



Market Operator Monthly Report

December 2017

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Executive Summary

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

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

There were 18 defaults by Participants during December 2017. The largest of these was an Energy Week 47 2017 Initial invoice for €1453.80 which was remedied on the same day.

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

134 general queries were received in December 2017. During the same period 135 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

One new Party joined the Market in December 2017

- PY_000193 3T Power Limited

There were no terminating parties in December 2017.

The following units went effective in the Market in December 2017

- PT_400021_SSE Airtricity Limited GU_402210 Leanamore
- PT_400066_Bord Gais Energy Supply GU_402250 Scartaglen WF Gate 2
- PT_400066_Bord Gais Energy Supply GU_402260 Scartaglen WF Gate 3
- PT_500034_NIE Supply Generation GU_501680 Rathsherry Windfarm
- PT_400202_Glanaruddery Energy Supply Limited GU_402230 Glanaruddery Windfarms 1
- PT_400202_Glanaruddery Energy Supply Limited GU_402240 Glanaruddery Windfarms 2
- PT_400203_Glanaruddery Energy Supply Limited SU_400225 Glanaruddery Energy Supply
- PT_400215_Teevurcher Supply Limited SU_400224 Teevurvher Supply Limited

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

Suspension of Participants

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

Financial Statistics

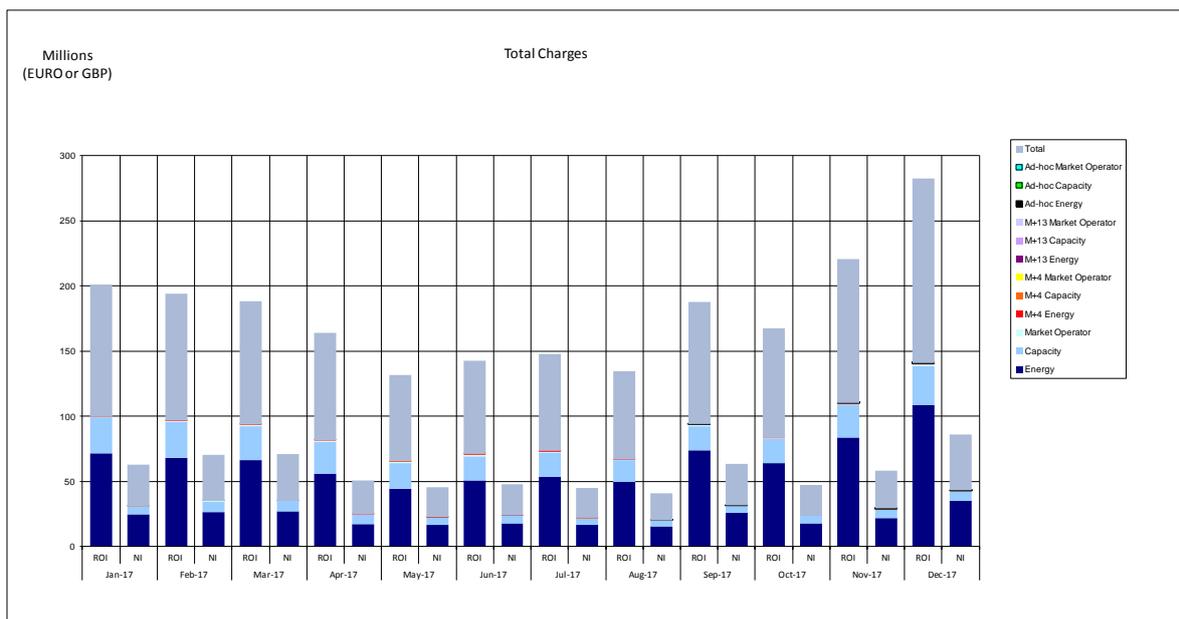


Figure 1 - Total Charges for Each Currency

Market	Dec 17	
	ROI	NI
Energy	€108,724,597	£35,009,530
Capacity	€30,213,314	£7,435,319
Market Operator	€1,032,090	£270,080
M+4 Energy	€386,043	£180,156
M+4 Capacity	€61,761	£72,190
M+4 Market Operator	€2,747	£1,324
M+13 Energy	€91,579	£45,369
M+13 Capacity	€20,860	£11,661
M+13 Market Operator	€559	£288
Ad-hoc Energy	€354,185	£58,353
Ad-hoc Capacity	€196,829	£11,092
Ad-hoc Market Operator	€196,829	£11,092
Total	€141,281,394	£43,106,453

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

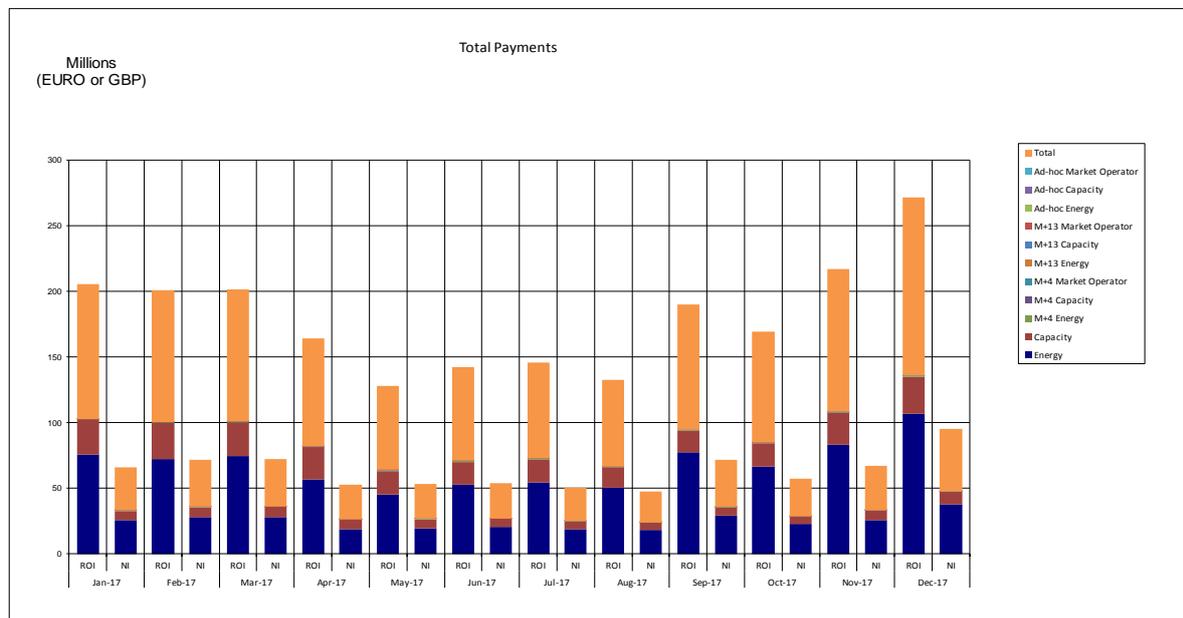


Figure 2 - Total Payments for Each Currency

Market	Dec 17	
	ROI	NI
Energy	€106,835,064	£37,790,995
Capacity	€27,957,453	£9,466,911
M+4 Energy	€397,101	£181,354
M+4 Capacity	€98,041	£40,293
M+4 Market Operator	€2,985	£1,306
M+13 Energy	€91,151	£45,735
M+13 Capacity	€20,819	£11,769
M+13 Market Operator	€556	£290
Ad-hoc Energy	€336,746	£57,625
Ad-hoc Capacity	€173,794	£31,405
Ad-hoc Market Operator	€644	£288
Total	€135,914,355	£47,627,971

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:

December 2017	
Imbalance (Energy Only)	-€10,581,693.05

Table 4 - Balancing Costs for Energy Settlement

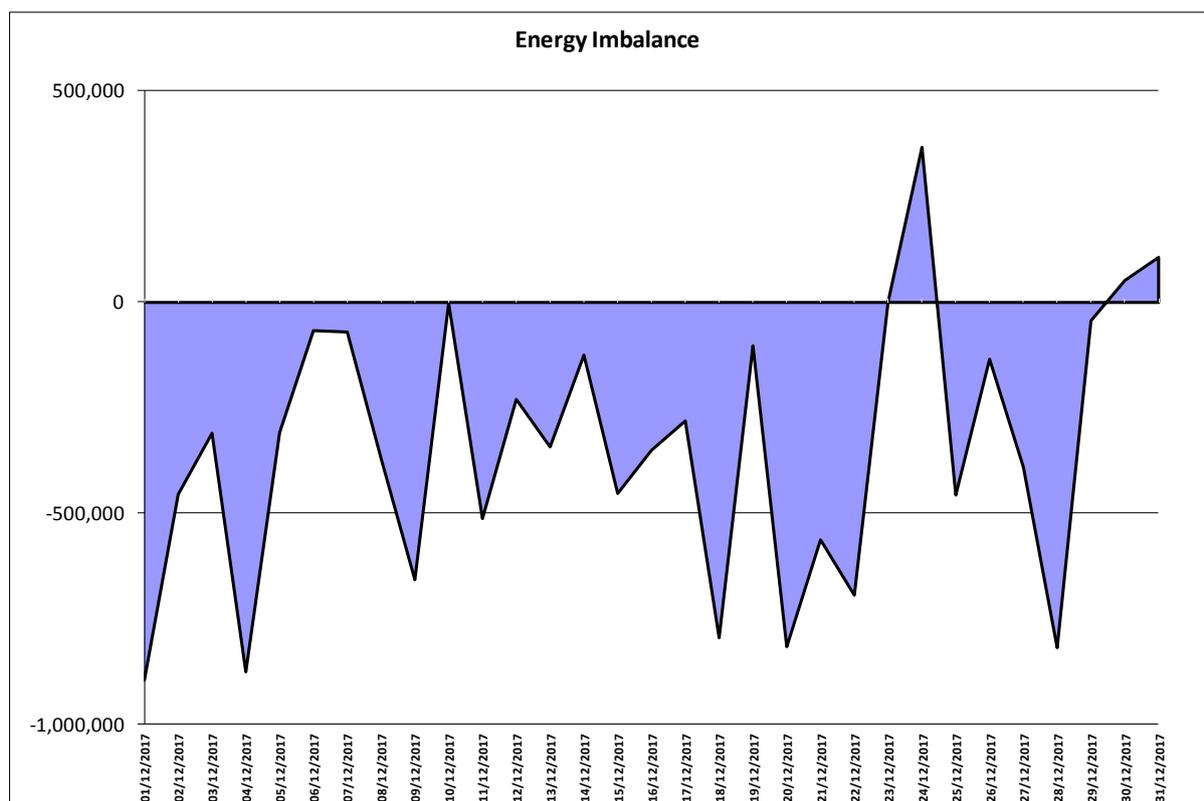


Figure 3 – Energy Imbalances

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.

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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
01/12/2017	47	€1,708,267.17	€0
08/12/2017	48	€1,330,336.80	€0
15/12/2017	49	€1,452,421.60	€0
22/12/2017	50	€1,454,433.85	€0
29/12/2017	51	-€120,183.03	€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:

December 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
25/11/2017	01/12/2017	47	-£63,366.04	-£2,200.00	-£65,566.04
02/12/2017	08/12/2017	48	£25,090.23	-£3,900.00	£21,190.23
09/12/2017	15/12/2017	49	-£333.42	-£105.00	-£438.42
16/12/2017	22/12/2017	50	£16,356.23	£-	£16,356.23
23/12/2017	29/12/2017	51	£25,963.22	-£425.00	£25,538.22

Table 7 - Total Currency Costs for Trading Payments and Charges

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

Over the period of this report Currency Costs for each week represented a benefit to Participants of up to £25538.22 and a loss of up to £65,566.04. Whether Currency Costs are a cost or benefit to Participants is directly related to whether the currency is rising or falling between the billing period, invoice date and payment dates.

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

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

Date Of Invoice	Capacity Month	Currency Costs For Capacity Settlement
11/12/2017	Nov 2017	£86,650.96

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
€65,289,893.62	-€7,846,200.42	€1,511,751.57	-€44,622,519.40

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.

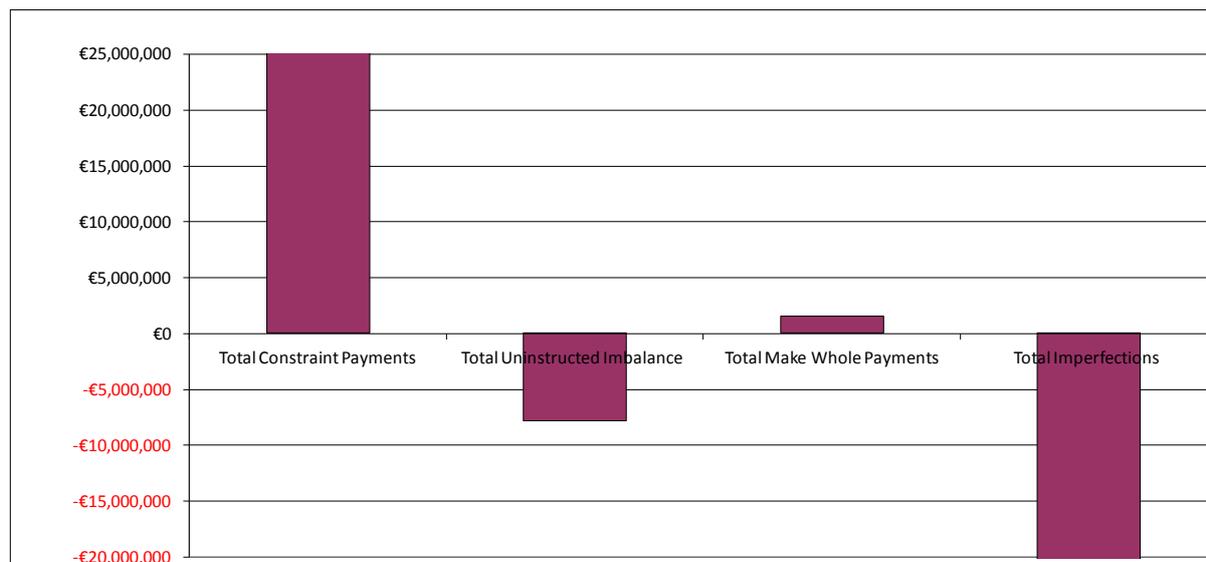


Figure 4 - Cumulative Imperfections Costs Vs Budget

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 August 2017 and M+13 resettlement period of November 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

