU_401080			30	30
PT_400034	GU_401090			1	1
PT_400082	GU_401100			30	30
PT_400050	GU_401150			30	30
PT_400087	GU_401230			30	30
PT_400050	GU_401240			30	30
PT_400050	GU_401250			30	30
PT_400050	GU_401280			30	30
PT_400050	GU_401290			30	30
PT_400050	GU_401360			30	30
PT_400021	GU_401380			30	30
PT_400034	GU_401440			1	1
PT_400066	GU_401540			30	30
PT_400021	GU_401640			30	30
PT_400034	GU_401680			1	1
PT_400148	GU_401690			30	30
PT_400150	GU_401700			30	30
PT_400152	GU_401710			30	30
PT_400152	GU_401720			30	30
PT_400152	GU_401730			30	30
PT_400152	GU_401740			30	30
PT_400152	GU_401750			30	30
PT_400152	GU_401760			30	30
PT_400151	GU_401770			30	30
PT_400151	GU_401780			30	30
PT_400050	GU_401790			30	30
PT_400066	GU_401820			30	30

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PT_400162	GU_401830			30	30
PT_400178	GU_401900			30	30
PT_400050	GU_401920			30	30
PT_400050	GU_401930			30	30
PT_400021	GU_401960			30	30
PT_400021	GU_401990			23	23
PT_400050	GU_402010			30	30
PT_400197	GU_402020			30	30
PT_500021	GU_500010			30	30
PT_500024	GU_500040			1	1
PT_500032	GU_500211			30	30
PT_500039	GU_500270			30	30
PT_500044	GU_500720			30	30
PT_500021	GU_500740			30	30
PT_500047	GU_500790			30	30
PT_500050	GU_501040			1	1
PT_500050	GU_501050			1	1
PT_500032	GU_501120			30	30
PT_500050	GU_501150			1	1
PT_500021	GU_501160			30	30
PT_500061	GU_501170			30	30
PT_500062	GU_501180			30	30
PT_500050	GU_501190			1	1
PT_500066	GU_501210			1	1
PT_500073	GU_501230			30	30
PT_500074	GU_501250			30	30
PT_500032	GU_501280			30	30
PT_500032	GU_501290			30	30
PT_500032	GU_501300			30	30
PT_500089	GU_501360			30	30
PT_500032	GU_501400			30	30
PT_500050	GU_501440			1	1
PT_500021	GU_501500			30	30
PT_500021	GU_501520			29	29
PT_500032	GU_501530			30	30
PT_500032	GU_501540			30	30
PT_500032	GU_501570			30	30
PT_500021	GU_501620			23	23
PT_500021	GU_501630			23	23
	Total	4718	0	2222	6940
	Percentage	67.98%	0.00%	32.02%	100.00%

