Market Operator User Group

Belfast, 11 December 2018

Agenda

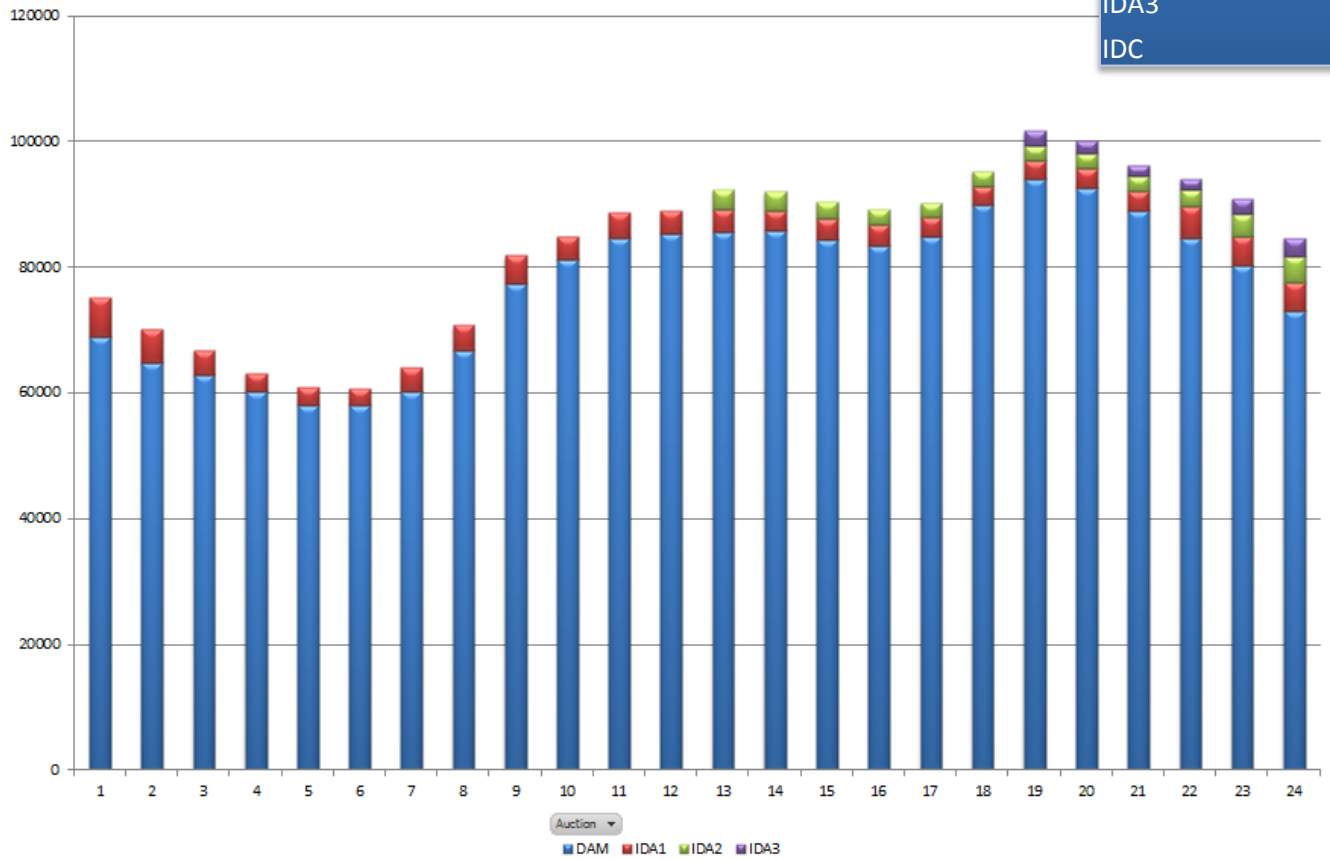
Item	Presenter
Welcome	**Anne Fitzgerald**
Ex-Ante Market	**Liam McAllister**
Balancing Market	Aodhagan Downey, Sam Matthews
Disputes & Repricing Update	Dermot Campfield, Brendan O'Sullivan
Settlements & Cashflow Analysis	Sean O'Rourke, John O'Dea
High Level Market Overview	Brendan O'Sullivan
Known Issues Report Update	Severin Garanzuay
Query Management	Claire Breslin
Q&A	

Ex-Ante Markets

- Volumes from ex-ante (19th Nov - 5th Dec)
  - **DAM** Auction still dominant

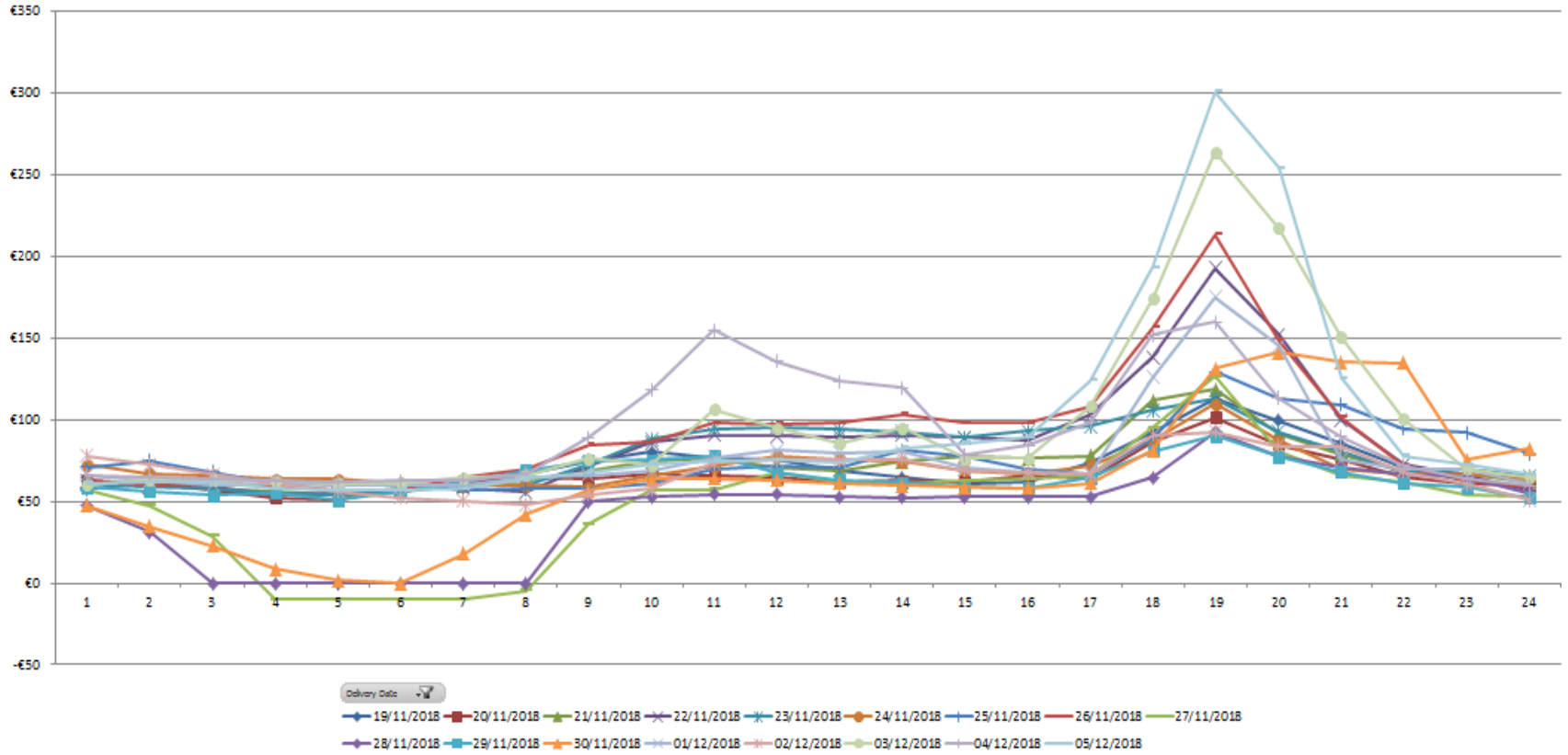
**Using approx. prices*

Market	Value	% of DAM
DAM	€143,563,670	
IDA1	€6,574,904	4.58%
IDA2	€2,867,494	2.00%
IDA3	€1,279,663	0.89%
IDC	€498,472	0.35%