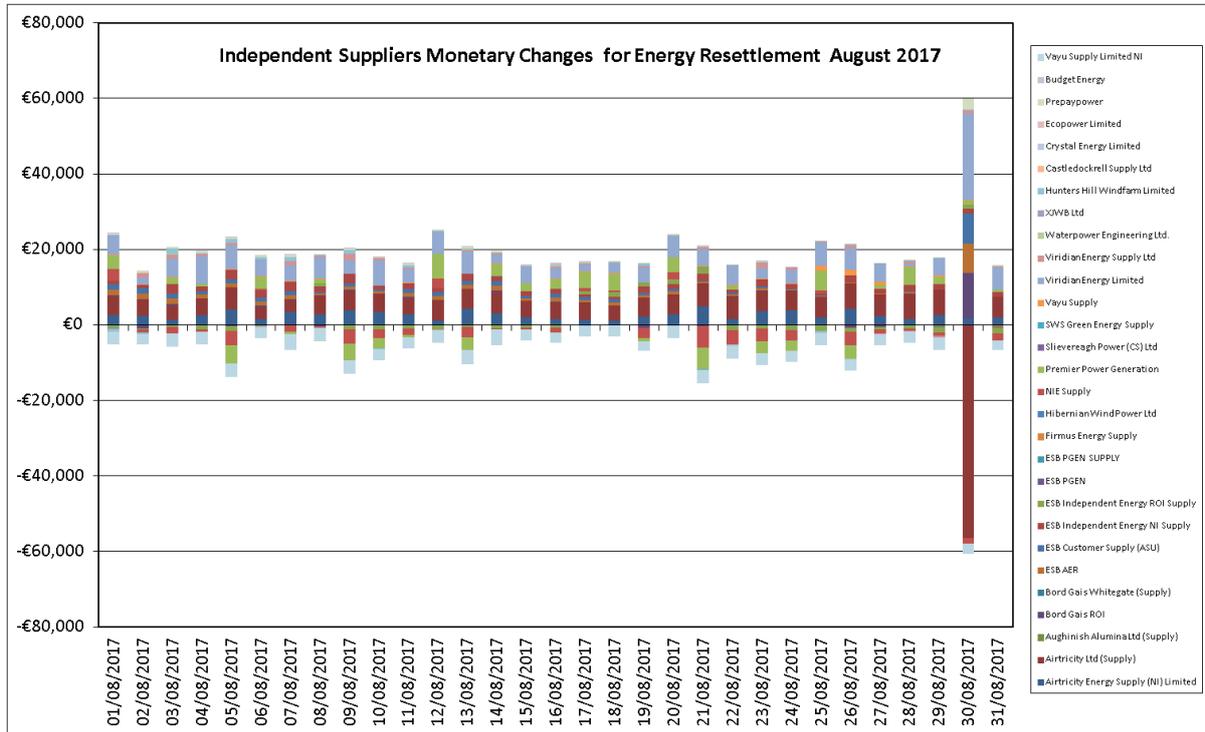


Figure 5 – Independent Suppliers Monetary Changes for Energy Resettlement – August 2017

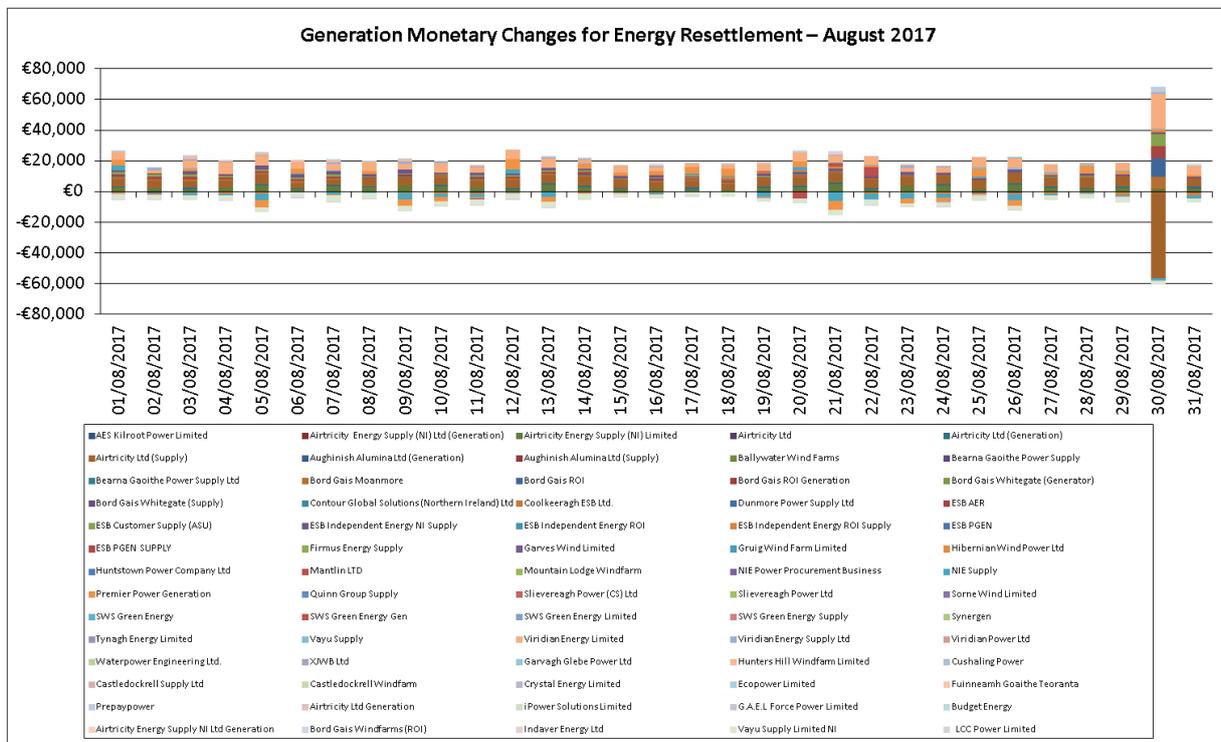


Figure 6 – Generation Monetary Changes for Energy Resettlement – August 2017

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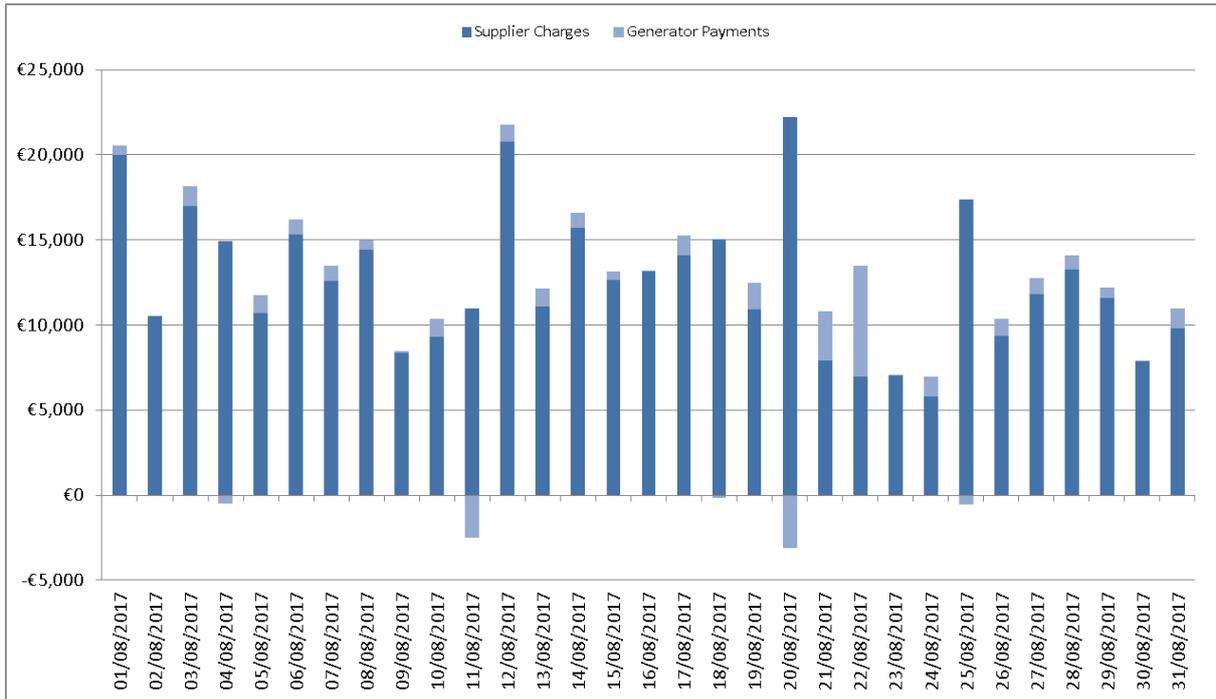


Figure 7 – Total Monetary Changes for Energy Resettlement – August 2017

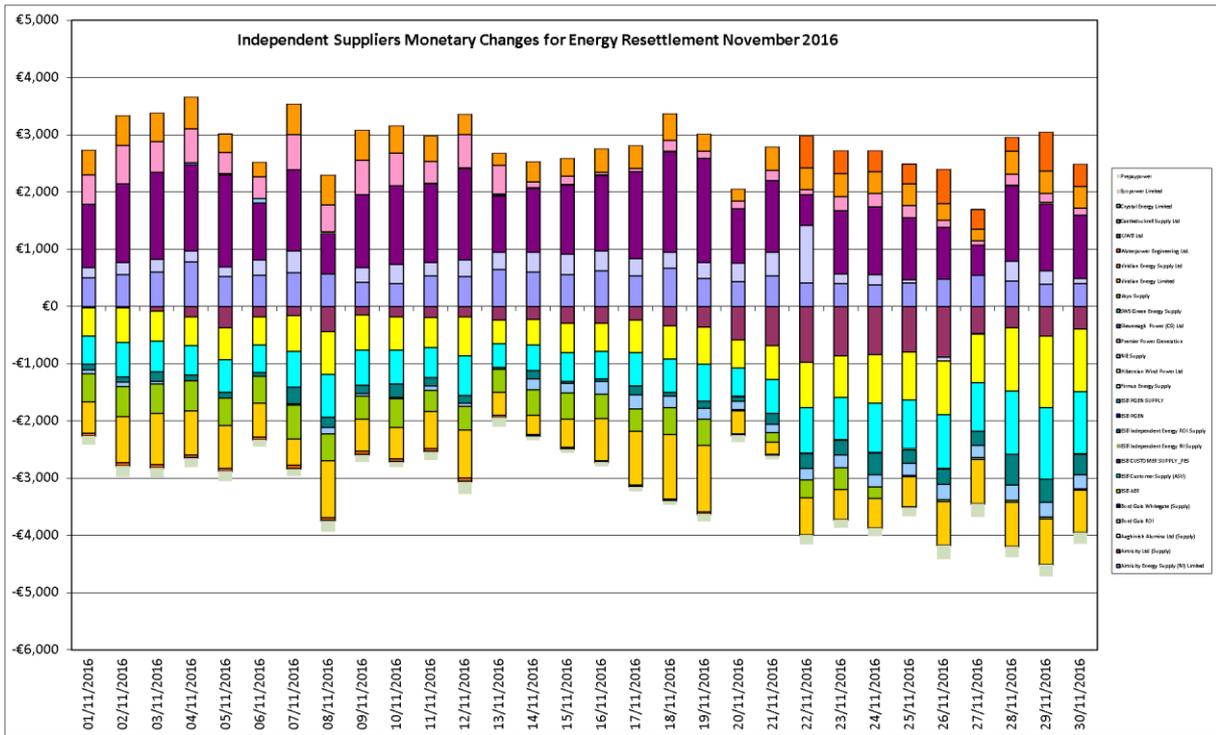


Figure 8 - Independent Suppliers Monetary Changes for Energy Resettlement – November 2016

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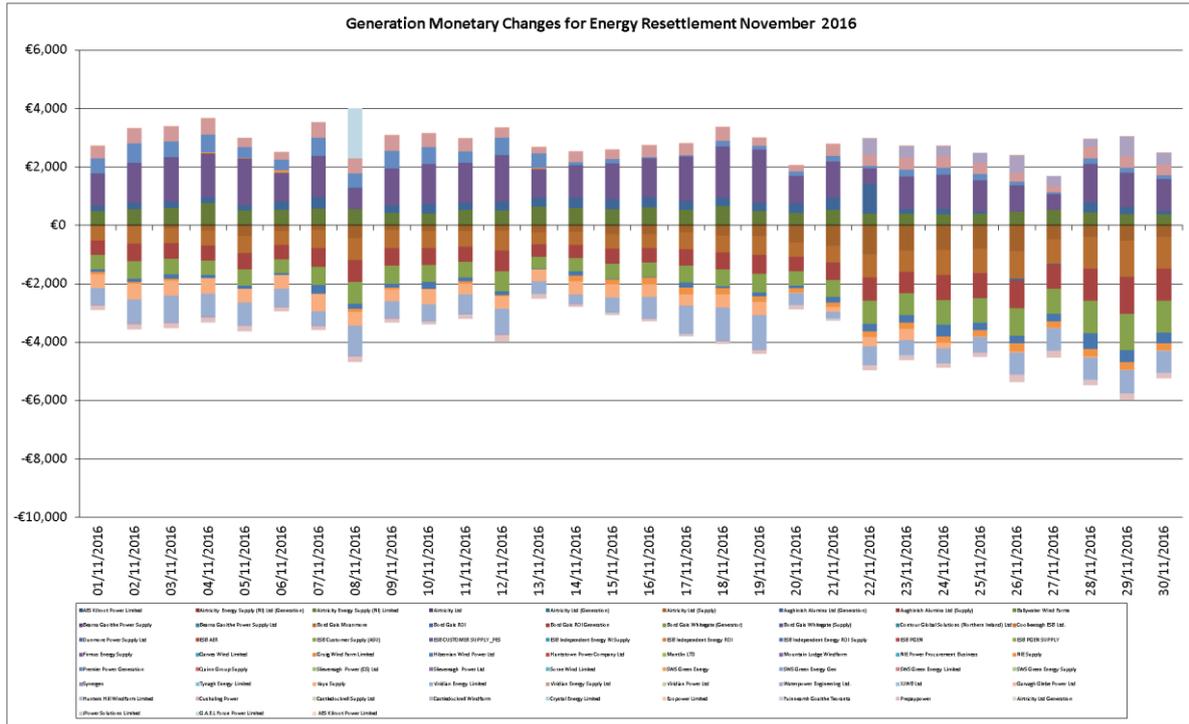