Table 24 – Commercial Offer Data Used

Appendix G: Total Charges and Payments Data

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

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

Market		Energy	Capacity	Market Operator	M+4 Energy	M+4 Capacity	M+4 Market Operator	M+13 Energy	M+13 Capacity	M+13 Market Operator	Ad-hoc Energy	Ad-hoc Capacity	Ad-hoc Market Operator	Total
Jun-16	ROI	£68,417,749.71	£27,553,403.45	£786,234.64	£143,736.91	£161,777.77	£822.69	£56,371.33	£22,936.28	£671.74	£0.00	£0.00	£0.00	97,143,704.52
	NI	£26,623,159.66	£8,331,870.29	£208,457.12	£84,873.05	£12,863.18	£479.73	£65,781.22	£10,545.70	£290.27	£0.00	£0.00	£0.00	35,338,320.22
Jul-16	ROI	£57,935,825.17	£17,094,463.29	£1,471,499.46	£416,561.74	£228,953.88	£5,030.22	£478,630.27	£28,077.61	£475.98	£105,568.09	£0.00	£0.00	77,765,085.71
	NI	£21,413,999.73	£4,706,369.93	£356,309.07	£111,802.15	£87,327.04	£1,297.05	£47,648.29	£20,761.72	£299.44	£20,454.46	£0.00	£0.00	26,766,268.88
Aug-16	ROI	£53,990,805.17	£17,305,691.08	£1,082,679.75	£206,642.80	£45,575.08	£1,900.74	£45,391.41	£12,311.23	£322.89	£0.00	£0.00	£0.00	72,691,320.15
	NI	£13,463,141.18	£3,676,029.87	£272,060.88	£22,683.94	£6,912.45	£294.54	£2,906.60	£2,273.87	£18.25	£0.00	£0.00	£0.00	17,446,321.58
Sep-16	ROI	£60,365,808.65	£17,305,691.08	£1,381,850.46	£313,754.10	£83,238.29	£3,816.76	£47,911.41	£8,968.97	£354.53	£0.00	£2,861.23	£0.00	79,514,255.48
	NI	£17,693,943.87	£3,676,029.87	£349,566.95	£32,666.66	£7,720.07	£412.92	£4,847.16	£1,188.42	£33.50	£0.00	£532.20	£0.00	21,766,941.62
Oct-16	ROI	£64,937,764.02	£20,215,673.79	£813,429.31	£334,853.66	£96,213.40	£3,776.71	£47,334.32	£14,216.75	£359.61	£0.00	£0.00	£0.00	86,463,621.57
	NI	£25,730,620.36	£4,935,559.58	£220,252.61	£81,663.62	£17,690.00	£978.05	£11,878.35	£2,104.44	£85.45	£0.00	£0.00	£0.00	31,000,832.46
Nov-16	ROI	£79,083,041.86	£26,426,844.27	£746,953.39	£256,783.77	£97,150.99	£3,451.80	£77,643.02	£35,169.15	£618.36	£325,964.05	£0.00	£0.00	107,053,620.66
	NI	£30,128,634.39	£6,448,578.49	£206,907.51	£173,676.38	£60,271.90	£2,148.44	£42,708.63	£23,836.40	£422.17	£834.57	£0.00	£0.00	37,088,078.88
Dec-16	ROI	£91,892,862.67	£27,754,182.60	£986,254.46	£431,619.50	£110,272.39	£6,055.55	£98,070.16	£32,223.23	£1,076.34	£505,299.63	£0.00	£0.00	121,817,916.53
	NI	£33,787,693.11	£6,963,652.60	£260,893.62	£238,761.61	£53,464.74	£2,658.52	£27,575.46	£12,836.78	£304.21	£775.23	£0.00	£0.00	41,348,615.88
Jan-17	ROI	£71,678,885.81	£27,768,345.87	£756,389.76	£157,498.92	£96,027.36	£2,212.62	£63,104.42	£38,920.56	£719.17	£0.00	£0.00	£0.00	100,562,104.49
	NI	£24,623,245.15	£6,418,062.31	£203,136.05	£105,611.21	£32,330.86	£1,272.30	£50,004.40	£12,723.31	£166.24	£0.00	£0.00	£0.00	31,446,551.83
Feb-17	ROI	£68,417,749.71	£27,553,403.45	£786,234.64	£143,736.91	£161,777.77	£822.69	£56,371.33	£22,936.28	£671.74	£0.00	£0.00	£0.00	97,143,704.52