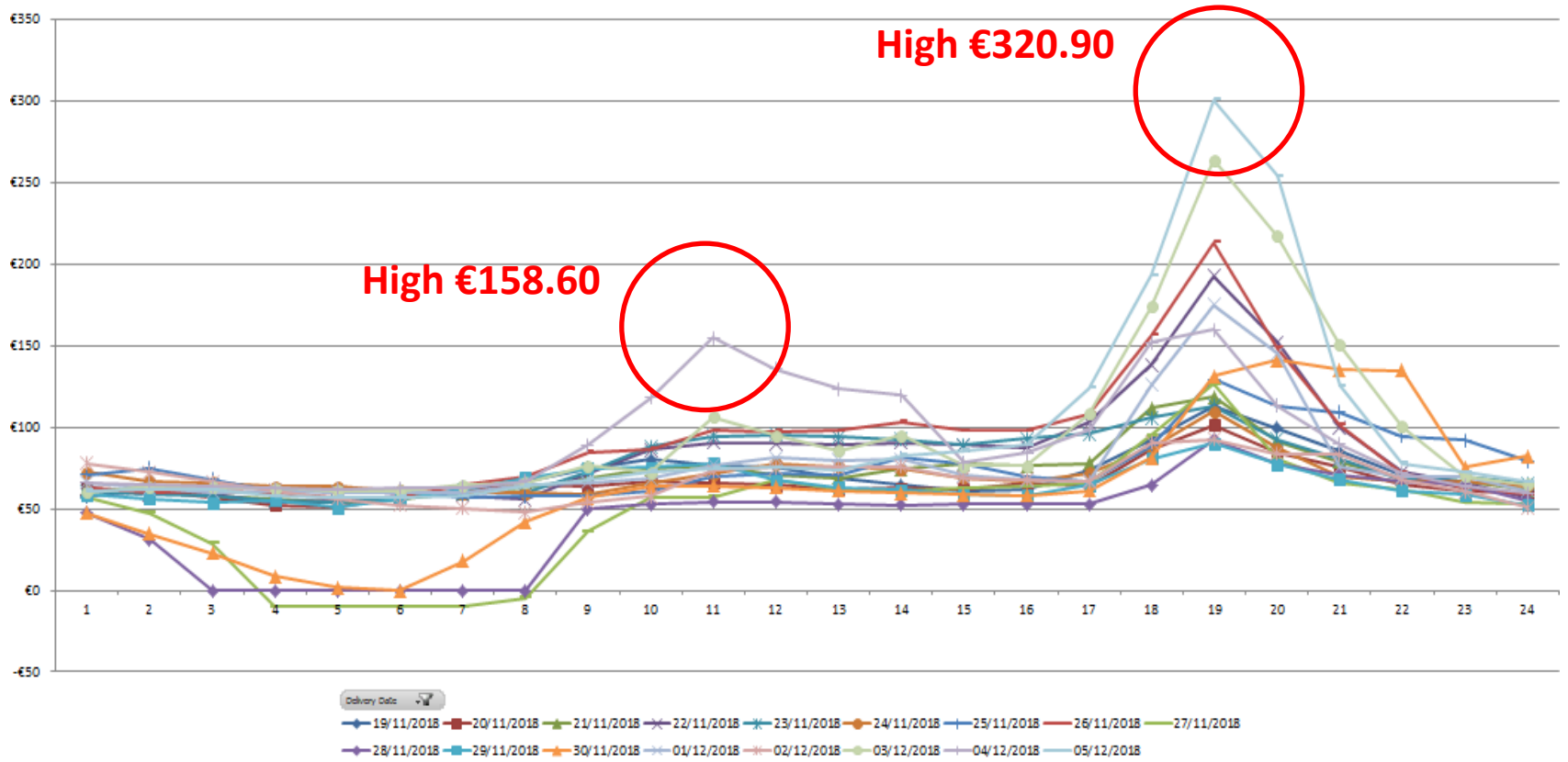
Ex-Ante Markets

- Prices from ex-ante auctions (19th Nov 5th Dec) – Price following Load



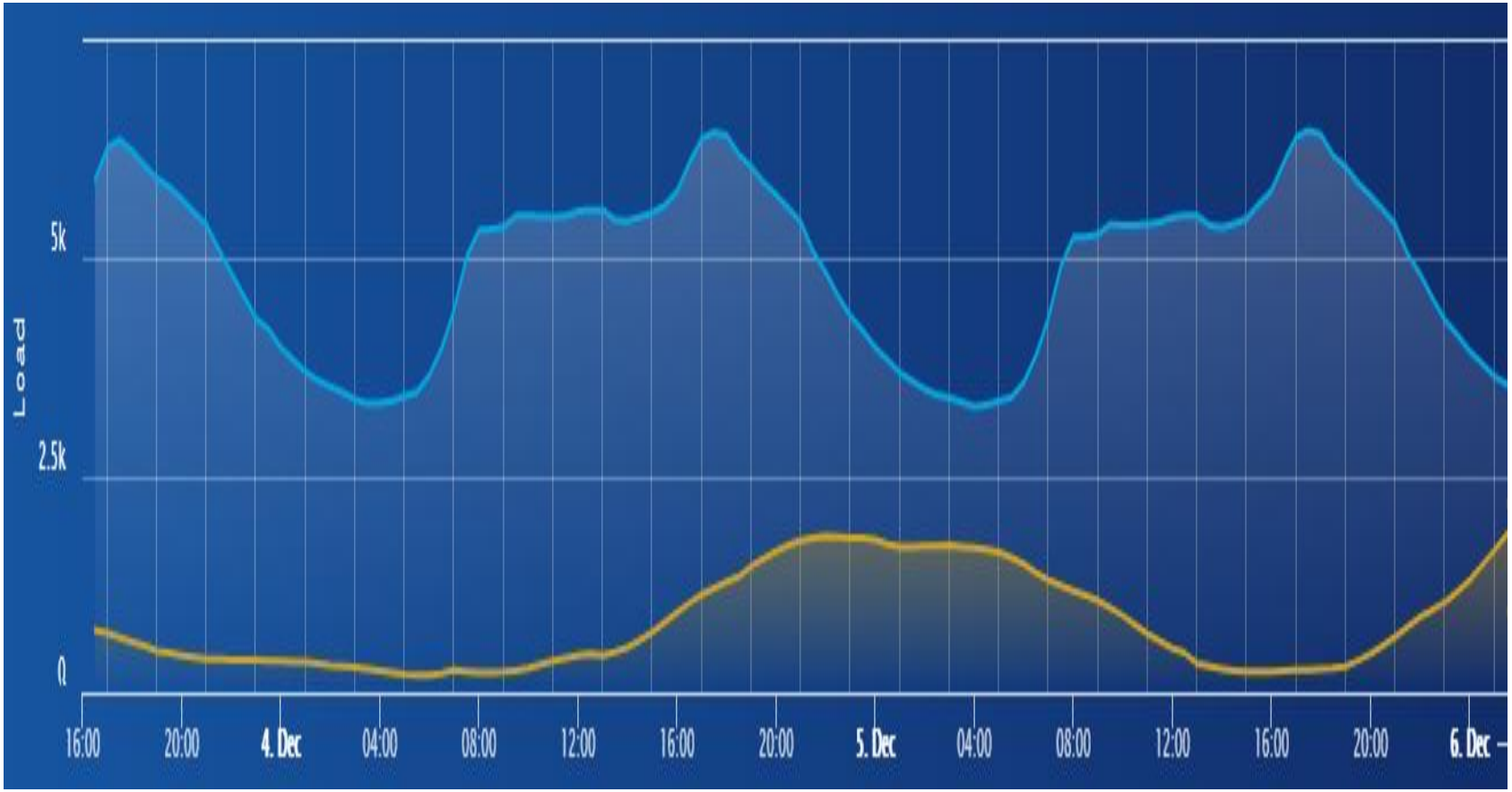
Ex-Ante Markets

- Recent High Prices 4th (11th Hour) and 5th December



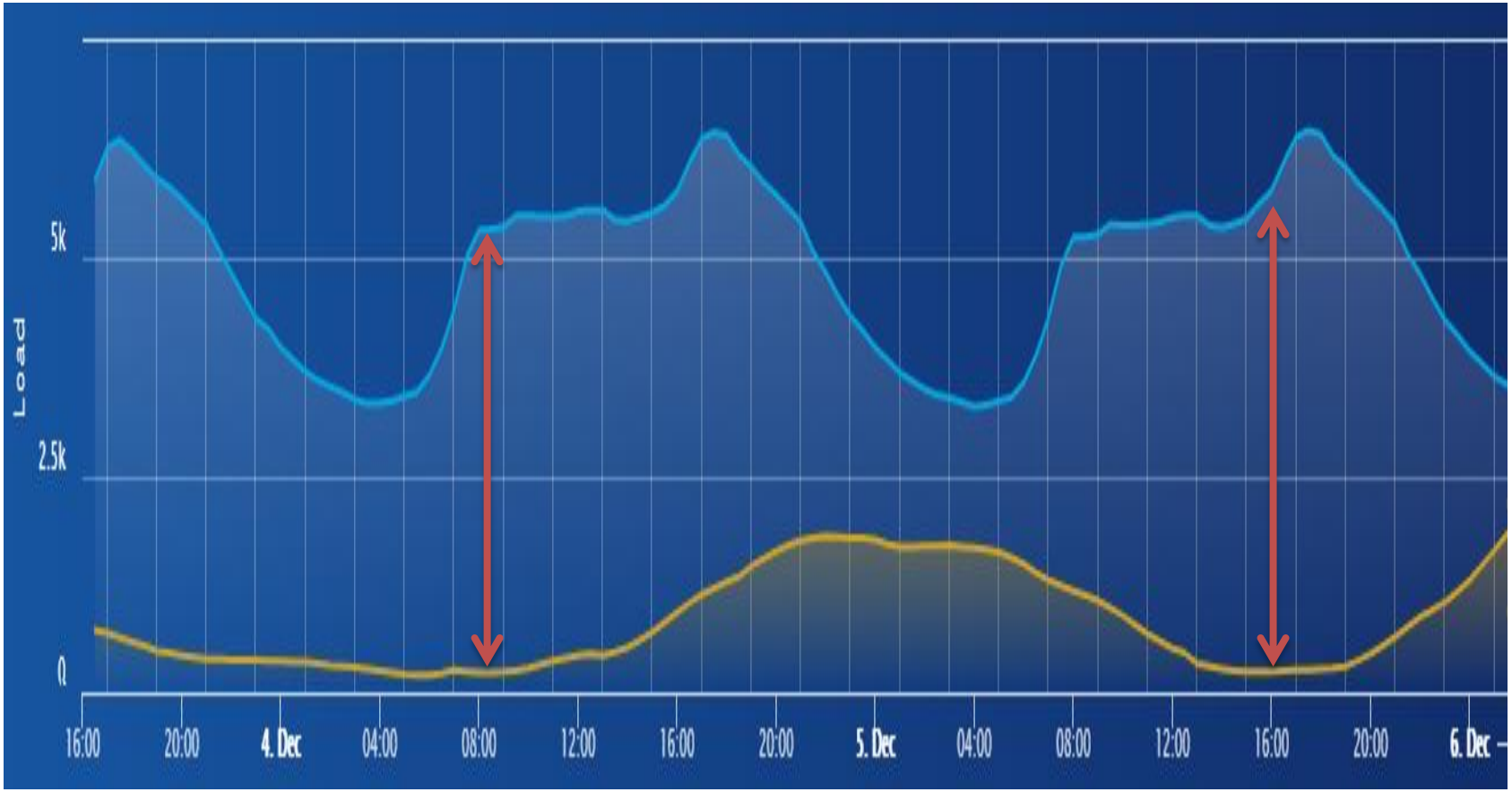
Ex-Ante Market Analysis

- 4th, 5th December – Wind & Load Forecast



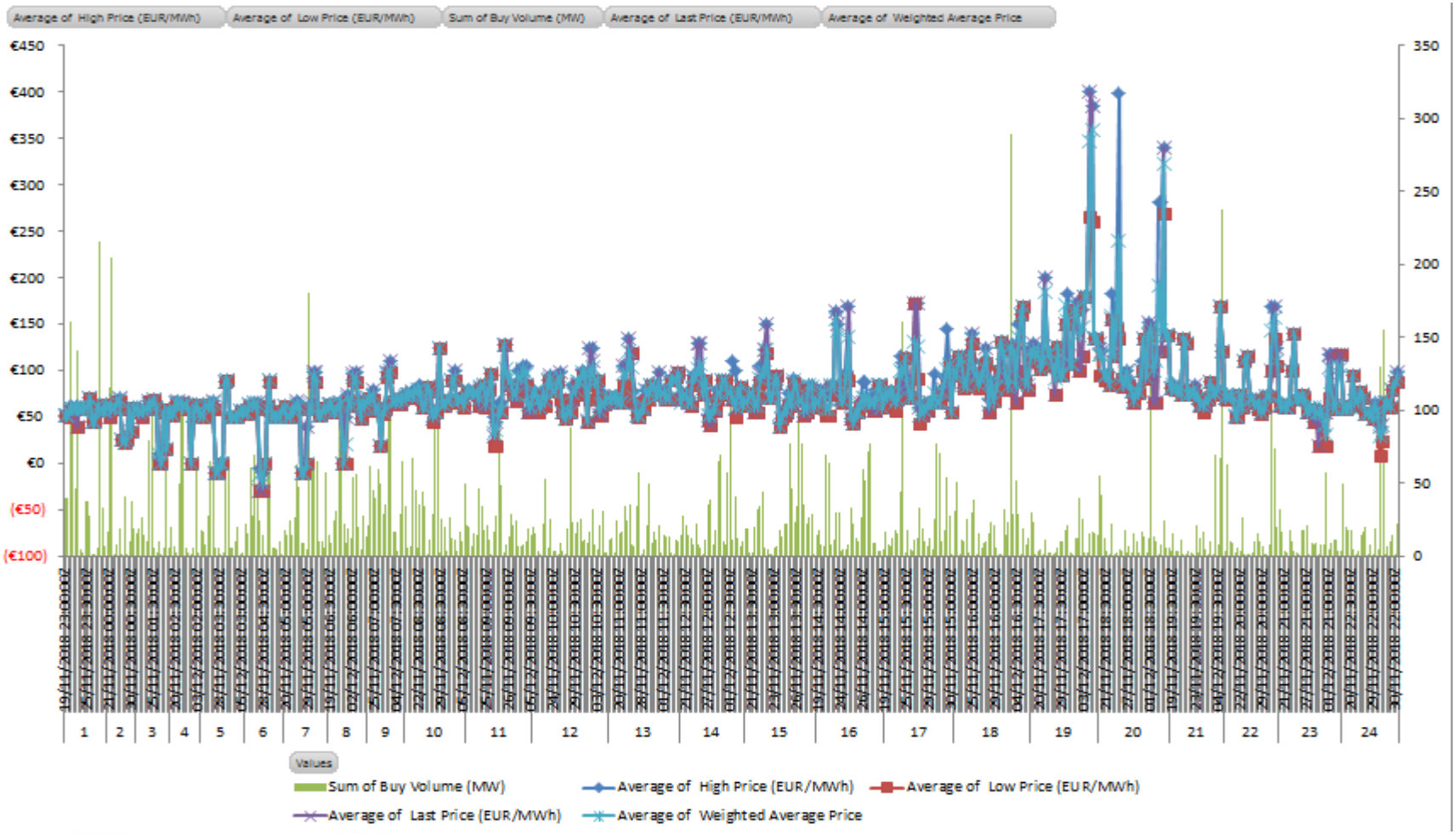
Ex-Ante Market Analysis

- 4th, 5th December – Low Wind during Peak Demand periods



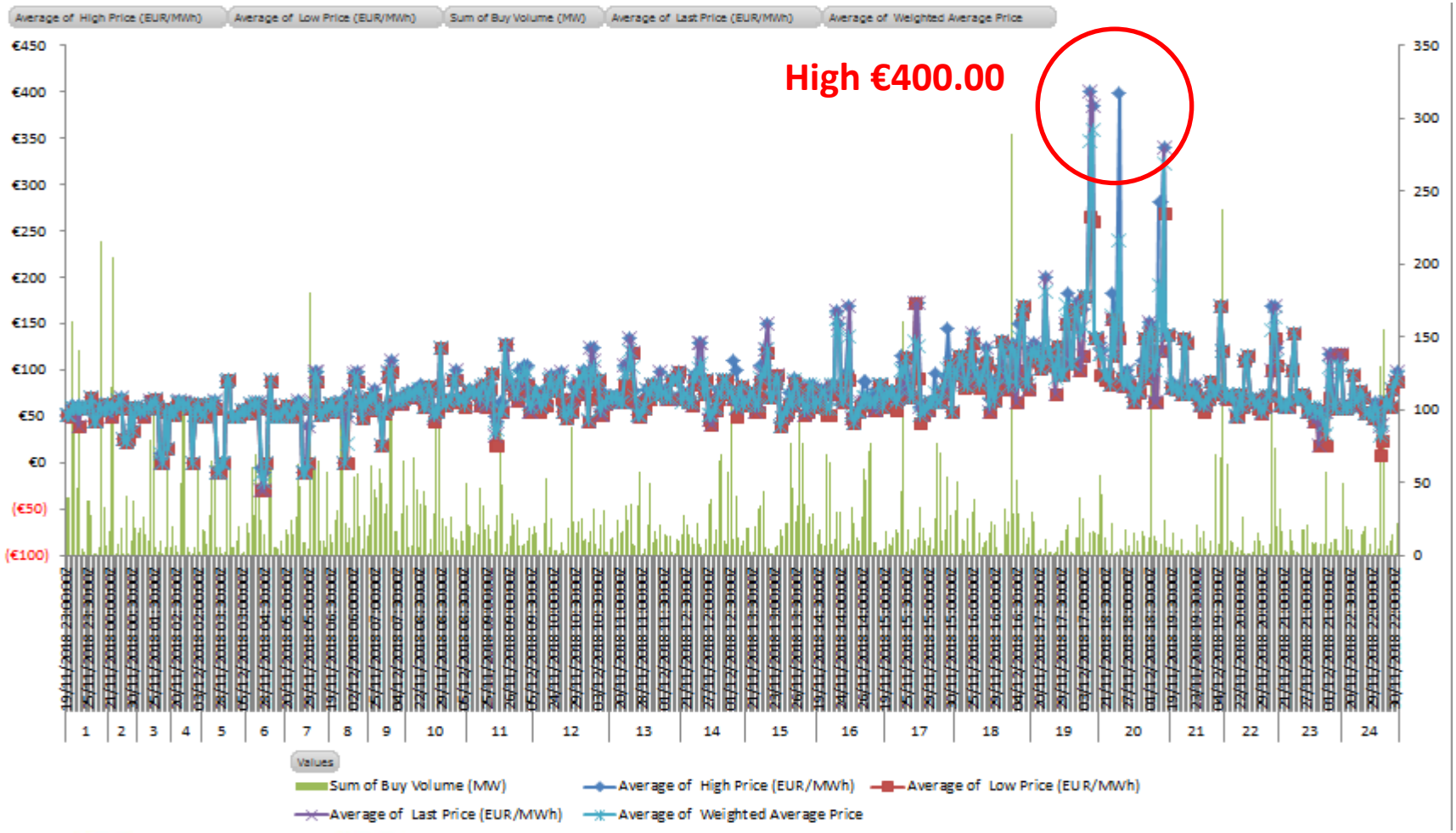
Ex-Ante Market Analysis

- Highest Ex-Ante Price since go-live?



Ex-Ante Market Analysis

- Ex-Ante Continuous 5th December



Ex-Ante Market Analysis

- In Summary

✓ Ex-Ante markets are orderly markets
✓ Processes are working
✓ Market action observed to date is normal.

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SEMO: Balancing Market

Discussion on Technical Issues 05 & 06 Dec 2018

The SEMO Balancing Market experienced technical issues on the 5th and 6th of December.

Issue Name	Internal Data Transfer Failure
Date	05 Dec 2018
Duration	00:00 – 06:00
Summary	The client certificate for the Oracle middleware (OMW) solution expired on the 5th December and was not renewed in time. The OMW is responsible for marshalling and translating data between various central systems.