Figure 9 - Generation Monetary Changes for Energy Resettlement – November 2016

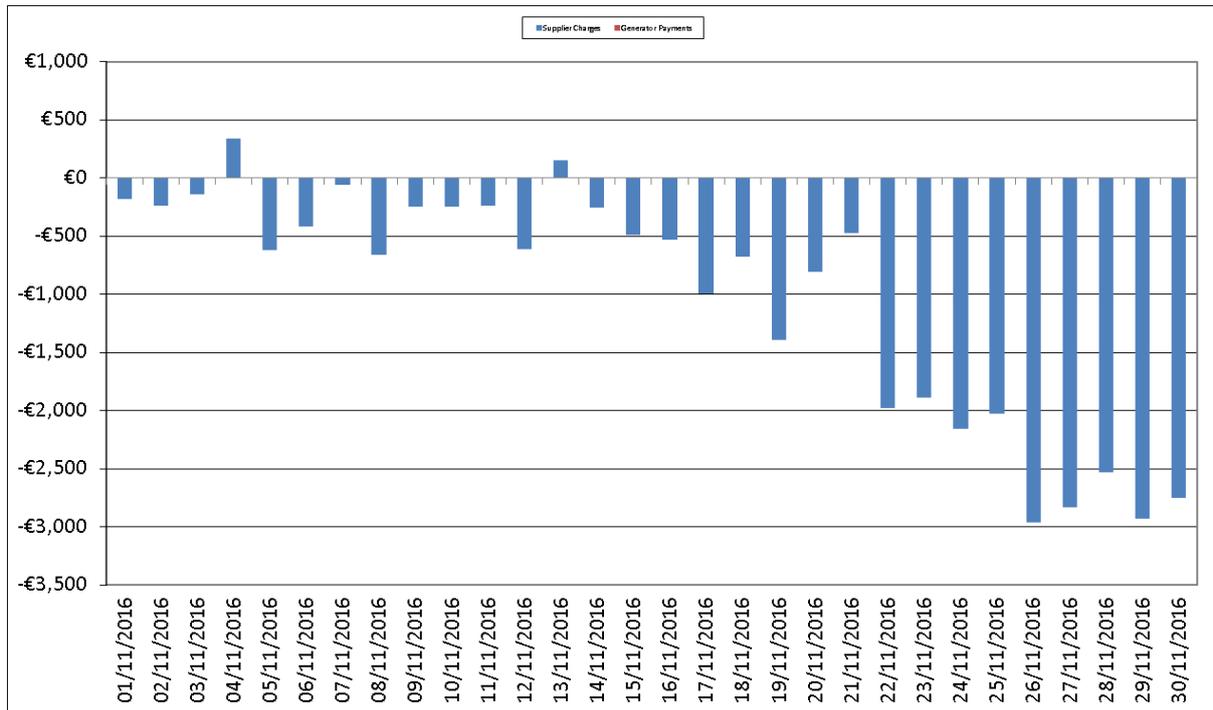


Figure 10 - Total Monetary Changes for Energy Resettlement – November 2016

3.1.2 Capacity Market

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

Market Operator Monthly Report

- 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

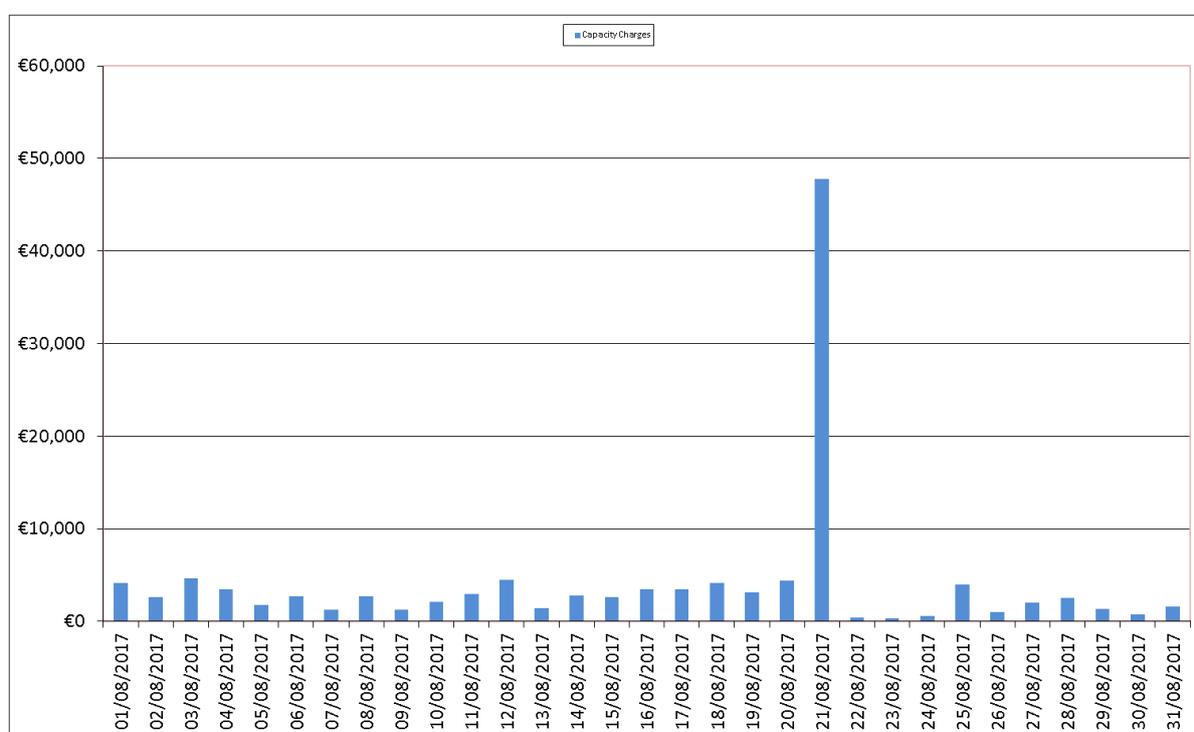


Figure 11 - Independent Suppliers Monetary Changes for Capacity Resettlement – August 2017

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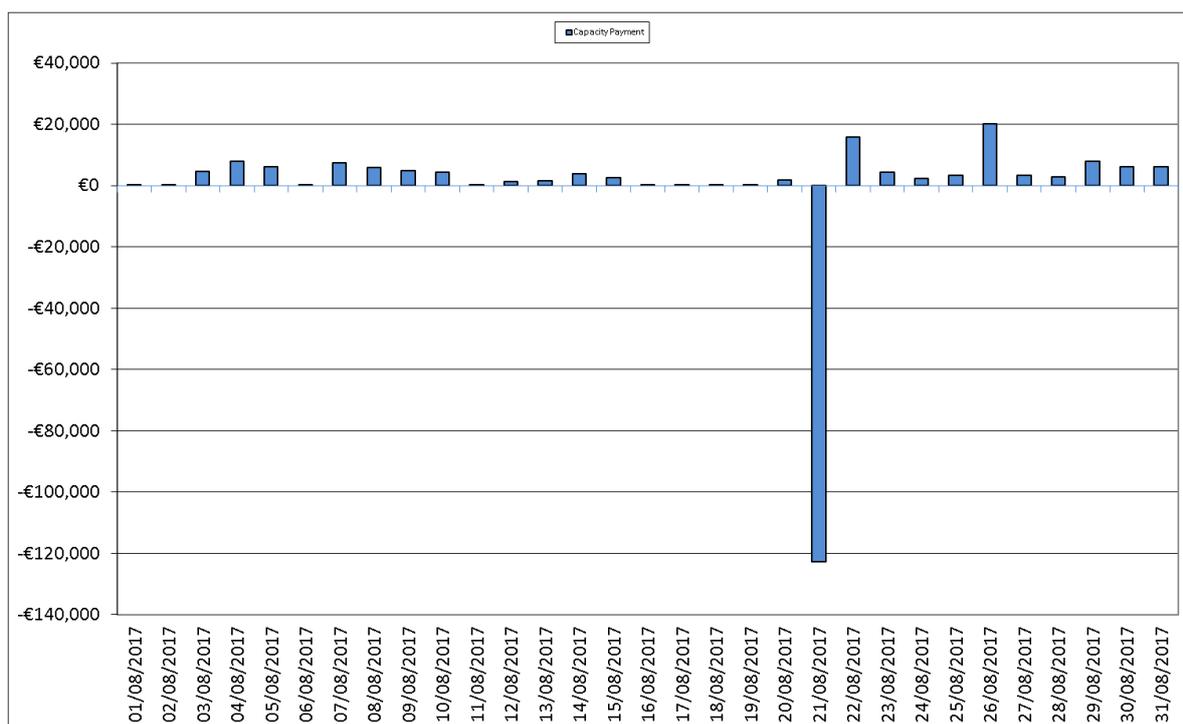


Figure 12 - All Generation Monetary Change for Capacity Resettlement – August 2017

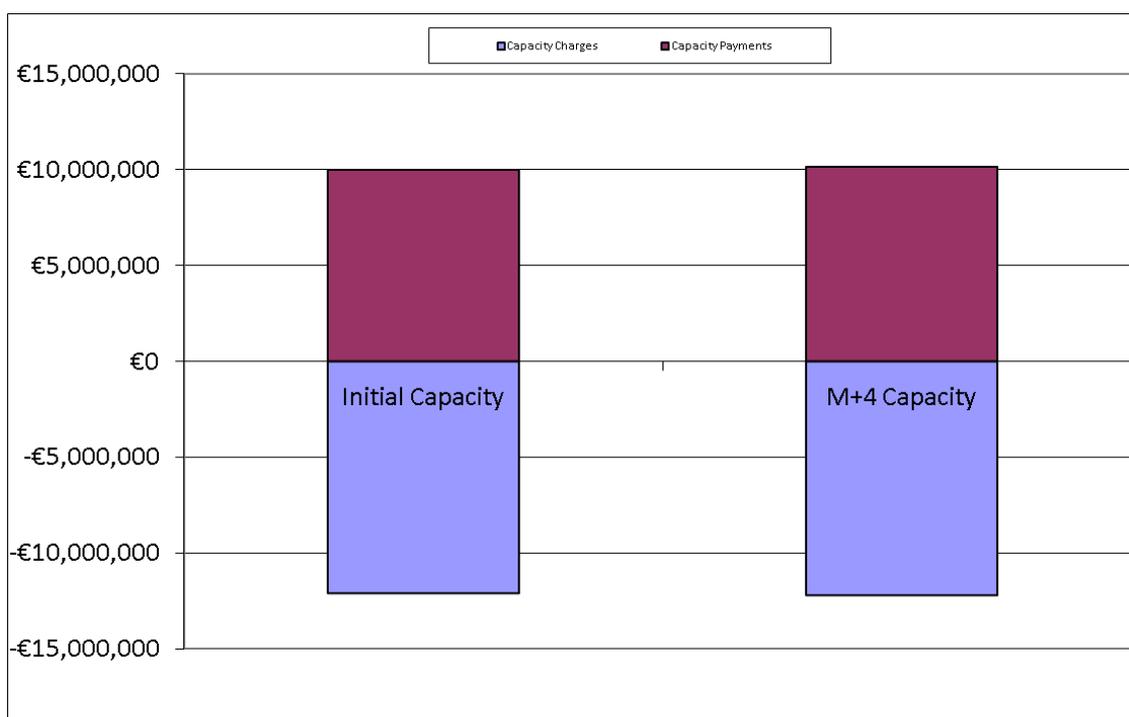


Figure 13 - Comparison of Distribution of Monetary Amounts between Capacity Initial and Resettlement August 2017.

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

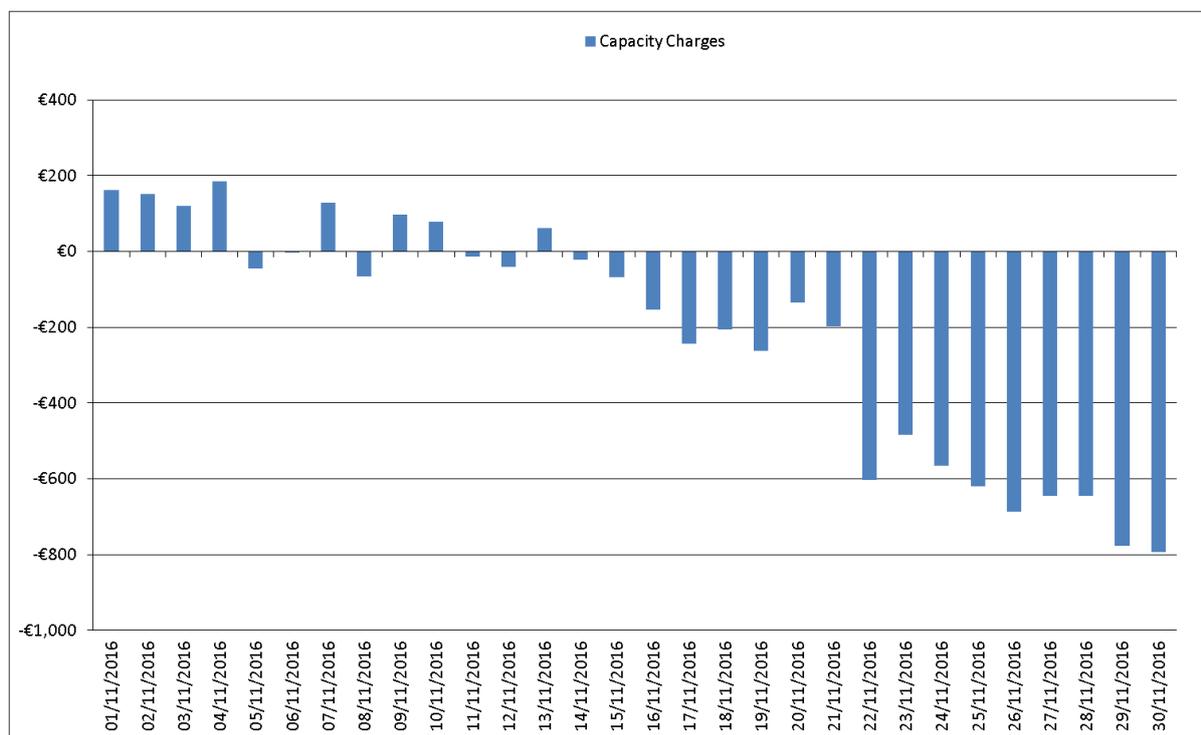


Figure 14 - Independent Suppliers Monetary Changes for Capacity Resettlement – November 2016