	NI	£26,623,159.66	£8,331,870.29	£208,457.12	£84,873.05	£12,863.18	£479.73	£65,781.22	£10,545.70	£290.27	£0.00	£0.00	£0.00	35,338,320.22
Mar-17	ROI	£66,590,904.20	£25,939,739.73	£896,638.56	£530,904.65	£113,905.95	£3,188.17	£40,679.29	£13,853.63	£638.11	£0.00	£0.00	£0.00	94,190,452.29
	NI	£27,088,752.15	£8,001,218.02	£232,052.21	£72,287.75	£14,630.37	£409.39	£46,677.74	£14,276.96	£577.22	£0.00	£0.00	£0.00	35,470,881.81
Apr-17	ROI	£56,165,195.56	£24,426,665.10	£727,000.54	£536,698.08	£142,324.28	£3,531.15	£45,125.24	£18,620.07	£596.12	£0.00	£0.00	£0.00	82,065,756.14
	NI	£17,358,282.80	£7,584,088.13	£179,414.93	£127,102.29	£27,651.79	£859.38	£60,044.36	£25,589.38	£801.90	£0.00	£0.00	£0.00	25,363,834.96
May-17	ROI	£44,648,195.71	£19,781,317.86	£700,841.87	£489,950.65	£142,425.65	£2,974.84	£51,455.64	£17,883.26	£699.50	£0.00	£0.00	£0.00	65,835,744.98
	NI	£16,964,613.24	£5,548,133.24	£169,862.58	£108,402.43	£29,733.84	£622.87	£88,001.70	£33,781.45	£1,179.59	£0.00	£0.00	£0.00	22,944,330.94
Jun-17	ROI	£50,996,714.24	£18,508,982.13	£841,895.70	£869,713.90	£198,750.84	£4,934.88	£65,063.85	£16,276.93	£866.44	£0.00	£0.00	£0.00	71,503,198.91
	NI	£18,134,740.54	£5,385,407.39	£213,872.53	£138,837.43	£30,982.10	£823.10	£148,093.71	£42,384.03	£1,836.46	£0.00	£0.00	£0.00	24,096,977.29
Jul-17	ROI	£53,839,556.76	£18,469,543.17	£689,850.17	£859,675.25	£105,231.46	£1,843.13	£47,200.17	£31,615.25	£600.31	£0.00	£0.00	£0.00	74,045,115.67
	NI	£16,871,524.38	£4,970,215.26	£169,319.17	£206,699.63	£26,416.99	£609.40	£122,939.50	£47,342.00	£1,369.62	£0.00	£0.00	£0.00	22,416,435.95
Aug-17	ROI	£49,715,868.99	£16,597,661.81	£670,887.89	£189,567.77	£49,405.94	£1,189.91	£131,434.13	£36,135.62	£1,706.37	£1.41	£0.00	£0.00	67,393,859.84
	NI	£15,604,259.43	£4,539,253.85	£174,636.65	£71,879.64	£24,102.39	£515.19	£11,674.35	£2,799.04	£123.94	£52.50	£0.00	£0.00	20,429,296.98
Sep-17	ROI	£74,262,007.43	£18,246,287.18	£871,978.12	£297,529.91	£58,164.04	£2,322.12	£47,978.01	£13,495.87	£504.35	£163,227.43	£0.00	£0.00	93,963,494.46
	NI	£26,213,019.19	£5,128,326.58	£230,350.58	£81,360.23	£23,139.40	£499.97	£13,331.20	£6,511.87	£297.83	£140,679.45	£0.00	£0.00	31,837,516.30
Oct-17	ROI	£64,383,218.39	£18,184,490.56	£721,054.00	£289,078.01	£109,973.68	£2,586.90	£32,785.64	£11,166.82	£447.56	£0.00	£0.00	£0.00	83,734,801.56
	NI	£18,177,387.18	£5,365,068.45	£188,849.52	£78,539.81	£23,503.63	£650.99	£10,931.60	£2,877.72	£134.29	£0.00	£0.00	£0.00	23,847,943.19
Nov-17	ROI	£83,791,448.50	£24,787,351.57	£781,889.95	£413,698.19	£113,546.53	£3,294.51	£122,794.41	£33,970.75	£171.95	£458,368.55	£6,145.03	£6,145.03	110,519,370.97
	NI	£22,118,497.10	£6,651,370.52	£204,782.97	£141,840.79	£56,638.61	£1,085.43	£61,621.17	£21,195.41	£399.94	£704.87	£2,550.18	£2,550.18	29,263,237.17