Impact	• Due to this issue, some inputs to the MMS system were not received. • This impacted the real time imbalance price function output • The backup price was used between 06:30 and 09:30.
Resolution	The business process for EirGrid's internal IT team has been updated to ensure this does not occur in the future.

SEMO: Balancing Market

Discussion on Technical Issues 05 & 06 Dec 2018

The SEMO Balancing Market experienced technical issues on the 5th and 6th of December.

Issue Name	QBOA Timeout
Date	06 Dec 2018
Duration	The issue occurred throughout the morning of the 6th December
Summary	The system process calculating QBOA timed out.
Impact	• The 5-minute Imbalance Price was not formulated • The Market Backup Price was used throughout the morning
Resolution	The issue has been forwarded to and escalated with the Balancing Market software vendor

22 November 2018 - Timeline in Control Room

- Data retrieval for LTS run (~18:11.)

Generating Cost Curves

Break Point(MW) / SLOPE (€/MWh)

Generator Name	EMS Name	Resource Type	Jurisdiction	Start Date/Time	Zero Load Cost (€/HR)	Break Point 1	Slope 1	Break Point 2	Slope 2	Break Point 3
GU_500131	B32	GEN	NI	22/11/2018 21:00:00 GMT	1,678.15	0	54.36	113.00	54.37	180.00
GU_500131	B32	GEN	NI	22/11/2018 22:30:00 GMT	1,678.15	0	628.54	113.00	628.55	180.00
GU_500131	B32	GEN	NI	22/11/2018 23:00:00 GMT	1,674.62	0	59.48	113.00	628.65	180.00