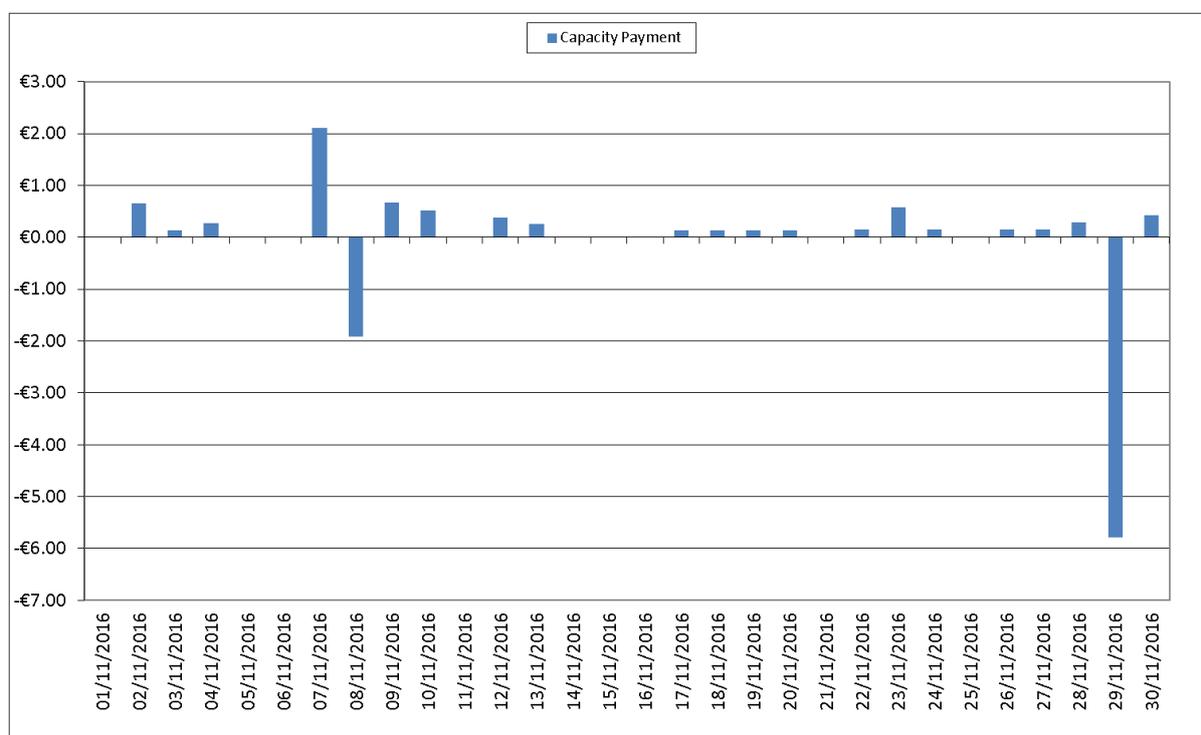


Figure 15 – All Generation Monetary Change for Capacity Resettlement – November 2016

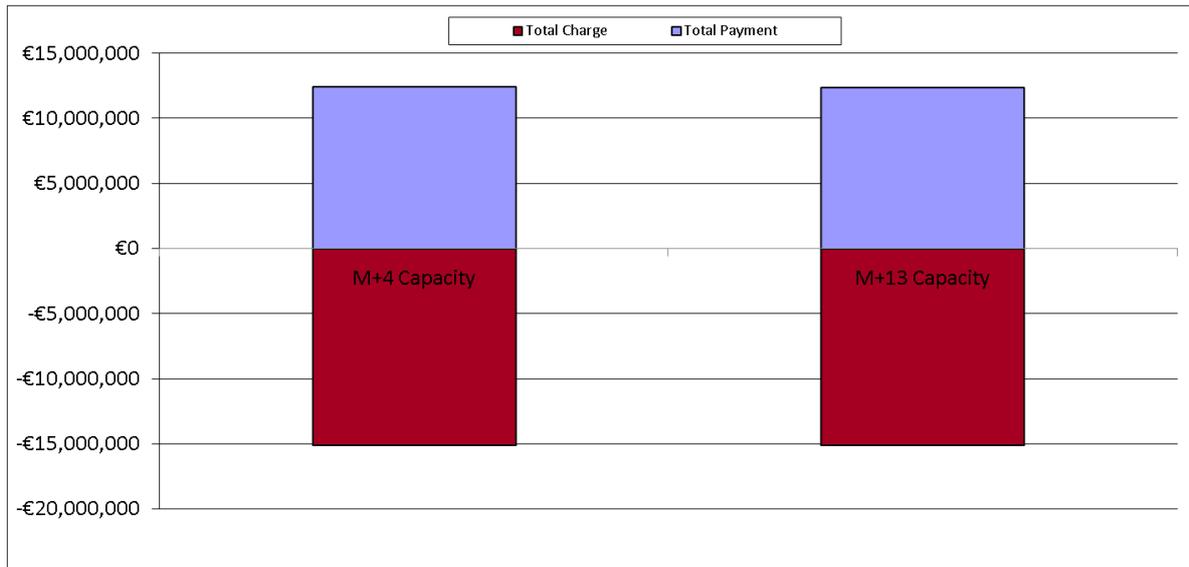


Figure 16 - Comparison of Distribution of Monetary Amounts between M+4 Capacity Resettlement and M+13 Capacity Resettlement – November 2016

Helpdesk Call Statistics

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

Market Helpdesk Report: 01/12/17 to 31/12/17

	Received	Resolved within the period	Not Resolved	Resolved in the period	Resolution Time (Working Days)	Resolved On Time
Normal	132	114	18	135	1.58	127
Important	2	0	2	0	0.00	0
Urgent	0	0	0	0	0.00	0
Settlement	4	3	1	7	10.32	7
Credit	0	0	0	0	0.00	0
Dispute	1	1	0	1	9.39	1
Data	1	1	0	1	0.77	1
Total/Average	140	119	21	144	4.41	136

Table 10 – Helpdesk Statistics

Definitions:

- Resolved within the Period refers to queries raised and resolved within the calendar month of December 2017.
- Resolved in the Period refers to queries resolved within December 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 December 2017.
- Not Resolved refers to queries raised but not resolved within December 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 0.05 working days from 1.63 in November 2017 to 1.58 in December 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 December 2017 with regard to formal Settlement Queries.

Disputes and Queries

5.1.1 Disputes

One dispute was raised during the month of December 2017. This is to be corrected at M+4.

Topic	Number Of Queries
Actual Availabilities	1

Table 11– Upheld Dispute Queries by Topic

5.1.2 Data Queries

Two formal data queries were raised during the month of December 2017 after the Ex-Post Indicative run. Both data queries were corrected for the Ex-Post Initial pricing run and Initial Settlement.

Topic	Number Of Queries
Loss Factors	1
Meter Generation	1

Table 12– Upheld Data Queries by Topic

5.1.3 Settlement Queries

There were four formal Settlement queries raised in December 2017. Three queries were upheld and have since been resolved.

Topic	Number Of Queries
SO-SO Trades	2
Meter Generation	1

Table 13 – Upheld Settlement Queries by Topic

- Two 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 Meter Generation was raised. This is to be corrected within M+4 resettlement. The query was deemed to be of Low Materiality.

Unresolved Queries

There are no unresolved settlement queries as of the 15th January 2017.

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

Central Systems

6.1 Proportion of Default Data Used

On review of the Commercial Offer Data used in the MSP runs, 66.79% of data used was submitted by Participants through the normal Bid-Offer process. 33.21% 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 no Re-Price carried out in December 2017.

There were 2 Ad hoc Re-Settlement runs carried out in December 2017.

6.3.2 System Errors

There were no Market Application defects found in December 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 December 2017.

1.4.1 MSP Postings December 2017

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

Table 14 - Operational Timings

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

Table 15 - Operational Timings (% on time)

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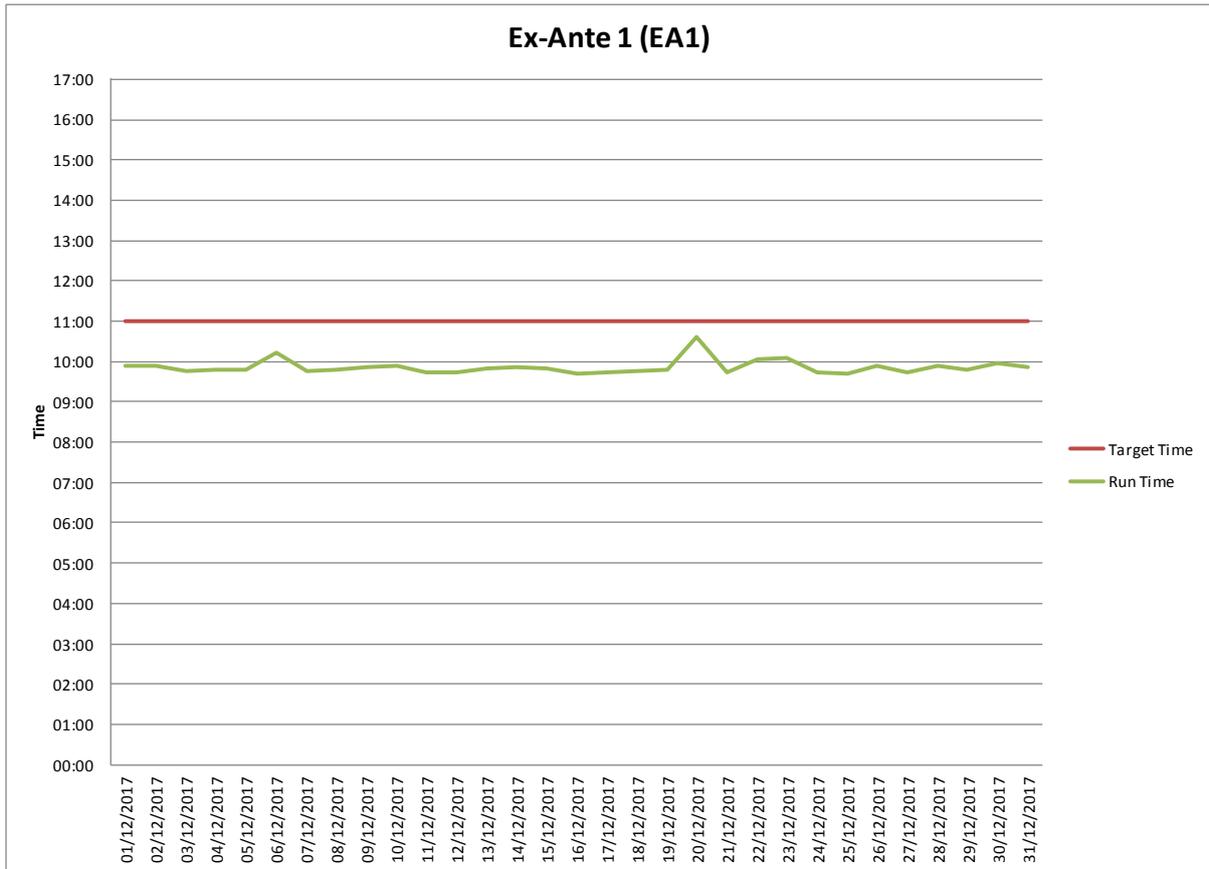