Table 25 – Total Charges by Month

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Market		Energy	Capacity	M+4 Energy	M+4 Capacity	M+4 Market Operator	M+13 Energy	M+13 Capacity	M+13 Market Operator	Ad-hoc Energy	Ad-hoc Capacity	Ad-hoc Market Operator	Total
Jun-16	ROI	€83,230,540.90	€23,930,421.01	€473,719.03	€114,594.57	€3,362.69	€122,843.44	€33,950.89	€718.04	€645,099.81	€4,985.10	€799.68	€108,561,035.16
	NI	€25,746,599.74	€7,365,654.78	€145,319.38	€55,530.43	€1,080.37	€61,622.16	€21,195.79	€399.41	€273.51	€3,545.14	€0.00	€33,401,220.71
Jul-16	ROI	€53,840,170.28	€17,104,842.75	€415,112.37	€247,294.27	€5,027.94	€81,626.06	€27,799.39	€410.18	€208,424.28	€0.00	€0.00	€71,930,707.52
	NI	€20,282,958.20	€4,658,773.71	€111,871.11	€72,753.11	€1,297.25	€52,180.96	€20,969.56	€283.82	€27,450.94	€0.00	€0.00	€25,228,538.66
Aug-16	ROI	€47,925,137.80	€17,191,335.52	€205,102.11	€45,376.26	€1,900.83	€46,132.09	€12,064.34	€323.00	€0.00	€0.00	€0.00	€65,427,371.95
	NI	€13,904,887.07	€3,784,287.20	€26,983.41	€6,959.89	€294.55	€2,874.89	€2,261.38	€18.45	€0.00	€0.00	€0.00	€17,728,566.84
Sep-16	ROI	€57,725,046.88	€17,191,335.52	€316,785.33	€82,962.59	€4,207.29	€47,913.59	€8,957.12	€354.44	€0.00	€295.52	€0.00	€75,377,858.28
	NI	€15,918,157.70	€3,784,287.20	€32,790.23	€7,927.66	€416.78	€4,847.59	€1,185.01	€33.38	€0.00	€2,875.40	€0.00	€19,752,520.95
Oct-16	ROI	€69,972,953.07	€20,863,182.68	€338,586.57	€95,502.31	€4,333.45	€87,892.25	€14,736.13	€359.59	€0.00	€0.00	€0.00	€91,377,546.05
	NI	€25,586,214.40	€4,376,394.83	€77,787.35	€18,365.43	€977.30	€11,874.98	€1,647.25	€85.65	€0.00	€0.00	€0.00	€30,073,347.19
Nov-16	ROI	€83,487,123.38	€26,395,539.72	€257,668.44	€80,165.18	€3,418.32	€94,355.82	€39,305.46	€618.26	€301,690.28	€0.00	€72.04	€110,659,956.90
	NI	€31,306,401.54	€6,468,679.78	€173,737.66	€74,786.08	€2,148.38	€43,017.39	€20,271.13	€422.26	€832.79	€0.00	€0.00	€38,090,297.01
Dec-16	ROI	€95,266,581.65	€27,572,460.28	€447,482.30	€114,736.82	€6,025.28	€97,017.33	€32,733.66	€1,076.70	€496,715.14	€0.00	€1,512.38	€124,036,341.54
	NI	€35,841,749.90	€6,989,191.13	€197,537.73	€49,301.94	€2,219.49	€25,889.47	€12,309.63	€304.11	€87.68	€0.00	€0.00	€43,118,591.08
Jan-17	ROI	€75,626,838.95	€26,766,502.24	€158,454.05	€90,014.92	€2,220.87	€57,510.67	€43,928.85	€718.84	€0.00	€0.00	€0.00	€102,746,189.39
	NI	€25,518,177.37	€7,218,837.74	€105,159.01	€37,420.47	€1,201.46	€13,624.71	€8,406.28	€166.14	€0.00	€0.00	€0.00	€32,902,993.18
Feb-17	ROI	€72,035,479.90	€27,979,553.27	€155,130.29	€146,308.11	€822.54	€52,898.05	€23,287.43	€672.03	€0.00	€0.00	€0.00	€100,394,151.62