GU_500131	B32	GEN	NI	23/11/2018 16:30:00 GMT	1,674.62	0	55.72	113.00	55.74	180.00
GU_500131	B32	GEN	NI	23/11/2018 21:30:00 GMT	1,674.62	0	59.48	113.00	628.65	180.00

- The price at this time is high for the 22:30 – 23:00 trading period only. Unit was must-run to stop the run de-committing the unit for this trading period and bringing it back immediately after.

- LTS schedule Published 19:33
  ONLINE_LTS_20181122193428_201811222100GMT.sav.gz

22 November 2018 - Timeline in Control Room

- Price increase submitted at 18:33 from Market Participant

Generator Offers (Complex COD)

28/11/2018 11:27:21 GMT

Name	Resource Name	Start Time	End Time	Num Inc PQ Points	Num Dec PQ Points	Currency Flag	Inc Price 1	Inc Quantity 1 (MWh)	Inc Price 2	Inc Quantity 2 (MWh)	Inc Price 3	Inc Quantity 3 (MWh)
	GU_500131	22/11/2018 23:00:00 GMT	22/11/2018 23:30:00 GMT	2	1	Pound	72.35	160.000	577.30	251.490		
	GU_500131	22/11/2018 23:00:00 GMT	22/11/2018 23:30:00 GMT	4	4	Pound	52.70	113.000	556.97	180.000	556.98	230.000
	GU_500131	22/11/2018 23:00:00 GMT	22/11/2018 23:30:00 GMT	4	4	Pound	557.21	113.000	557.22	180.000	557.23	230.000
	GU_500131	22/11/2018 23:00:00 GMT	22/11/2018 23:30:00 GMT	4	4	Pound	557.21	113.000	557.22	180.000	557.23	230.000
	GU_500131	22/11/2018 23:00:00 GMT	22/11/2018 23:30:00 GMT	4	4	Pound	557.21	113.000	557.22	180.000	557.23	230.000