Figure 17 – Ex-Ante 1

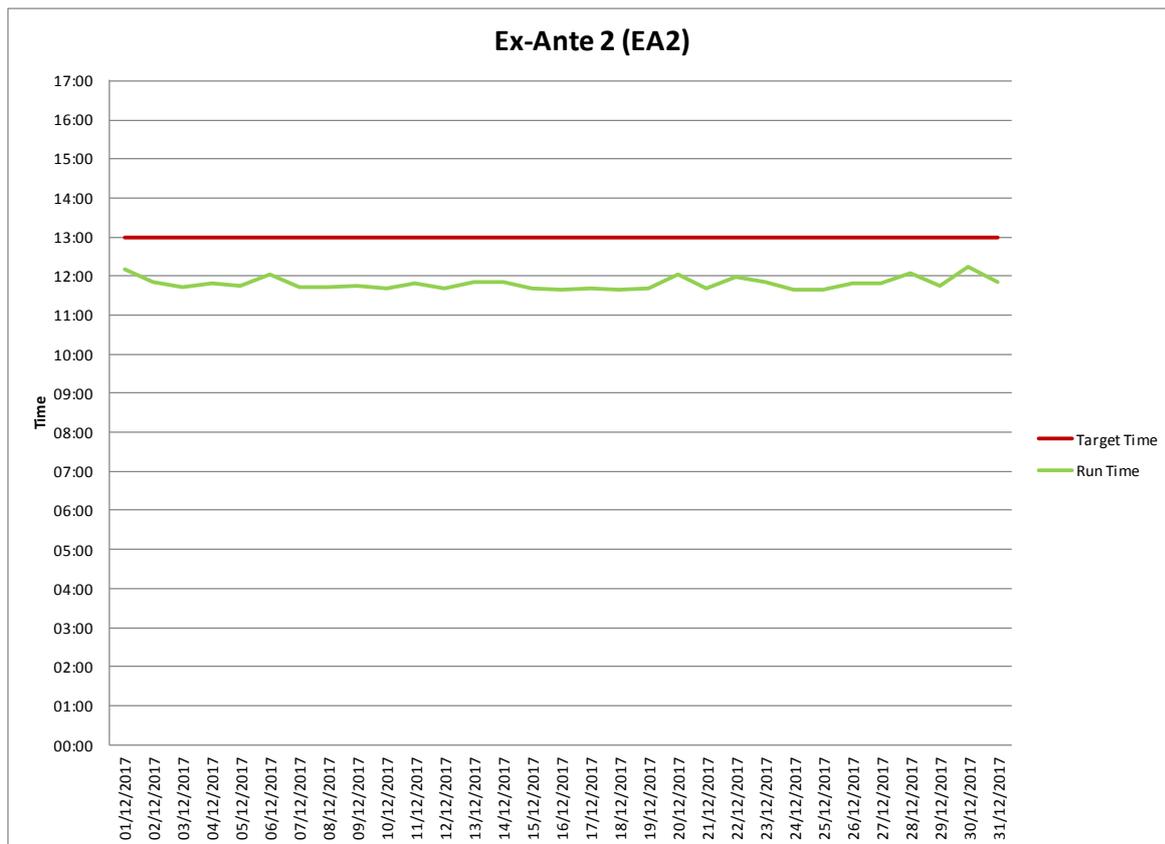


Figure 18 – Ex-Ante 2

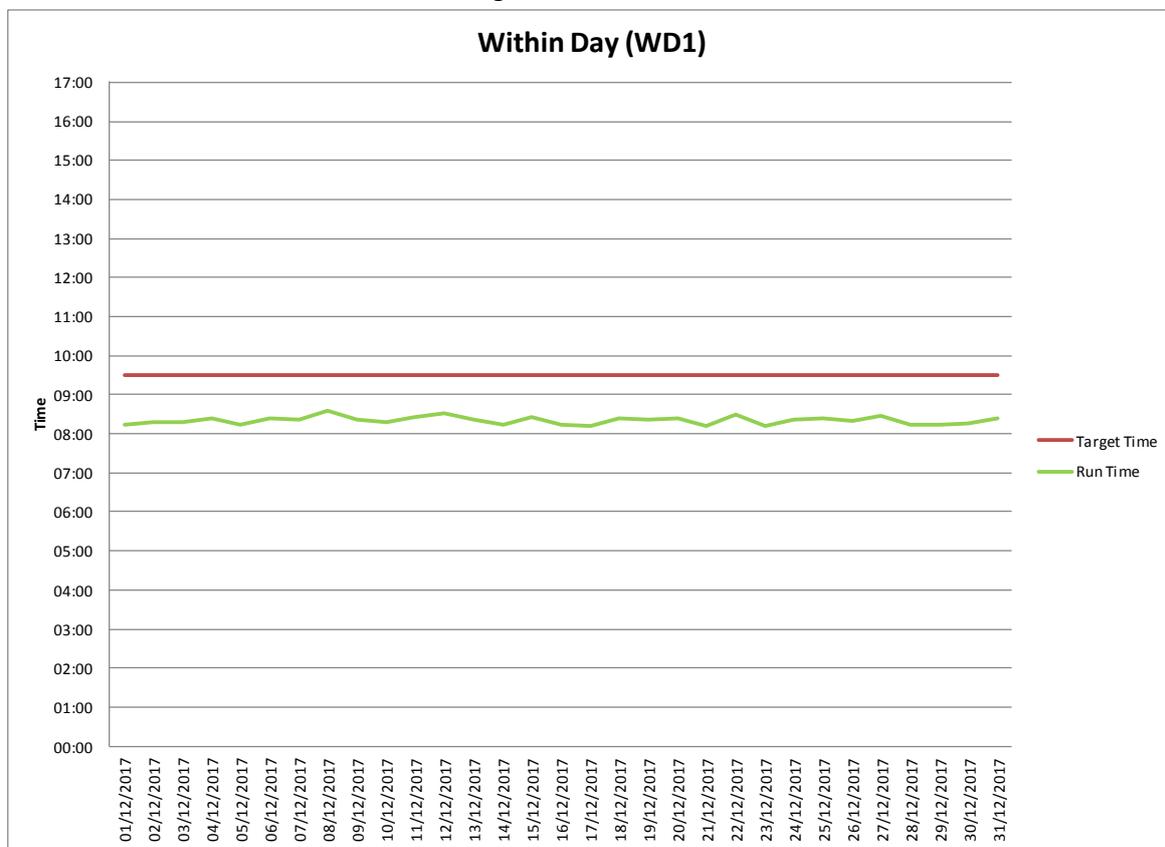


Figure 19 – Within Day 1

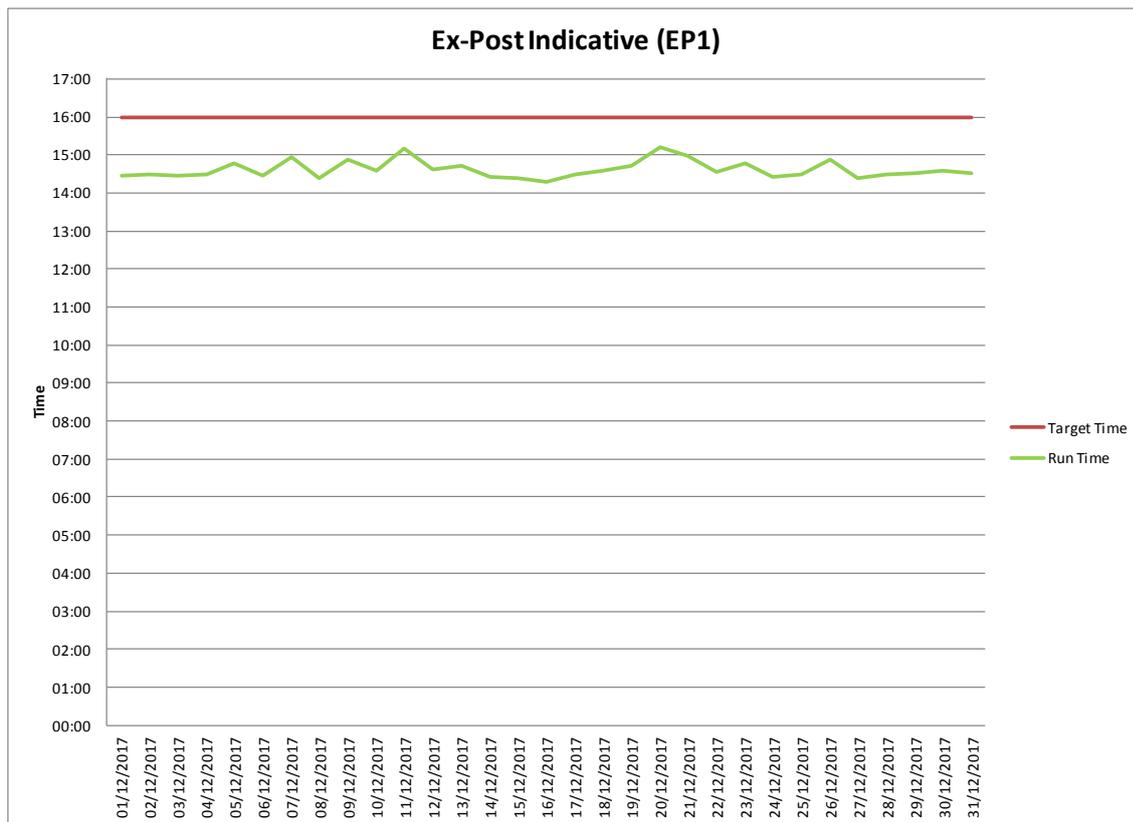


Figure 20 - Ex-Post Indicative

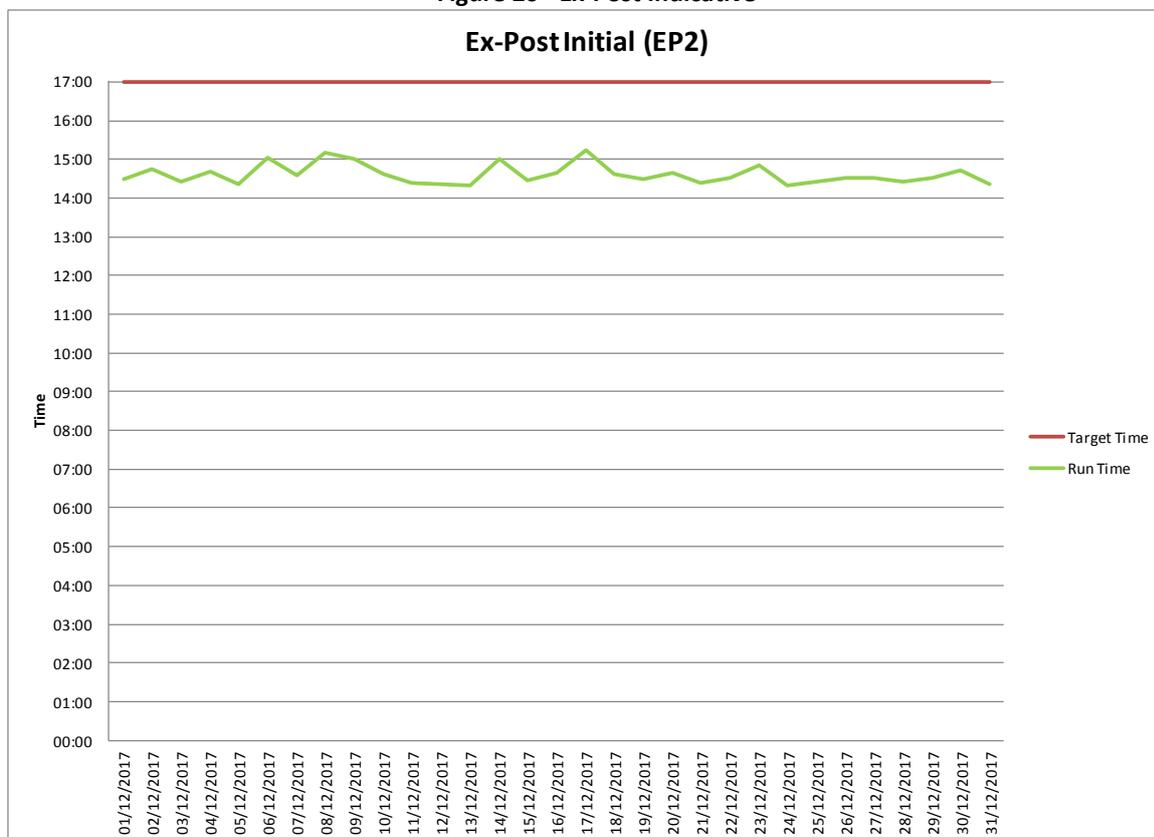


Figure 21 - Ex-Post Initial

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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 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 December 2017

The publication timings for Settlement runs are provided below.

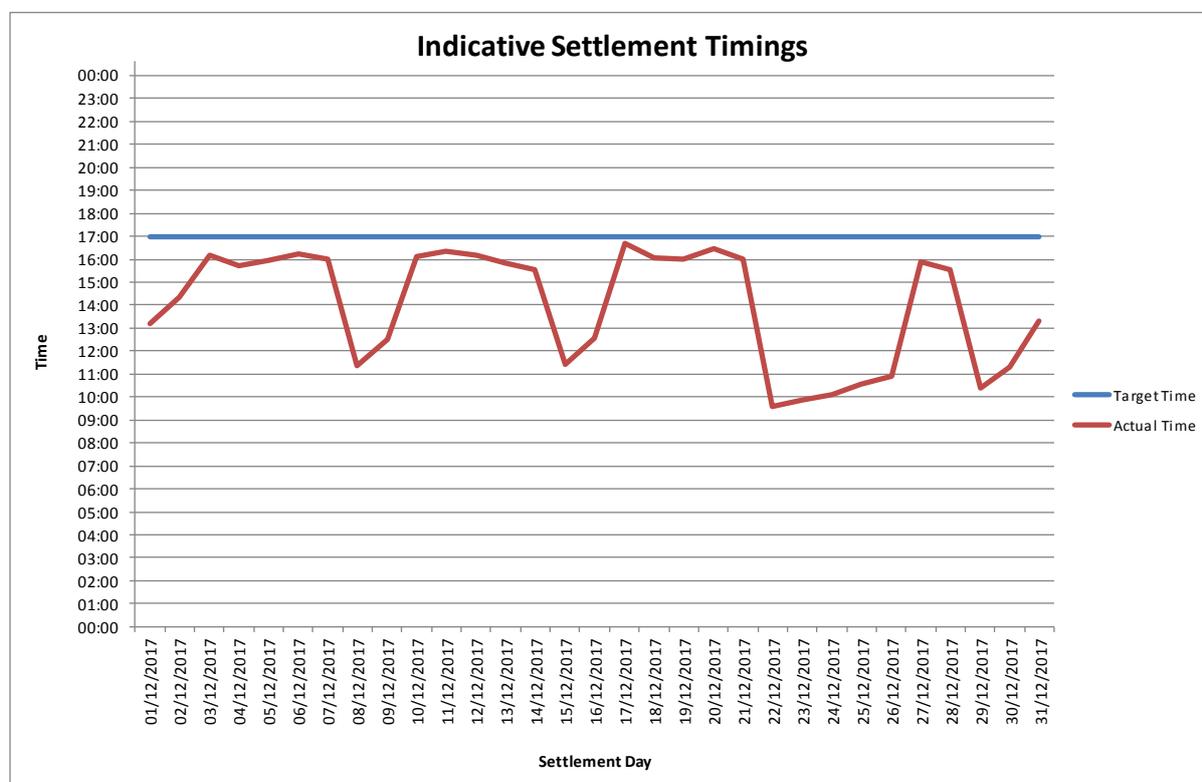


Figure 22 - Indicative Settlement Postings

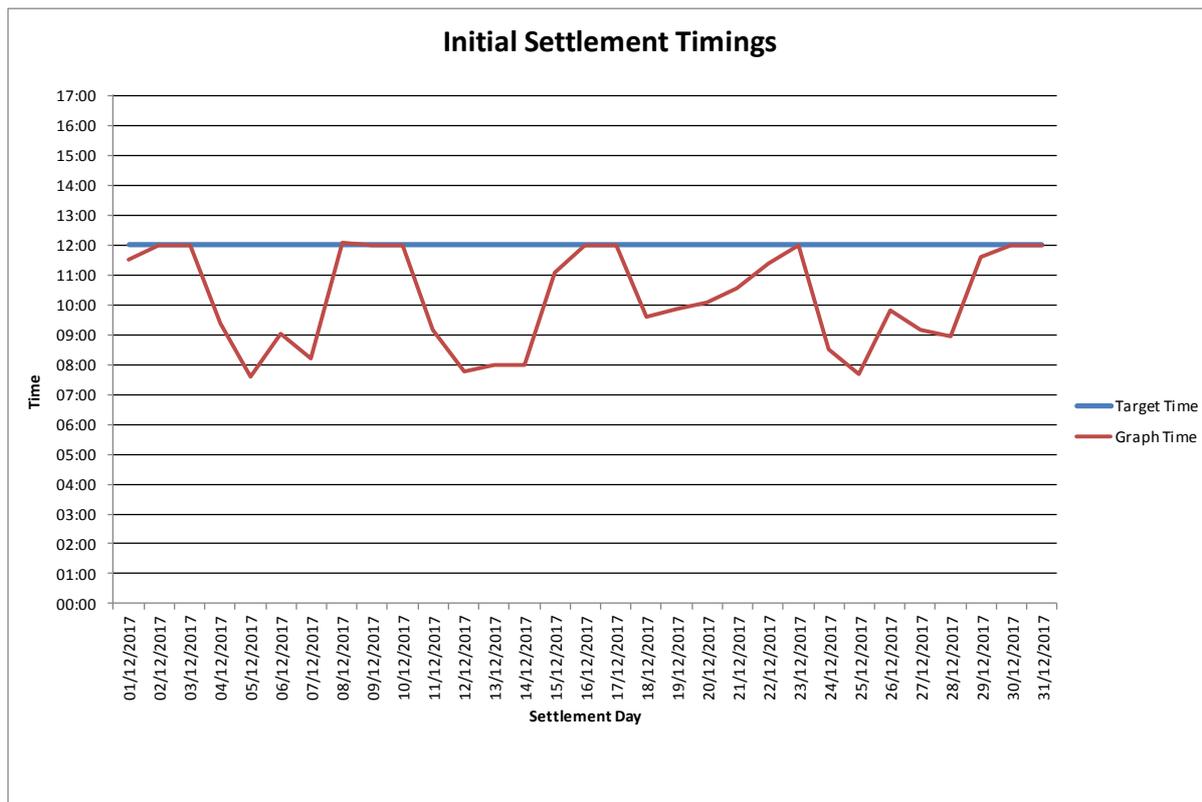


Figure 23 - Initial Settlement Postings

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

6.5. – No update for December 2017

Occasional Components

7.1 Disaster Recovery/Business Continuity Tests

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

7.3 Communications or Systems Failures

There were no communication failures during December 2017.