	NI	€27,677,996.42	€8,012,556.21	€84,963.22	€26,404.97	€479.76	€26,710.73	€10,373.95	€304.45	€0.00	€0.00	€0.00	€35,839,789.71
Mar-17	ROI	€74,265,958.01	€25,788,084.66	€532,016.14	€116,104.70	€3,141.82	€39,271.10	€13,708.08	€638.20	€0.00	€0.00	€0.00	€100,758,922.71
	NI	€27,816,469.38	€8,149,368.84	€76,024.05	€12,908.20	€406.88	€32,923.50	€14,410.91	€582.61	€0.00	€0.00	€0.00	€36,103,094.37
Apr-17	ROI	€56,718,380.85	€24,463,279.10	€537,285.75	€147,053.40	€3,530.38	€45,104.86	€18,331.73	€596.32	€0.00	€0.00	€0.00	€81,933,562.39
	NI	€18,526,297.40	€7,555,445.88	€125,968.13	€23,710.00	€645.79	€59,866.13	€25,832.73	€810.81	€0.00	€0.00	€0.00	€26,318,576.87
May-17	ROI	€45,161,376.39	€18,086,733.29	€488,856.77	€139,195.42	€2,589.27	€62,916.83	€17,794.83	€699.70	€0.00	€0.00	€0.00	€63,960,162.50
	NI	€19,510,303.26	€6,964,363.87	€107,751.82	€32,525.65	€619.02	€88,078.61	€33,838.58	€1,182.28	€0.00	€0.00	€0.00	€26,738,663.09
Jun-17	ROI	€52,758,496.23	€17,355,294.13	€882,852.53	€191,441.91	€3,661.42	€65,347.10	€16,420.10	€869.48	€0.00	€0.00	€0.00	€71,274,382.90
	NI	€20,252,622.96	€6,380,475.07	€138,076.17	€37,695.41	€816.77	€148,166.13	€42,425.33	€1,836.50	€0.00	€0.00	€0.00	€27,002,114.34
Jul-17	ROI	€54,277,998.32	€17,477,373.72	€846,835.48	€102,146.67	€1,651.30	€47,723.87	€34,509.09	€601.00	€0.00	€0.00	€0.00	€72,788,839.45
	NI	€18,773,354.99	€5,850,870.07	€230,926.67	€29,088.46	€609.37	€122,267.41	€44,738.41	€1,404.46	€0.00	€0.00	€0.00	€25,053,259.84
Aug-17	ROI	€50,562,528.38	€15,345,661.50	€190,289.53	€50,188.86	€1,330.67	€130,457.46	€35,704.06	€1,694.02	€2.00	€0.00	€0.00	€66,317,856.48
	NI	€18,103,577.29	€5,650,171.54	€71,815.23	€23,380.11	€512.28	€11,510.00	€3,159.55	€146.77	€45.51	€0.00	€0.00	€23,864,318.28
Sep-17	ROI	€77,198,039.75	€16,935,824.39	€297,316.08	€58,064.10	€2,315.75	€36,227.08	€14,579.25	€480.13	€329,748.86	€0.00	€736.80	€94,873,332.19
	NI	€29,090,989.44	€6,342,522.98	€81,307.50	€23,116.39	€615.25	€24,625.76	€5,539.12	€177.97	€254,051.02	€0.00	€4.28	€35,822,949.71
Oct-17	ROI	€66,627,076.69	€17,573,435.30	€379,168.29	€109,325.13	€2,586.81	€31,769.76	€11,103.25	€435.24	€0.00	€0.00	€0.00	€84,734,900.47
	NI	€22,549,009.87	€5,897,549.80	€79,103.03	€24,197.26	€648.45	€10,935.82	€2,957.83	€134.12	€0.00	€0.00	€0.00	€28,564,536.18
Nov-17	ROI	€83,230,540.90	€23,930,421.01	€473,719.03	€114,594.57	€3,362.69	€122,843.44	€33,950.89	€718.04	€645,099.81	€4,985.10	€799.68	€108,561,035.16
	NI	€25,746,599.74	€7,365,654.78	€145,319.38	€55,530.43	€1,080.37	€61,622.16	€21,195.79	€399.41	€273.51	€3,545.14	€0.00	€33,401,220.71