28/11/2018 11:27:21 GMT

Origin Flag	Submit Time	Update Time	Update User
Standing	04/11/2018 12:00:41 GMT	04/11/2018 12:00:41 GMT	MIDB
MP Submission	22/11/2018 14:04:29 GMT	22/11/2018 14:04:29 GMT	MIDB
MP Submission	22/11/2018 18:33:48 GMT	23/11/2018 18:50:26 GMT	MIDB
MP Submission	22/11/2018 18:33:48 GMT	23/11/2018 13:04:55 GMT	MIDB
MP Submission	22/11/2018 18:33:48 GMT	22/11/2018 18:33:48 GMT	MIDB

RTPIMB BOA Output

SD2

Legend
1 - Unflagged (Green)
0 - Flagged (Red)

alance Pricing Period	Unit Name	Order Id	Effective Time	QBOA (MWh)	PBOA (€/MWh) Original	PBOA (€/MWh) Tie-Broken	Source	Rank	Flagging SO	Flagging Non-Marginal	Flagging CADL	Flagging Emergency	Flagging Imbalance Price	PMEA (€/MWh)	PRBO (€/MWh)	Tagging NIV	Tagging PAR	Tagging Imbalance Price
018 23:50:00 GMT	GU_500131	1	22/11/2018 23:50:00 GMT	9.42	767.8359	767.8359	EDL	24	1	1	1	1	1	767.84	767.84	0	0	0
018 23:50:00 GMT	GU_500823	1	22/11/2018 23:50:00 GMT	0.67	229.1788	229.1872	EDL	23	1	0	1	1	0	767.84	767.84	0	0	0
018 23:50:00 GMT	GU_500822	2	22/11/2018 23:50:00 GMT	7.08	229.1788	229.1843	EDL	22	1	0	1	1	0	767.84	767.84	0	0	0
018 23:50:00 GMT	GU_500822	1	22/11/2018 23:50:00 GMT	0.67	229.1788	229.1843	EDL	21	1	0	1	1	0	767.84	767.84	0	0	0
018 23:50:00 GMT	GU_500823	2	22/11/2018 23:50:00 GMT	7.08	229.1788	229.1834	EDL	20	1	0	1	1	0	767.84	767.84	0	0	0
018 23:50:00 GMT	GU_400360	1	22/11/2018 23:50:00 GMT	0.42	165.0000	165.0000	EDL	19	0	1	1	1	0	767.84	767.84	0	0	0
018 23:50:00 GMT	GU_500040	1	22/11/2018 23:50:00 GMT	4.17	121.5663	121.5663	EDL	18	0	0	1	1	0	767.84	767.84	0	0	0

- Sets Imbalance (Price from Market Participant driven by Gas Transportation Charge)
- The next Published LTS schedule was 00:35
  ONLINE_LTS_20181123003632_201811230100GMT.sav.gz

22 November 2018 - Timeline in Control Room

- Control Room focus for price submission at 18:11
  - Physically the plant cannot shut down and resync irrespective of technical data in the system (discussions with station confirmed)
  - Hence made must run (system security considerations)

- Overnights have also seen a change in Thurlough Hill PNs:
  - Not enough pumping PNs to match generation across following day.
  - Require a certain dam level to be maintained for black start in Ireland
  - Focus on what scheduler will do and if we need to step in and operate outside of economic merit order. Pumping programme a key focus after IDA1
  - Priority dispatch considerations for TSO

- We also observe a lot of market activity in prices in evenings (after IDA1) going into the next day as positions become firm.

22 November 2018 - Timeline in Control Room

- Delays from Control Rooms in running the 22:00 schedule did not pick up the 18:33 price submission in a timely manner
  - Price from Market Participant driven by Gas Transportation Charge
  - Analysis indicates we could have had a feasible secure schedule to avoid running this unit **on this occasion** if we had initiated another LTS schedule run between the 18:00 and 22:00.
  - We have changed our internal processes to pick up change quicker
- This pricing effect is included in our Dispatch Balancing Costs (DBC) budget (€7.0m)
  - Hence there is a **reasonable probability that these events may occur again**
  - There may not be a feasible schedule to avoid paying these prices (hence in our DBC budget) which may be reflected in the imbalance price (depends on tagging)
- Root cause is Gas Transportation Effect in N. Ireland causing this pricing behaviour which will drive increased changes in LTS schedules and potentially high imbalance prices.

5th December- Timeline in Control Room

- Data feed failure after midnight Control Rooms become aware and log call to start a response from IS providers

- Operating the System
  - Control Rooms go to “fall back systems”
  - Latest LTS is saved to spreadsheet every time we do a schedule
  - This allows control rooms to operate economically for a period of time

- This event had minimal impact on operating the system.

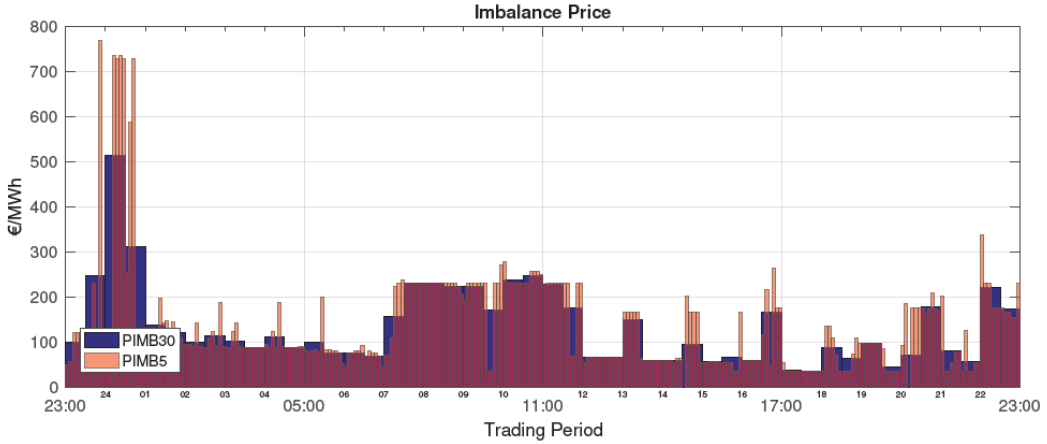
X-mas holiday period

- Market Participants to reflect on resources across this period
  - Maintaining correct data to control rooms
  - Participating in the various markets

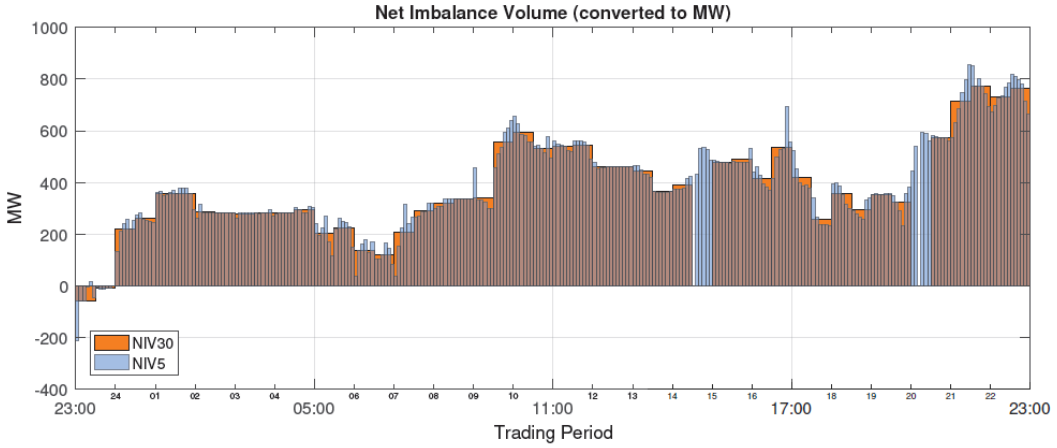
- Control Rooms are resourced to normal requirement
  - No reduction in resources
  - Demand forecasts can be a challenge