7.4 Denial of Service Attacks

There was no Denial of Service Attacks during December 2017.

7.5 Submission of Parameters to RAs for Approval

The Annual Capacity Exchange Rate for 2018 was published in December.

Appendix A: Detail of Trading and Settlement Code Breaches

Data Provider

There were no issues to report in December 2017.

Market Participant

Cps Date Identified	Run Type	Quality or Timing	Party	Issue Type	Description	Cause	Resolution	T and SC Breach
01/12/2017	Money In	Timing	Participant	Payment Default	Open Electric Ireland (PT_500082) defaulted on a VMOC Week 43 2016 M+13 Invoice	Participant Error	A default letter was issued to the participant	Major
06/12/2017	Money In	Timing	Participant	Payment Default	Dublin Waste to Energy Supply Limited (PT_400199) defaulted on an Energy Week 47 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
06/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on an Energy Week 47 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
13/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on an Energy Week 48 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
14/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on a Capacity November 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
15/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on a FMOC November 2017 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
15/12/2017	Money In	Timing	Participant	Payment Default	Harp Energy Supply Limited (PT_400217) defaulted on a FMOC November 2017 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
15/12/2017	Money In	Timing	Participant	Payment Default	Harp Energy Supply Limited (PT_400218) defaulted on a FMOC November 2017 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
15/12/2017	Money In	Timing	Participant	Payment Default	Megawatts Power Trading Limited (PT_400219) defaulted on a FMOC November 2017 Invoice.	Participant Error	A default letter was issued to the Participant.	Major
15/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on a VMOC Week 48 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
20/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on an Energy Week 49 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
20/12/2017	Money In	Timing	Participant	Payment Default	Indaver Energy Ltd (PT_400088) defaulted on an Energy Week 49 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
20/12/2017	Money In	Timing	Participant	Payment Default	Mantlin Limited (PT_500039) defaulted on an Energy Week 49 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
20/12/2017	Money In	Timing	Participant	Payment Default	iPower Solutions Limited (PT_500054) defaulted on a Capacity October 2017 Ad Hoc Invoice.	Participant Error	A default letter was issued to the Participant.	Major
20/12/2017	Money In	Timing	Participant	Payment Default	ACTIVATION ENERGY DSU LTD (PT_500098) defaulted on a Capacity October 2017 AdHoc Invoice.	Participant Error	A default letter was issued to the Participant.	Major
22/12/2017	Money In	Timing	Participant	Payment Default	Aughrim Power Supply Limited (PT_400119) defaulted on a VMOC Week 49 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
22/12/2017	Money In	Timing	Participant	Payment Default	DWL Energy Supply Limited (PT_400166) defaulted on a VMOC Week 49 2017 Initial Invoice.	Participant Error	A default letter was issued to the Participant.	Major
29/12/2017	Money In	Timing	Participant	Payment Default	Just Energy (Ireland) Limited (PT_400221) defaulted on a VMOC Week 49 2017 Initial 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 December 2017.

SEMO – Settlements

There were no issues to report in December 2017.

SEMO - Funds Transfer

There were no issues to report in December 2017.

SEMO - Credit Management

There were no issues to report in December 2017.

SEMO – Other

There were no issues to report in December 2017.

Appendix B: List of Queries by Type

Summary Title	Description	ID	Logged On	Date sent to MP	Type
Meter Generation	Issue with the indicative energy Settlement on 11th December 2017 affecting both Supplier units under PT_500028 and PT_500036. At interval ending 13:30 the NDA value looks incorrect and is out of line with all other intervals. This has resulted in SNDLF being 5 times greater than NDLF which has substantially increased supplier charges for this period. We believe there is an issue with the NDA / REVLF for N.Ireland. For example, for PT_500036 these are the PIR values for the interval in question: NDLF:114.398, NDA:-582.9277019, SNDLF: - 727.32570193	F0075992	2017-12-13	2017-12-13	Data
Meter Generation	GU_402190 (Castlepeak Windfarm) No meter generation values. GU_402190 (Castlepeak Windfarm). The unit was running and produced small value of meter gen. for this date but there are no values in the SEM data.	F0076050	2017-12-18	2017-12-19	Settlement
SO-SO Trades	Incorrect SO costs submitted for Moyle NG 18/10/17. As per attached spreadsheet please see the costs updated in periods 12,1 12,2 and 13,1	F0075841	2017-12-06	2017-12-18	Settlement
SO-SO Trades	Incorrect SO costs submitted for Moyle NG 18/10/17. As per attached spreadsheet please see the costs updated in periods 7,2 8,1 8,2 9,1 and 9,2	F0078542	2017-12-06	2017-12-18	Settlement
Dispatch Instructions	GU_400325 (PBB). There were a number of dispatch instructions issued from the period 09:21 for this unit but they have not transferred to settlement data which is resulting in high U.I.'s for the period 09:30 to 13:30.	F0076114	2017-12-20	2018-01-11	Settlement
Loss Adjustment Factors	We believe the calculation is incorrect for the Indicative Energy settlement for 17/12/2017 and 18/12/2017 for PT_500034 GU_501680. I have replicated the calculation and I am not getting the same answer as in the statements. The ENPEX values for the trading day of 17/12/2017 appear to be missing from both statements (18 hours in 17/12/2017 and 6 hours within 18/12/2017). This has resulted in zero values for these intervals and therefore the statement values are incorrect. I have attached the statements downloaded from Type 2.	F0076093	2017-12-20	2017-12-20	Data

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 were no Market Application defect found in December 2017.

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

Table 18 - List of System Errors and Failures

Appendix D: Details of Operational Timings

Market Schedule and Price Runs

Operational Day	EA1 Postings		EA2 Postings		WD1 Postings		EP1 Postings		EP2 Postings	
	Target	Actual								
01/12/2017	11:00	09:53	13:00	12:11	09:30	08:13	16:00	14:27	17:00	14:29
02/12/2017	11:00	09:53	13:00	11:51	09:30	08:17	16:00	14:29	17:00	14:44
03/12/2017	11:00	09:46	13:00	11:44	09:30	08:17	16:00	14:28	17:00	14:25
04/12/2017	11:00	09:47	13:00	11:48	09:30	08:24	16:00	14:29	17:00	14:40
05/12/2017	11:00	09:47	13:00	11:45	09:30	08:14	16:00	14:47	17:00	14:21
06/12/2017	11:00	10:13	13:00	12:03	09:30	08:23	16:00	14:27	17:00	15:03
07/12/2017	11:00	09:45	13:00	11:43	09:30	08:21	16:00	14:56	17:00	14:36
08/12/2017	11:00	09:47	13:00	11:43	09:30	08:36	16:00	14:24	17:00	15:11
09/12/2017	11:00	09:51	13:00	11:45	09:30	08:21	16:00	14:52	17:00	15:00
10/12/2017	11:00	09:54	13:00	11:42	09:30	08:18	16:00	14:36	17:00	14:37
11/12/2017	11:00	09:44	13:00	11:49	09:30	08:26	16:00	15:11	17:00	14:24
12/12/2017	11:00	09:44	13:00	11:41	09:30	08:32	16:00	14:37	17:00	14:21
13/12/2017	11:00	09:49	13:00	11:51	09:30	08:22	16:00	14:42	17:00	14:19
14/12/2017	11:00	09:51	13:00	11:50	09:30	08:14	16:00	14:26	17:00	15:01
15/12/2017	11:00	09:50	13:00	11:41	09:30	08:25	16:00	14:24	17:00	14:27
16/12/2017	11:00	09:42	13:00	11:40	09:30	08:13	16:00	14:17	17:00	14:38
17/12/2017	11:00	09:44	13:00	11:42	09:30	08:11	16:00	14:29	17:00	15:14
18/12/2017	11:00	09:46	13:00	11:39	09:30	08:24	16:00	14:36	17:00	14:37
19/12/2017	11:00	09:48	13:00	11:41	09:30	08:21	16:00	14:43	17:00	14:29
20/12/2017	11:00	10:36	13:00	12:03	09:30	08:23	16:00	15:12	17:00	14:38
21/12/2017	11:00	09:43	13:00	11:42	09:30	08:11	16:00	14:59	17:00	14:23
22/12/2017	11:00	10:03	13:00	11:59	09:30	08:29	16:00	14:34	17:00	14:31
23/12/2017	11:00	10:05	13:00	11:50	09:30	08:12	16:00	14:46	17:00	14:50
24/12/2017	11:00	09:43	13:00	11:40	09:30	08:21	16:00	14:25	17:00	14:19
25/12/2017	11:00	09:41	13:00	11:39	09:30	08:23	16:00	14:30	17:00	14:26
26/12/2017	11:00	09:53	13:00	11:49	09:30	08:19	16:00	14:52	17:00	14:32
27/12/2017	11:00	09:44	13:00	11:49	09:30	08:27	16:00	14:23	17:00	14:32
28/12/2017	11:00	09:53	13:00	12:04	09:30	08:13	16:00	14:29	17:00	14:26
29/12/2017	11:00	09:48	13:00	11:45	09:30	08:14	16:00	14:31	17:00	14:31
30/12/2017	11:00	09:58	13:00	12:14	09:30	08:16	16:00	14:35	17:00	14:43
31/12/2017	11:00	09:51	13:00	11:50	09:30	08:23	16:00	14:31	17:00	14:21

Table 19 – MSP Runs

Market Operator Monthly Report

Settlement Runs

Indicative				Initial			
Trading	Actual	Target	Actual	Trading	Actual	Target	Actual
Day	Date	Time	Time	Day	Date	Time	Time
01/12/2017	04/12/2017	17:00	13:11	01/12/2017	08/12/2017	12:00	11:31
02/12/2017	04/12/2017	17:00	14:21	02/12/2017	08/12/2017	12:00	12:00
03/12/2017	04/12/2017	17:00	16:11	03/12/2017	08/12/2017	12:00	12:00
04/12/2017	05/12/2017	17:00	15:43	04/12/2017	11/12/2017	12:00	09:24
05/12/2017	06/12/2017	17:00	15:56	05/12/2017	12/12/2017	12:00	07:35
06/12/2017	07/12/2017	17:00	16:14	06/12/2017	13/12/2017	12:00	09:02
07/12/2017	08/12/2017	17:00	16:02	07/12/2017	14/12/2017	12:00	08:12
08/12/2017	11/12/2017	17:00	11:22	08/12/2017	15/12/2017	12:00	12:04
09/12/2017	11/12/2017	17:00	12:29	09/12/2017	15/12/2017	12:00	12:00
10/12/2017	11/12/2017	17:00	16:07	10/12/2017	15/12/2017	12:00	12:00
11/12/2017	12/12/2017	17:00	16:21	11/12/2017	18/12/2017	12:00	09:10
12/12/2017	13/12/2017	17:00	16:09	12/12/2017	19/12/2017	12:00	07:46
13/12/2017	14/12/2017	17:00	15:49	13/12/2017	20/12/2017	12:00	07:59
14/12/2017	15/12/2017	17:00	15:34	14/12/2017	21/12/2017	12:00	08:00
15/12/2017	18/12/2017	17:00	11:26	15/12/2017	22/12/2017	12:00	11:06
16/12/2017	18/12/2017	17:00	12:33	16/12/2017	22/12/2017	12:00	12:00
17/12/2017	18/12/2017	17:00	16:40	17/12/2017	22/12/2017	12:00	12:00
18/12/2017	19/12/2017	17:00	16:04	18/12/2017	28/12/2017	12:00	09:36
19/12/2017	20/12/2017	17:00	16:02	19/12/2017	28/12/2017	12:00	09:51
20/12/2017	21/12/2017	17:00	16:27	20/12/2017	28/12/2017	12:00	10:05
21/12/2017	22/12/2017	17:00	16:00	21/12/2017	28/12/2017	12:00	10:34
22/12/2017	28/12/2017	17:00	09:35	22/12/2017	28/12/2017	12:00	11:22
23/12/2017	28/12/2017	17:00	09:52	23/12/2017	28/12/2017	12:00	12:00
24/12/2017	28/12/2017	17:00	10:05	24/12/2017	29/12/2017	12:00	08:30
25/12/2017	28/12/2017	17:00	10:35	25/12/2017	02/01/2018	12:00	07:41
26/12/2017	28/12/2017	17:00	10:54	26/12/2017	02/01/2018	12:00	09:48
27/12/2017	28/12/2017	18:00	15:55	27/12/2017	03/01/2018	12:00	09:11
28/12/2017	29/12/2017	19:00	15:32	28/12/2017	04/01/2018	12:00	08:58
29/12/2017	02/01/2017	20:00	10:23	29/12/2017	05/01/2018	12:00	11:37
30/12/2017	02/01/2017	21:00	11:17	30/12/2017	05/01/2018	12:00	12:00
31/12/2017	02/01/2017	21:00	13:20	31/12/2017	05/01/2018	12:00	12:00

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

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

16/12/2017	€593,022.52	-€23,860.19	-€512,250.90
17/12/2017	€510,323.80	-€11,485.40	-€475,824.38
18/12/2017	€381,066.43	-€25,323.29	-€554,350.08
19/12/2017	€408,521.30	-€26,218.06	-€530,127.96
20/12/2017	€589,087.85	-€24,212.41	-€541,635.65
21/12/2017	€395,008.92	-€15,727.05	-€528,633.55
22/12/2017	€704,163.60	-€29,023.77	-€502,975.18
23/12/2017	€605,894.69	-€2,097.68	-€446,615.17
24/12/2017	€745,480.37	-€2,837.73	-€417,920.96
25/12/2017	€505,582.39	€28,749.08	-€428,742.86
26/12/2017	€494,665.97	-€4,325.18	-€419,663.54
27/12/2017	€511,537.54	-€16,064.34	-€451,850.34
28/12/2017	€467,815.85	-€33,753.24	-€501,168.94
29/12/2017	€482,934.53	-€17,451.57	-€469,482.14
30/12/2017	€658,719.76	-€12,195.60	-€451,320.89
31/12/2017	€904,660.41	-€40,768.23	-€425,145.60