Table 26 - Total Payments by Month

Appendix H: Full Balancing Costs

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

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

Trading Market

Date Of Invoice	Week No	SEM Balancing Costs	VAT Balancing Costs
06/10/2017	39	€4,277,088.98	€0
13/10/2017	40	€2,482,838.95	€0
20/10/2017	41	€1,242,741.61	€0
27/10/2017	42	€2,017,373.96	€0
03/11/2017	43	€1,496,601.70	€0
10/11/2017	44	€1,138,507.50	€0
17/11/2017	45	€2,429,067.77	€0
24/11/2017	46	€1,847,665.06	€0

Table 27 – Full Balancing Costs for Trading Charges and Payments

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

Capacity Market

Invoice Month	SEM Balancing Costs	VAT Balancing Costs
Sept-17	-285.07	€0
Oct-17	-313.06	€0

Table 28 - Balancing Costs for Capacity Settlement

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

Appendix I: MSP Algorithms

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

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

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

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

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Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>Jan 2017</u>	<u>29/01/2017</u> <u>31/01/2017</u>	<u>03/01/2017</u> <u>26/01/2017</u> <u>29/01/2017</u> <u>31/01/2017</u>		<u>01/01/2017</u> <u>23/01/2017</u> <u>28/01/2017</u> <u>30/01/2017</u>	<u>12/01/2017</u> <u>31/01/2017</u>
<u>Feb 2017</u>		<u>06/02/2017</u> <u>13/02/2017</u> <u>19/02/2017</u>	<u>04/02/2017</u> <u>08/02/2017</u> <u>17/02/2017</u> <u>28/02/2017</u>	<u>01/02/2017</u> <u>05/02/2017</u> <u>08/02/2017</u> <u>11/02/2017</u>	<u>04/02/2017</u> <u>07/02/2017</u> <u>20/02/2017</u> <u>25/02/2017</u>
<u>Mar 2017</u>	=	<u>09/03/2017</u>	<u>19/03/2017</u> <u>24/03/2017</u>	<u>08/03/2017</u> <u>18/03/2017</u> <u>24/03/2017</u>	<u>20/03/2017</u> <u>21/03/2017</u>
<u>Apr 2017</u>	=	=	<u>17/04/2017</u> <u>28/04/2017</u>	<u>03/04/2017</u> <u>06/04/2017</u> <u>26/04/2017</u>	<u>04/04/2017</u>
<u>May 2017</u>	<u>15/05/2017</u>	=	=	=	<u>05/05/2017</u> <u>14/05/2017</u>
<u>Jun 2017</u>		<u>02/06/2017</u> <u>29/06/2017</u>			<u>11/06/2017</u>
<u>July 2017</u>	<u>19/07/2017</u>	<u>01/08/2017</u>			
<u>August 2017</u>		<u>17/08/2017</u>	<u>30/08/2017</u>	<u>18/08/2017</u>	<u>01/08/2017</u>

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Month	Ex-Ante	Ex-Ante 2	Ex-Post Indicative	Ex-Post Initial	Within Day
<u>September 2017</u>	<u>26/09/2017</u>		<u>04/09/2017</u> <u>18/09/2017</u> <u>20/09/2017</u>	<u>18/09/2017</u>	
<u>October 2017</u>	<u>15/10/2017</u>	<u>03/10/2017</u> <u>24/10/2017</u> <u>26/10/2017</u>	<u>04/10/2017</u> <u>06/10/2017</u> <u>26/10/2017</u>	<u>20/10/2017</u> <u>24/10/2017</u> <u>26/10/2017</u>	<u>10/10/2017</u> <u>16/10/2017</u>
<u>November 2017</u>		<u>01/11/2017</u> <u>02/11/2017</u> <u>17/11/2017</u> <u>22/11/2017</u> <u>28/11/2017</u> <u>29/11/2017</u>	<u>02/11/2017</u> <u>07/11/2017</u> <u>22/11/2017</u> <u>29/11/2017</u>	<u>02/11/2017</u> <u>07/11/2017</u>	