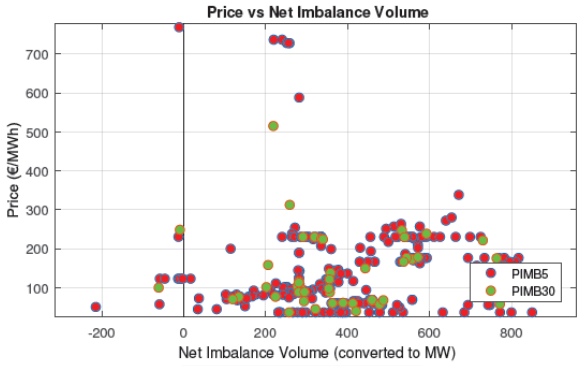
Balancing Market – Imbalance Pricing

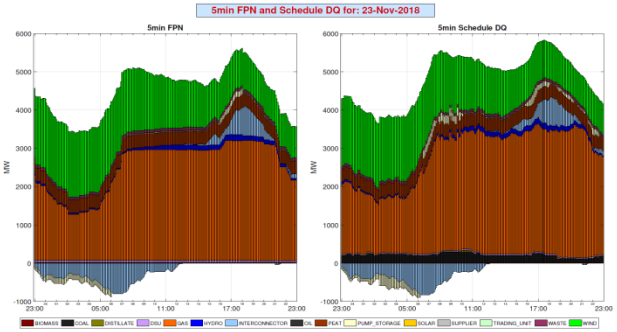
Imbalance Price Summary for: 23-Nov-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	35.00	35.00	-17.79	-4.99
Mean:	137.19	134.27	31.93	31.50
Max:	767.84	514.01	71.44	64.38
StDev:	116.16	89.81	15.28	15.16

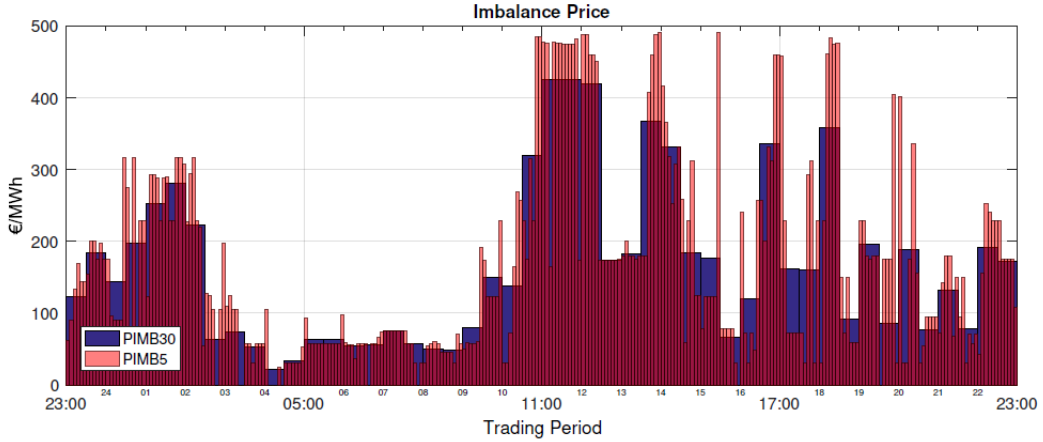




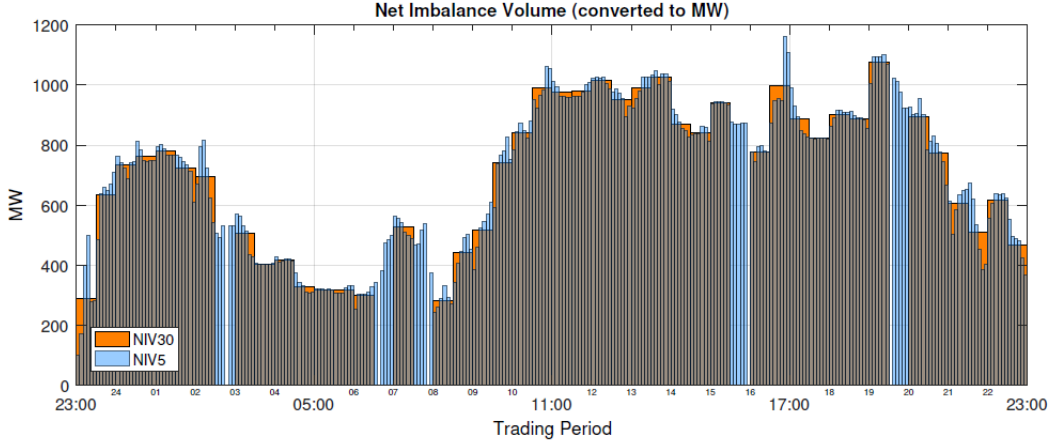


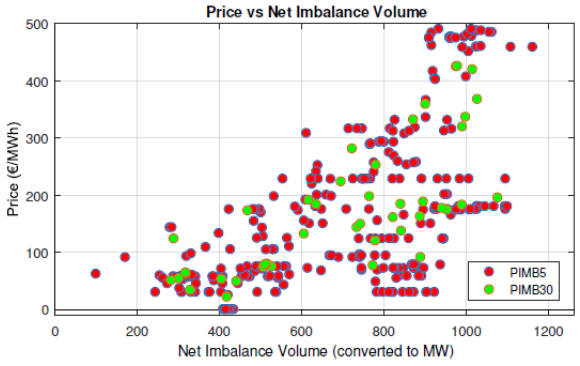
Balancing Market – Imbalance Pricing

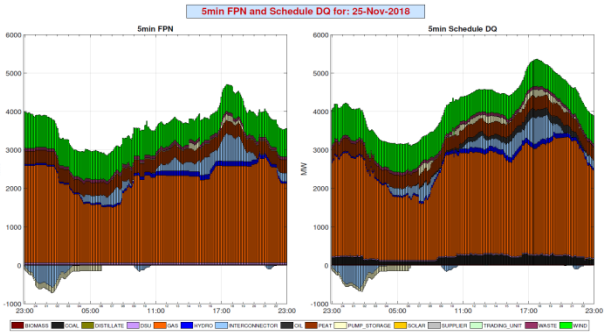
Imbalance Price Summary for: 25-Nov-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	0.00	21.63	8.30	23.54
Mean:	169.56	164.71	58.49	58.88
Max:	490.08	425.35	96.80	89.72
StDev:	135.09	112.88	20.50	20.39