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

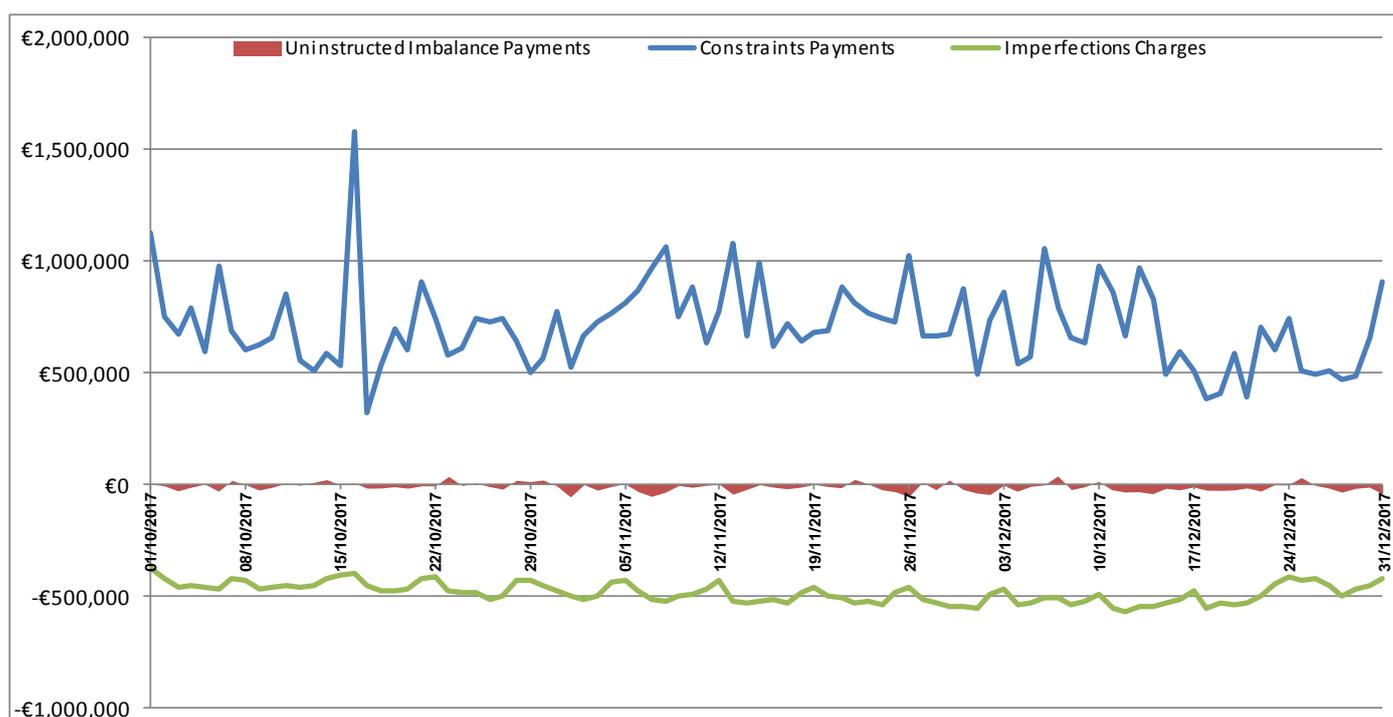


Figure 24 - Constraint Payments, Uninstructed Imbalance Payments, and Imperfections Charges

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
48	€115,343.57
49	€128,242.43
50	€41,192.83
51	€94,676.92
52	€172,216.83

Table 22 - Make Whole Payments

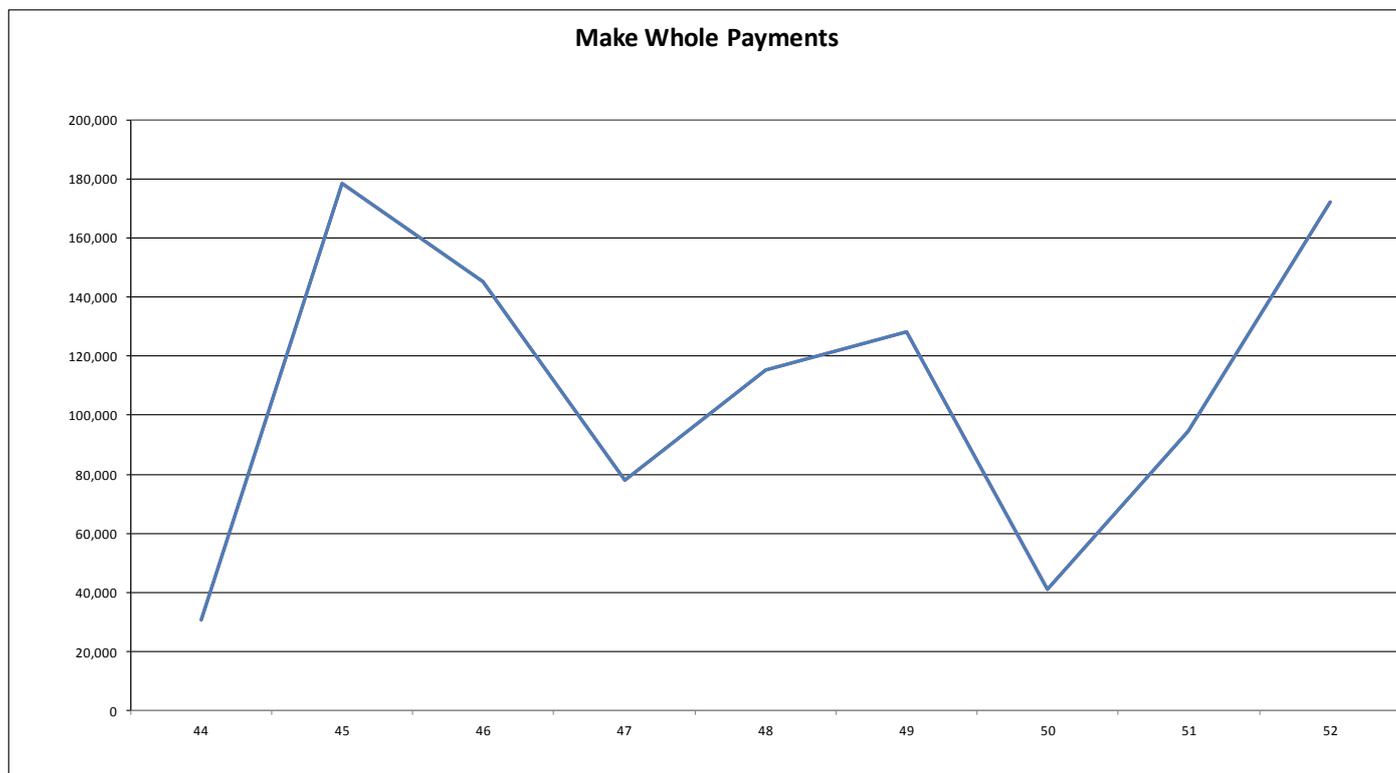


Figure 25 - Make Whole Payments

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
48	-€37,036.09
49	-€22,408.67
50	€0.00
51	€0.00
52	€0.00

Table 23 - Testing Charges

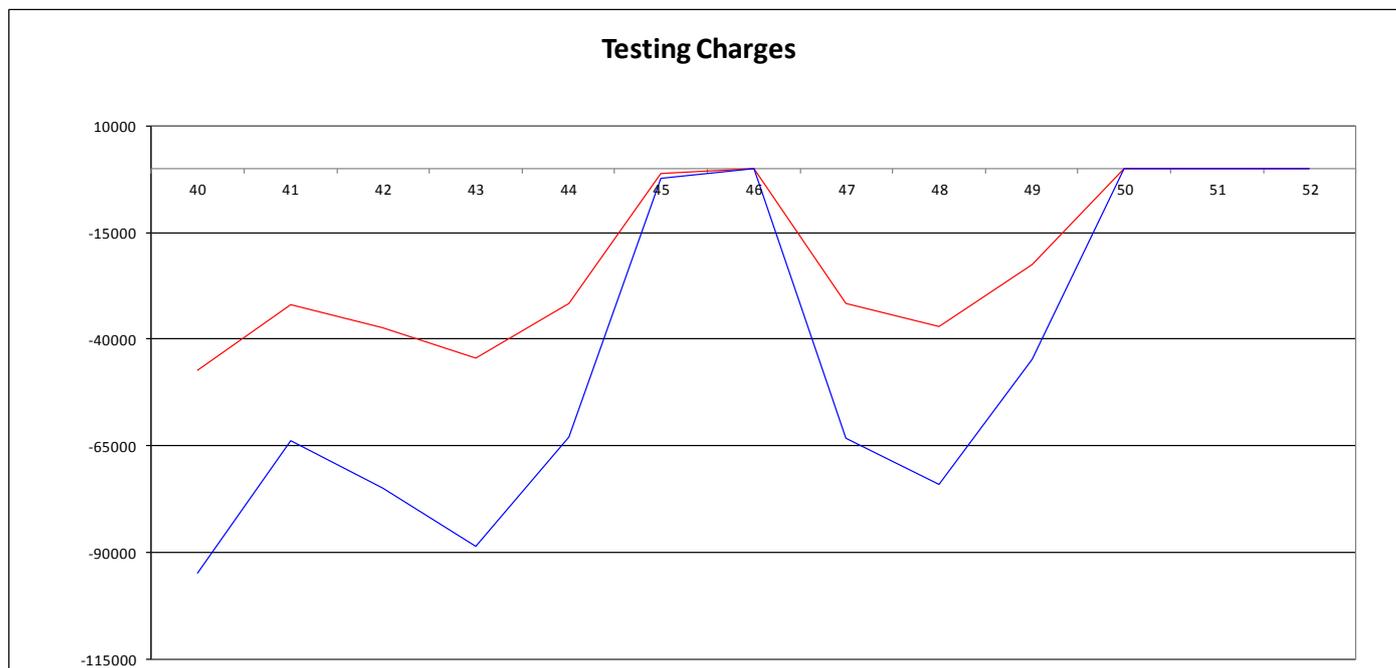


Figure 26 - Testing Charges

Appendix F: Default Commercial Offer Data Used

The table below lists for each unit the number of times in operations during December 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_500099	DSU_501460	29			29
PT_400138	DSU_401590	31			31
PT_400090	DSU_401610	19			19
PT_400124	DSU_401880	26			26
PT_400133	DSU_401910	24			24
PT_400116	DSU_401400	13			13
PT_500067	DSU_501380	6			6
PT_400116	DSU_402100	13			13
PT_400106	DSU_401330	33			33
PT_400138	DSU_402040	31			31
PT_500105	DSU_501510	2			2
PT_400133	DSU_401530	24			24
PT_400124	DSU_401490	31			31
PT_400024	GU_400120	31			31
PT_400024	GU_400121	31			31
PT_400030	GU_400180	40			40
PT_400030	GU_400181	42			42
PT_400030	GU_400182	42			42
PT_400030	GU_400183	41			41
PT_400030	GU_400200	39			39
PT_400030	GU_400201	39			39
PT_400030	GU_400202	39			39
PT_400030	GU_400203	41			41
PT_400030	GU_400210	38			38
PT_400030	GU_400211	38			38
PT_400030	GU_400220	38			38
PT_400030	GU_400221	38			38
PT_400030	GU_400240	38			38
PT_400030	GU_400250	38			38
PT_400030	GU_400251	38			38
PT_400030	GU_400252	39			39
PT_400030	GU_400260	38			38
PT_400030	GU_400270	40			40
PT_400030	GU_400271	39			39
PT_400030	GU_400272	40			40
PT_400030	GU_400280	39			39
PT_400030	GU_400281	39			39
PT_400030	GU_400290	40			40
PT_400030	GU_400300	40			40
PT_400030	GU_400311	41			41
PT_400030	GU_400324	41			41
PT_400030	GU_400325	42			42
PT_400030	GU_400360	38			38
PT_400030	GU_400361	38			38

Market Operator Monthly Report

PT_400030	GU_400362	38		38
PT_400030	GU_400363	39		39
PT_400030	GU_400370	38		38
PT_400030	GU_400850	42		42
PT_400030	GU_402080	21		21
PT_400032	GU_400430	30		30
PT_400034	GU_400940	30		30
PT_400034	GU_401090	30		30
PT_400034	GU_401440	30		30
PT_400034	GU_401680	30		30
PT_400035	GU_400480	58		58
PT_400037	GU_400500	32		32
PT_400041	GU_400530	60		60
PT_400044	GU_400540	58		58
PT_400054	GU_400620	30		30
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_400762	31		31
PT_400064	GU_400770	31		31
PT_400064	GU_400771	31		31
PT_400064	GU_400780	31		31
PT_400064	GU_400781	31		31
PT_400075	GU_400930	44		44
PT_400077	GU_400950	29		29
PT_400078	GU_401010	31		31
PT_400078	GU_401011	31		31
PT_400165	GU_401840	31		31
PT_400172	GU_401860	32		32
PT_400198	GU_402030	29		29
PT_500024	GU_500040	39		39
PT_500024	GU_500041	32		32
PT_500027	GU_500130	91		91
PT_500027	GU_500131	91		91
PT_500027	GU_500140	91		91
PT_500034	GU_501350	32		32
PT_500040	GU_500281	63		63
PT_500040	GU_500282	63		63
PT_500040	GU_500283	31		31
PT_500040	GU_500284	31		31
PT_500045	GU_500820	31		31
PT_500045	GU_500821	31		31
PT_500045	GU_500822	31		31
PT_500045	GU_500823	31		31
PT_500045	GU_500824	31		31
PT_500045	GU_500825	31		31
PT_500048	GU_500904	42		42
PT_500050	GU_501040	30		30
PT_500050	GU_501050	30		30
PT_500050	GU_501150	30		30
PT_500050	GU_501190	30		30