Table 29 - MIP Algorithms

Operational Date	Trade Date	Run Type	LR Peak SMP	MIP Peak SMP	Published
01/10/2016	01/10/2016	WD1	€629.67	€174.47	MIP
02/10/2016	03/10/2016	EA2	(€100)	€213.50	MIP
03/10/2016	02/10/2016	EP1	(€100)	€67.66	MIP
08/10/2016	04/10/2016	EP2	€670.56	€530.47	MIP
11/10/2016	07/10/2016	EP2	€779.29	€279.06	MIP
12/10/2016	08/10/2016	EP2	€761.10	€271.73	MIP
13/10/2016	12/10/2016	EP1	€536.13	€536.13	MIP

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25/10/2016	26/10/2016	EA2	€1,000	€176.89	MIP
25/10/2016	24/10/2016	EP1	€778.40	€542.17	MIP
25/10/2016	25/10/2016	WD1	€780.67	€184.41	MIP
26/10/2016	26/10/2016	WD1	€520.07	€520.07	MIP
28/10/2016	24/10/2016	EP2	€778.25	€542.17	MIP
28/10/2016	28/10/2016	WD1	€523.46	€185.11	MIP
29/10/2016	28/10/2016	EP1	€514.56	€226.86	MIP
29/10/2016	25/10/2016	EP2	€780.46	€436.68	MIP
05/11/2016	01/11/2016	EP2	€512.48	€218.59	MIP
10/11/2016	10/11/2016	WD1	€536.74	€190.70	MIP
21/11/2016	17/11/2016	EP2	€531.95	€227.60	MIP
23/11/2016	23/11/2016	WD1	€536.74	€228.93	MIP
24/11/2016	23/11/2016	EA2	€1,000	€373.29	MIP
29/11/2016	29/11/2016	WD1	€541.87	€541.87	MIP
30/11/2016	29/11/2016	EA2	€552.76	€181.28	MIP
30/11/2016	29/11/2016	EP1	€541.87	€270.18	MIP
01/12/2016	30/11/2016	EP1	€541.59	€207.75	MIP
04/12/2016	30/11/2016	EP2	€541.59	€207.75	MIP
06/12/2016	07/12/2016	EA1	€1,000	€111.24	MIP
08/12/2016	08/12/2016	WD1	(€100)	€191.23	MIP
08/12/2016	09/12/2016	EA1	€940.08	€213.49	MIP
08/12/2016	09/12/2016	EA2	€1,000	€227.15	MIP
09/12/2016	09/12/2016	WD1	€544.89	€226.90	MIP
12/12/2016	13/12/2016	EP1	€550.08	€550.08	MIP

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13/12/2016	14/12/2016	EA2	€1,000	€221.53	MIP
15/12/2016	16/12/2016	EA2	€1,000	€97.99	MIP
15/12/2016	14/12/2016	EP1	€551.72	€257.90	MIP
15/12/2016	14/12/2016	EP1	€577.68	€557.94	MIP
16/12/2016	12/12/2016	EP2	€564.56	€550.08	MIP
18/12/2016	14/12/2016	EP2	€551.72	€551.72	MIP
20/12/2016	16/12/2016	EP2	€1,000	€551.25	MIP
21/12/2016	22/12/2016	EA2	€1,000	€188.21	MIP
22/12/2016	18/12/2016	EP2	€552.30	€375.21	MIP
01/01/2017	31/12/2016	EP1	€581.16	€238.04	MIP
03/01/2017	04/01/2017	EA2	€1,000	€250.11	MIP
12/01/2017	08/01/2017	EP2	€-100	€-100	MIP
19/01/2017	18/01/2017	EA2	€1,000	€187.49	MIP
23/01/2017	22/01/2017	EP1	€546.36	€111.81	MIP
26/01/2017	27/01/2017	EA2	€1000	€225.25	MIP
26/01/2017	22/01/2017	EP2	€546.36	€101.73	MIP
28/01/2017	27/01/2017	EP1	€544.22	€544.22	MIP
30/01/2017	31/01/2017	EA2	€1000	€236.42	MIP
30/01/2017	29/01/2017	EP1	€553.05	€553.05	MIP
31/01/2017	31/01/2017	WD1	€554.03	€554.03	MIP
31/01/2017	27/01/2017	EP2	€544.22	€544.22	MIP
01/02/2017	28/01/2017	EP2	€553.13	€553.38	MIP
04/02/2017	04/02/2017	WD1	€582.64	€553.37	MIP
04/02/2017	03/02/2017	EP1	€533.92	€547.30	MIP