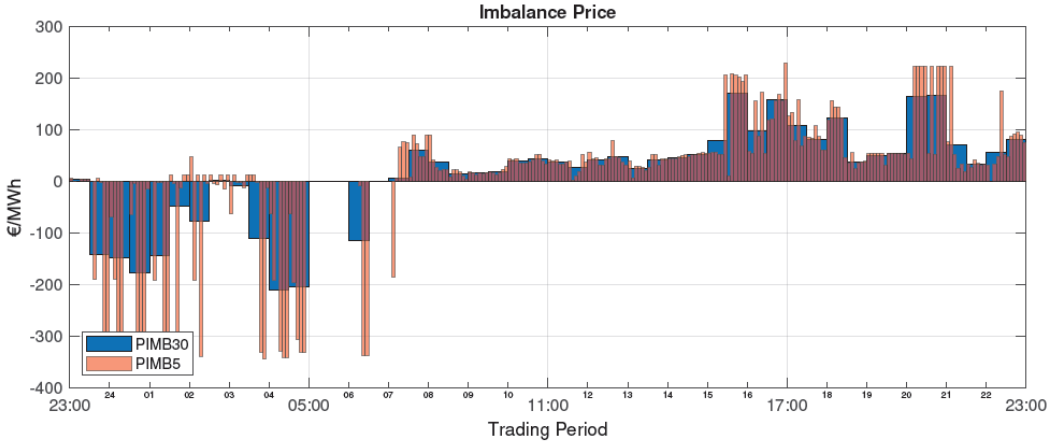




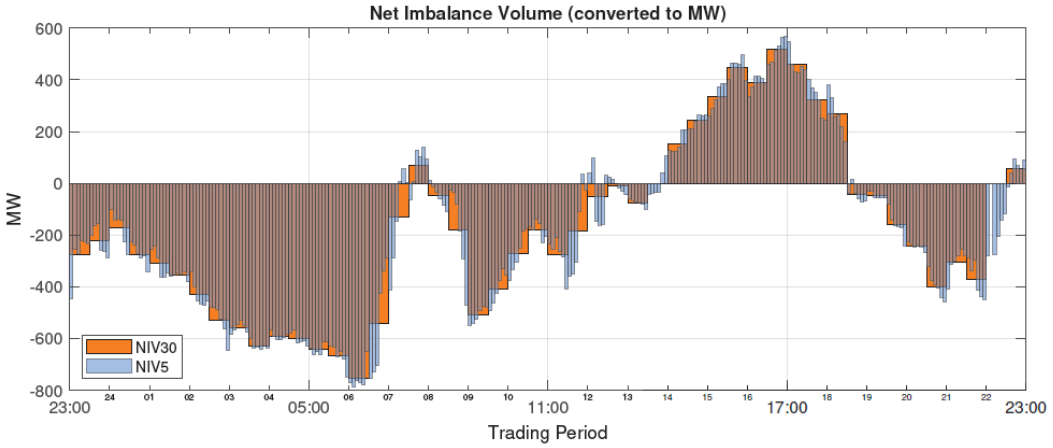


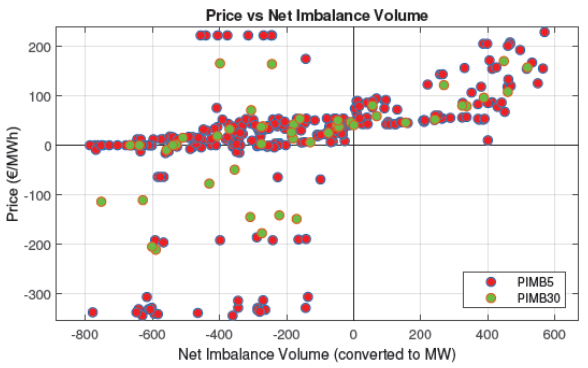
Balancing Market – Imbalance Pricing

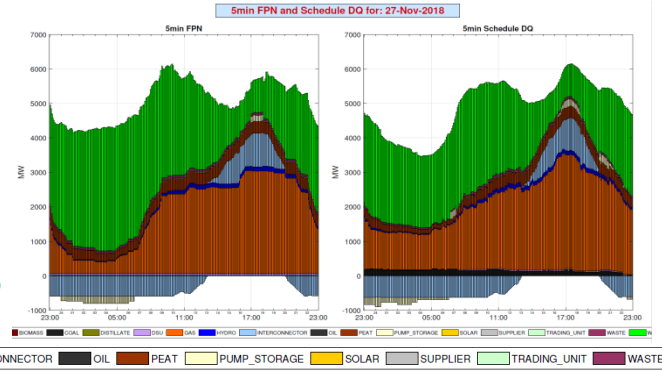
Imbalance Price Summary for: 27-Nov-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-345.07	-211.59	-65.54	-62.71
Mean:	14.20	14.16	-14.53	-14.49
Max:	229.14	170.51	47.41	43.15
StDev:	118.06	93.18	27.61	27.51

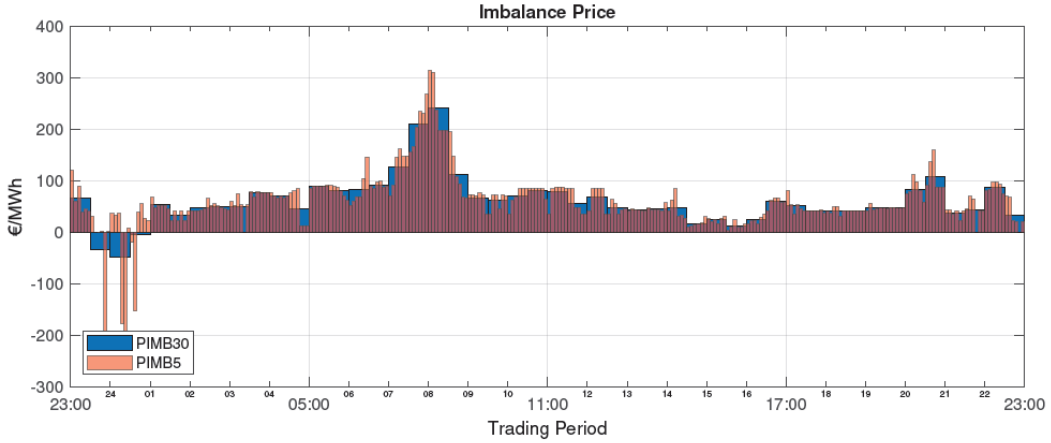




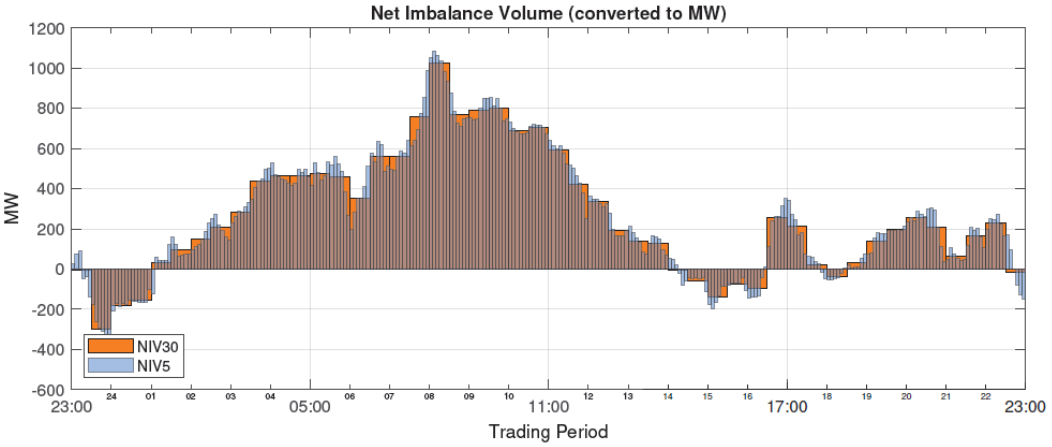


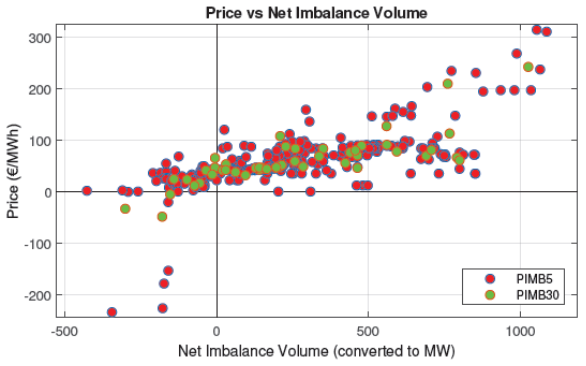
Balancing Market – Imbalance Pricing

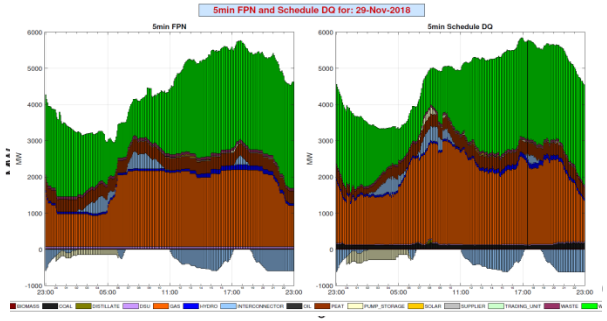
Imbalance Price Summary for: 29-Nov-2018

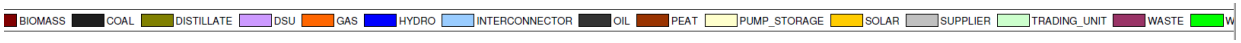


	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-233.83	-48.58	-35.65	-25.13
Mean:	60.15	60.15	21.87	21.87
Max:	313.87	241.80	90.55	85.50
StDev:	55.87	47.74	25.67	25.45