Market Operator Monthly Report

PT_500050	GU_501430	33		33
PT_500050	GU_501440	30		30
PT_500053	GU_501130	31		31
PT_500066	GU_501210	30		30
PT_500110	GU_501580	15		15
PT_500083	I_NIMOYLE	92		92
PT_400201	I_ROIEWIC	38		38
PT_500075	I_NIMOYLE	89		89
PT_500024	I_NIMOYLE	31		31
PT_400163	I_ROIEWIC	89		89
PT_500069	I_NIMOYLE	89		89
PT_500031	I_NIMOYLE	31		31
PT_400157	I_ROIEWIC	61		61
PT_500037	I_NIMOYLE	2		2
PT_400096	I_ROIEWIC	93		93
PT_400168	I_ROIEWIC	73		73
PT_400136	I_ROIEWIC	93		93
PT_400115	I_ROIEWIC	31		31
PT_500081	I_NIMOYLE	60		60
PT_500107	I_NIMOYLE	10		10
PT_400188	I_ROIEWIC	15		15
PT_400171	I_ROIEWIC	59		59
PT_400108	I_ROIEWIC	66		66
PT_500070	I_NIMOYLE	61		61
PT_400164	I_ROIEWIC	46		46
PT_500120	I_NIMOYLE	38		38
PT_500092	I_NIMOYLE	59		59
PT_500085	I_NIMOYLE	46		46
PT_400030	I_ROIEWIC	31		31
PT_400099	I_ROIEWIC	30		30
PT_400116	DSU_401400		19	19
PT_400090	DSU_401620		31	31
PT_400144	DSU_401660		31	31
PT_400116	DSU_402120		31	31
PT_400090	DSU_401800		31	31
PT_500078	DSU_501330		31	31
PT_400090	DSU_401850		31	31
PT_500064	DSU_501200		31	31
PT_500105	DSU_501510		29	29
PT_400090	DSU_401270		31	31
PT_400090	DSU_401610		12	12
PT_500099	DSU_501460		2	2
PT_500067	DSU_501380		26	26
PT_400106	DSU_401330		1	1
PT_400111	DSU_401390		31	31
PT_400116	DSU_402100		19	19
PT_400133	DSU_401910		7	7
PT_400116	DSU_401870		31	31
PT_500098	DSU_501450		31	31
PT_500108	DSU_501560		31	31
PT_400133	DSU_401530		7	7
PT_400124	DSU_401880		5	5
PT_400116	DSU_402090		31	31

Market Operator Monthly Report

PT_400021	GU_400021			31	31
PT_400021	GU_400050			31	31
PT_400021	GU_400060			31	31
PT_400021	GU_400070			31	31
PT_400021	GU_400080			31	31
PT_400021	GU_400591			31	31
PT_400021	GU_400600			31	31
PT_400021	GU_400910			31	31
PT_400021	GU_400920			31	31
PT_400021	GU_401080			31	31
PT_400021	GU_401380			31	31
PT_400021	GU_401640			31	31
PT_400021	GU_401960			31	31
PT_400021	GU_401990			31	31
PT_400025	GU_400130			31	31
PT_400032	GU_400430			2	2
PT_400034	GU_400940			2	2
PT_400034	GU_401090			2	2
PT_400034	GU_401440			2	2
PT_400034	GU_401680			2	2
PT_400038	GU_400550			31	31
PT_400050	GU_400650			31	31
PT_400050	GU_400660			31	31
PT_400050	GU_401000			31	31
PT_400050	GU_401060			31	31
PT_400050	GU_401150			31	31
PT_400050	GU_401240			31	31
PT_400050	GU_401250			31	31
PT_400050	GU_401280			31	31
PT_400050	GU_401290			31	31
PT_400050	GU_401360			31	31
PT_400050	GU_401790			31	31
PT_400050	GU_401920			31	31
PT_400050	GU_401930			31	31
PT_400050	GU_402010			31	31
PT_400054	GU_400620			2	2
PT_400055	GU_400630			2	2
PT_400062	GU_400730			31	31
PT_400062	GU_400731			31	31
PT_400062	GU_400840			31	31
PT_400066	GU_401540			31	31
PT_400066	GU_401820			31	31
PT_400077	GU_400950			3	3
PT_400082	GU_401100			31	31
PT_400087	GU_401230			31	31
PT_400148	GU_401690			31	31
PT_400150	GU_401700			31	31
PT_400151	GU_401770			31	31
PT_400151	GU_401780			31	31
PT_400152	GU_401710			31	31
PT_400152	GU_401720			31	31
PT_400152	GU_401730			31	31
PT_400152	GU_401740			31	31

Market Operator Monthly Report

PT_400152	GU_401750			31	31
PT_400152	GU_401760			31	31
PT_400162	GU_401830			31	31
PT_400178	GU_401900			31	31
PT_400197	GU_402020			31	31
PT_400198	GU_402030			4	4
PT_500021	GU_500010			31	31
PT_500021	GU_500740			31	31
PT_500021	GU_501160			31	31
PT_500021	GU_501500			31	31
PT_500021	GU_501520			31	31
PT_500021	GU_501620			31	31
PT_500021	GU_501630			31	31
PT_500032	GU_500211			31	31
PT_500032	GU_501120			31	31
PT_500032	GU_501280			31	31
PT_500032	GU_501290			31	31
PT_500032	GU_501300			31	31
PT_500032	GU_501400			31	31
PT_500032	GU_501530			31	31
PT_500032	GU_501540			31	31
PT_500032	GU_501570			31	31
PT_500039	GU_500270			31	31
PT_500044	GU_500720			31	31
PT_500047	GU_500790			31	31
PT_500050	GU_501040			2	2
PT_500050	GU_501050			2	2
PT_500050	GU_501150			2	2
PT_500050	GU_501190			2	2
PT_500050	GU_501440			2	2
PT_500061	GU_501170			31	31
PT_500062	GU_501180			31	31
PT_500066	GU_501210			2	2
PT_500073	GU_501230			31	31
PT_500074	GU_501250			31	31
PT_500089	GU_501360			31	31
PT_500110	GU_501580			17	17
	Total	4973	0	2473	7446
	Percentage	66.79%	0.00%	33.21%	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	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
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	€34,355.82	€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	€106,835,064.33	€27,957,453.42	€397,100.73	€98,040.58	€2,984.78	€91,151.49	€20,818.71	€556.31	€396,745.88	€173,793.95	€644.35	€135,914,354.53
	NI	€37,790,994.99	€9,466,911.04	€181,354.27	€40,293.46	€1,305.84	€45,734.51	€11,769.44	€290.16	€57,624.89	€31,404.66	€288.16	€47,627,971.42
Dec-17	ROI	€106,835,064.33	€27,957,453.42	€397,100.73	€98,040.58	€2,984.78	€91,151.49	€20,818.71	€556.31	€396,745.88	€173,793.95	€644.35	€135,914,354.53
	NI	€37,790,994.99	€9,466,911.04	€181,354.27	€40,293.46	€1,305.84	€45,734.51	€11,769.44	€290.16	€57,624.89	€31,404.66	€288.16	€47,627,971.42

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
01/12/2017	48	€1,330,336.80	€0
08/12/2017	49	€1,452,421.60	€0
15/12/2017	50	€1,454,433.85	€0
22/12/2017	51	-€120,183.03	€0
29/12/2017	52	€668,708.17	€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
Nov-17	€-313.06	€0

Table 28 - Balancing Costs for Capacity Settlement

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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>	
<u>December 2017</u>		<u>01/12/2017</u> <u>20/12/2017</u> <u>22/12/2017</u> <u>28/12/2017</u>	<u>07/12/2017</u> <u>09/12/2017</u> <u>20/12/2017</u> <u>21/12/2017</u>	<u>06/12/2017</u> <u>09/12/2017</u> <u>14/12/2017</u> <u>20/12/2017</u>	

Table 29 - MIP Algorithms

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Operational Date	Trade Date	Run Type	LR Peak SMP	MIP Peak SMP	Published
01/10/2016	01/10/2016	WD1	€629.67	€174.47	MIP
02/10/2016	03/10/2016	EA2	(€100)	€213.50	MIP
03/10/2016	02/10/2016	EP1	(€100)	€67.66	MIP
08/10/2016	04/10/2016	EP2	€670.56	€530.47	MIP
11/10/2016	07/10/2016	EP2	€779.29	€279.06	MIP
12/10/2016	08/10/2016	EP2	€761.10	€271.73	MIP
13/10/2016	12/10/2016	EP1	€536.13	€536.13	MIP
25/10/2016	26/10/2016	EA2	€1,000	€176.89	MIP
25/10/2016	24/10/2016	EP1	€778.40	€542.17	MIP
25/10/2016	25/10/2016	WD1	€780.67	€184.41	MIP
26/10/2016	26/10/2016	WD1	€520.07	€520.07	MIP
28/10/2016	24/10/2016	EP2	€778.25	€542.17	MIP
28/10/2016	28/10/2016	WD1	€523.46	€185.11	MIP
29/10/2016	28/10/2016	EP1	€514.56	€226.86	MIP
29/10/2016	25/10/2016	EP2	€780.46	€436.68	MIP
05/11/2016	01/11/2016	EP2	€512.48	€218.59	MIP
10/11/2016	10/11/2016	WD1	€536.74	€190.70	MIP
21/11/2016	17/11/2016	EP2	€531.95	€227.60	MIP
23/11/2016	23/11/2016	WD1	€536.74	€228.93	MIP
24/11/2016	23/11/2016	EA2	€1,000	€373.29	MIP
29/11/2016	29/11/2016	WD1	€541.87	€541.87	MIP
30/11/2016	29/11/2016	EA2	€552.76	€181.28	MIP
30/11/2016	29/11/2016	EP1	€541.87	€270.18	MIP

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01/12/2016	30/11/2016	EP1	€541.59	€207.75	MIP
04/12/2016	30/11/2016	EP2	€541.59	€207.75	MIP
06/12/2016	07/12/2016	EA1	€1,000	€111.24	MIP
08/12/2016	08/12/2016	WD1	(€100)	€191.23	MIP
08/12/2016	09/12/2016	EA1	€940.08	€213.49	MIP
08/12/2016	09/12/2016	EA2	€1,000	€227.15	MIP
09/12/2016	09/12/2016	WD1	€544.89	€226.90	MIP
12/12/2016	13/12/2016	EP1	€550.08	€550.08	MIP
13/12/2016	14/12/2016	EA2	€1,000	€221.53	MIP
15/12/2016	16/12/2016	EA2	€1,000	€97.99	MIP
15/12/2016	14/12/2016	EP1	€551.72	€257.90	MIP
15/12/2016	14/12/2016	EP1	€577.68	€557.94	MIP
16/12/2016	12/12/2016	EP2	€564.56	€550.08	MIP
18/12/2016	14/12/2016	EP2	€551.72	€551.72	MIP
20/12/2016	16/12/2016	EP2	€1,000	€551.25	MIP
21/12/2016	22/12/2016	EA2	€1,000	€188.21	MIP
22/12/2016	18/12/2016	EP2	€552.30	€375.21	MIP
01/01/2017	31/12/2016	EP1	€581.16	€238.04	MIP
03/01/2017	04/01/2017	EA2	€1,000	€250.11	MIP
12/01/2017	08/01/2017	EP2	€-100	€-100	MIP
19/01/2017	18/01/2017	EA2	€1,000	€187.49	MIP
23/01/2017	22/01/2017	EP1	€546.36	€111.81	MIP
26/01/2017	27/01/2017	EA2	€1000	€225.25	MIP
26/01/2017	22/01/2017	EP2	€546.36	€101.73	MIP

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28/01/2017	27/01/2017	EP1	€544.22	€544.22	MIP
30/01/2017	31/01/2017	EA2	€1000	€236.42	MIP
30/01/2017	29/01/2017	EP1	€553.05	€553.05	MIP
31/01/2017	31/01/2017	WD1	€554.03	€554.03	MIP
31/01/2017	27/01/2017	EP2	€544.22	€544.22	MIP
01/02/2017	28/01/2017	EP2	€553.13	€553.38	MIP
04/02/2017	04/02/2017	WD1	€582.64	€553.37	MIP
04/02/2017	03/02/2017	EP1	€533.92	€547.30	MIP
05/02/2017	04/02/2017	EP1	€564.61	€553.37	MIP
06/02/2017	07/02/2017	EA2	€1,000	€122.43	MIP
07/02/2017	07/02/2017	WD1	€552.98	€205.26	MIP
08/02/2017	07/02/2017	EP1	€552.98	€552.98	MIP
08/02/2017	04/02/2017	EP2	€553.37	€553.37	MIP
11/02/2017	07/02/2017	EP2	€552.98	€552.98	MIP
13/02/2017	14/02/2017	EA2	€1,000	€264.26	MIP
17/02/2017	16/02/2017	EP1	€542.10	€542.10	MIP
20/02/2017	20/02/2017	WD1	€1,000	€239.91	MIP
19/02/2017	20/02/2017	EA2	€1,000	€103.71	MIP
25/02/2017	25/02/2017	WD1	€543.19	€219.91	MIP
28/02/2017	27/02/2017	EP1	€596.85	€328.07	MIP
12/03/2017	08/03/2017	EP2	€1,000	€183.28	MIP
08/03/2017	09/03/2017	EA2	€1,000	€203.40	MIP
20/03/2017	20/03/2017	WD1	€1,000	€146.90	MIP
20/03/2017	19/03/2017	EP1	€531.42	€420.26	MIP

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21/03/2017	21/03/2017	WD1	€559.20	€193.39	MIP
22/03/2017	18/03/2017	EP2	€-100	€69.40	MIP
25/03/2017	24/03/2017	EP1	€531.39	€221.11	MIP
28/03/2017	24/03/2017	EP2	€531.39	€227.68	MIP
07/04/2017	03/04/2017	EP2	€1,000	€112.04	MIP
04/04/2017	04/04/2017	WD1	€534.37	€94.60	MIP
13/04/2017	06/04/2017	EP2	€534.89	€118.83	MIP
18/04/2017	17/04/2017	EP1	€1,000	€72.21	MIP
29/04/2017	28/04/2017	EP1	€1,000	€97.01	MIP
30/04/2017	26/04/2017	EP2	€1,000	€74.49	MIP
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

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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
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

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27/11/2017	28/11/2017	EA2	€1,000	€108.33	MIP
28/11/2017	29/11/2017	EA2	€1,000	€187.20	MIP
30/11/2017	29/11/2017	EP1	€1,000	€172.52	MIP
30/11/2017	01/12/2017	EA2	€1000.00	€283.15	MIP
08/12/2017	07/12/2017	EP1	€1000.00	€253.87	MIP
10/12/2017	06/12/2017	EP2	-€100.00	€27.27	MIP
10/12/2017	09/12/2017	EP1	€1000.00	€916.29	MIP
13/12/2017	09/12/2017	EP2	€1000.00	€135.97	MIP
18/12/2017	14/12/2017	EP2	-€100.00	€283.70	MIP
19/12/2017	20/12/2017	EA2	€1000.00	€231.32	MIP
21/12/2017	22/12/2017	EA2	€1000.00	€186.70	MIP
21/12/2017	20/12/2017	EP1	€1000.00	€285.26	MIP
22/12/2017	21/12/2017	EP1	€1000.00	€400.67	MIP
24/12/2017	20/12/2017	EP2	€1000.00	€256.42	MIP
27/12/2017	28/12/2017	EA2	€1000.00	€226.38	MIP

Table 30 - MIP Vs LR Peak Price Comparison