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05/02/2017	04/02/2017	EP1	€564.61	€553.37	MIP
06/02/2017	07/02/2017	EA2	€1,000	€122.43	MIP
07/02/2017	07/02/2017	WD1	€552.98	€205.26	MIP
08/02/2017	07/02/2017	EP1	€552.98	€552.98	MIP
08/02/2017	04/02/2017	EP2	€553.37	€553.37	MIP
11/02/2017	07/02/2017	EP2	€552.98	€552.98	MIP
13/02/2017	14/02/2017	EA2	€1,000	€264.26	MIP
17/02/2017	16/02/2017	EP1	€542.10	€542.10	MIP
20/02/2017	20/02/2017	WD1	€1,000	€239.91	MIP
19/02/2017	20/02/2017	EA2	€1,000	€103.71	MIP
25/02/2017	25/02/2017	WD1	€543.19	€219.91	MIP
28/02/2017	27/02/2017	EP1	€596.85	€328.07	MIP
12/03/2017	08/03/2017	EP2	€1,000	€183.28	MIP
08/03/2017	09/03/2017	EA2	€1,000	€203.40	MIP
20/03/2017	20/03/2017	WD1	€1,000	€146.90	MIP
20/03/2017	19/03/2017	EP1	€531.42	€420.26	MIP
21/03/2017	21/03/2017	WD1	€559.20	€193.39	MIP
22/03/2017	18/03/2017	EP2	€-100	€69.40	MIP
25/03/2017	24/03/2017	EP1	€531.39	€221.11	MIP
28/03/2017	24/03/2017	EP2	€531.39	€227.68	MIP
07/04/2017	03/04/2017	EP2	€1,000	€112.04	MIP
04/04/2017	04/04/2017	WD1	€534.37	€94.60	MIP
13/04/2017	06/04/2017	EP2	€534.89	€118.83	MIP
18/04/2017	17/04/2017	EP1	€1,000	€72.21	MIP

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29/04/2017	28/04/2017	EP1	€1,000	€97.01	MIP
30/04/2017	26/04/2017	EP2	€1,000	€74.49	MIP
05/05/2017	05/05/2017	WD1	€-100	€46.01	MIP
14/05/2017	14/05/2017	WD1	€-100	€538.89	MIP
14/05/2017	15/05/2017	EA1	€-79.01	€58.58	MIP
01/06/2017	02/06/2017	EA2	€1,000	€84.36	MIP
11/06/2017	11/06/2017	WD1	€-100	€87.76	MIP
28/06/2017	29/06/2017	EA2	€-100	€40.73	MIP
18/07/2017	19/07/2017	EA1	€911.60	€74.59	MIP
31/07/2017	01/08/2017	EA2	€1,000	€217.58	MIP
01/08/2017	01/08/2017	WD1	€1,000	€182.44	MIP
16/08/2017	17/08/2017	EA2	€1,000	€1000	MIP
22/08/2017	18/08/2017	EP2	€757.68	€89.98	MIP
31/08/2017	30/08/2017	EP1	€1,000	€71.67	MIP
05/09/2017	04/09/2017	EP1	€1,000	€267.27	MIP
19/09/2017	18/09/2017	EP1	€1,000	€1000	MIP
21/09/2017	20/09/2017	EP1	€1,000	€206.19	MIP
22/09/2017	18/09/2017	EP2	€1,000	€285.75	MIP
25/09/2017	26/09/2017	EA1	€800	€283.57	MIP
02/10/2017	03/10/2017	EA2	€1,000	€217.09	MIP
05/10/2017	04/10/2017	EP1	€1,000	€90.22	MIP
07/10/2017	06/10/2017	EP1	€1,000	€281.63	MIP
10/10/2017	10/10/2017	WD1	€-1,000	€279.20	MIP
14/10/2017	15/10/2017	EA1	€800	€283.57	MIP

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

Table 30 - MIP Vs LR Peak Price Comparison