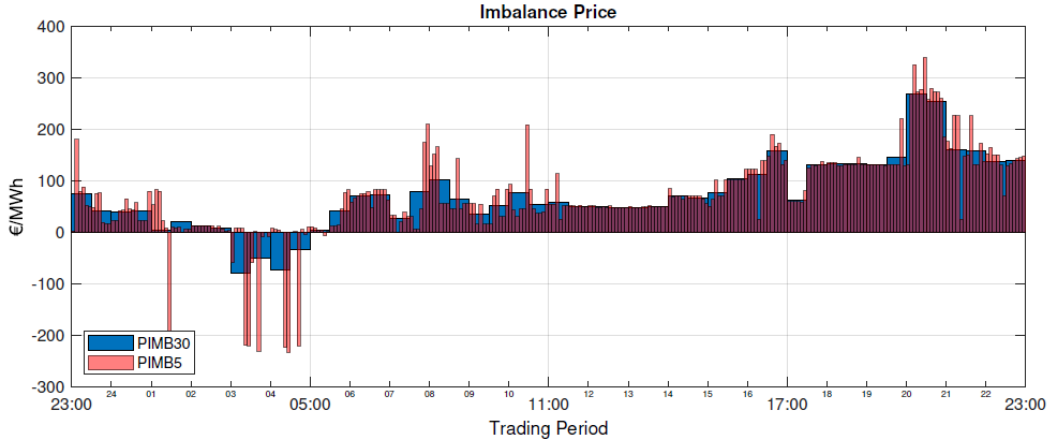




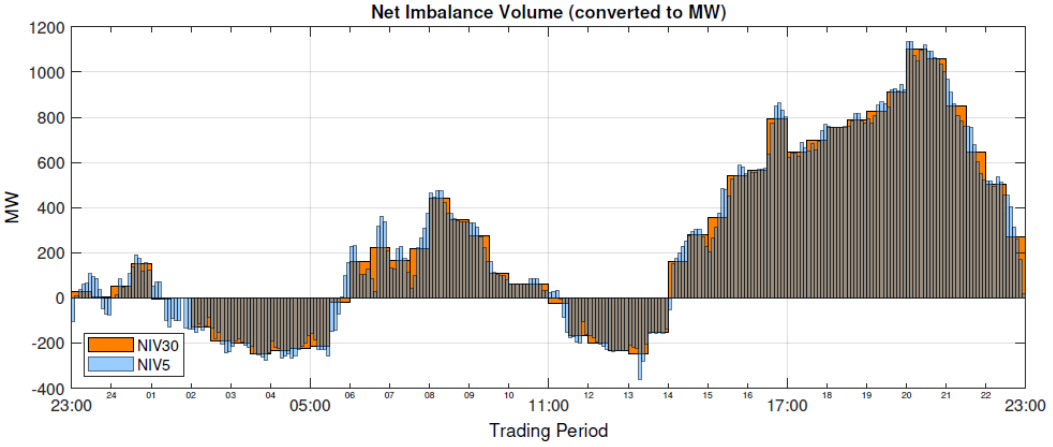


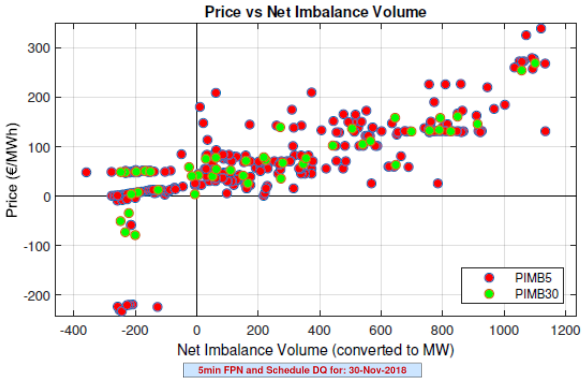
Balancing Market – Imbalance Pricing

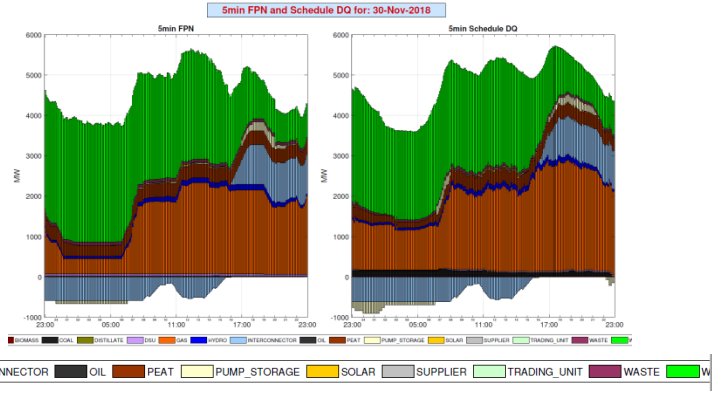
Imbalance Price Summary for: 30-Nov-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-233.88	-79.59	-29.98	-20.71
Mean:	70.98	71.02	19.99	20.51
Max:	338.67	268.53	94.52	91.75
StDev:	81.21	69.66	32.83	32.81



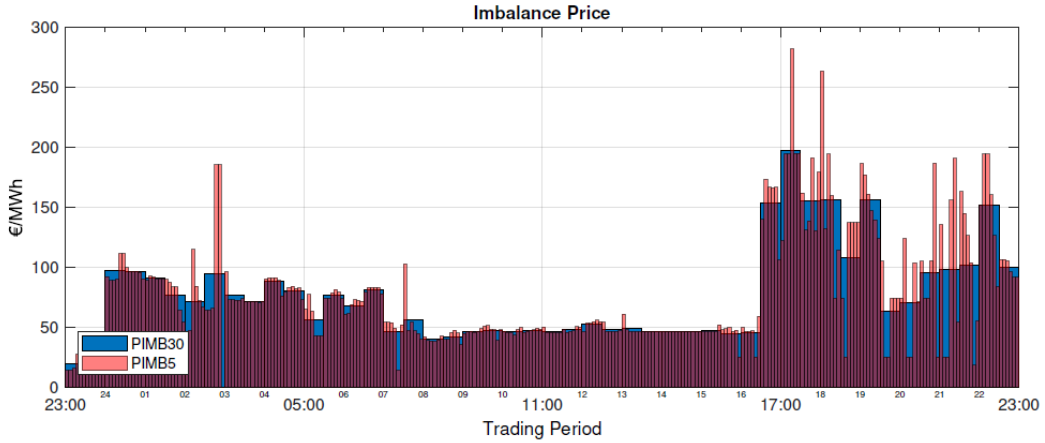




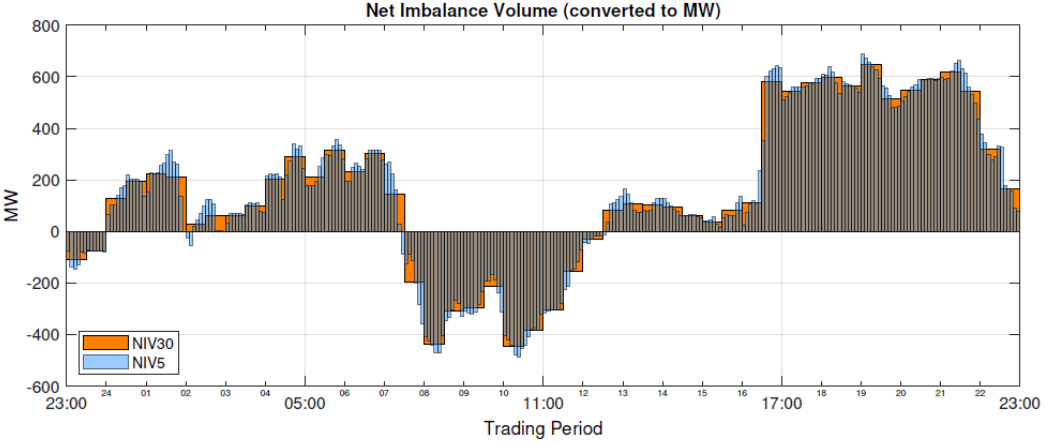
EIRGRID semo Single Electricity Market Operator SONI

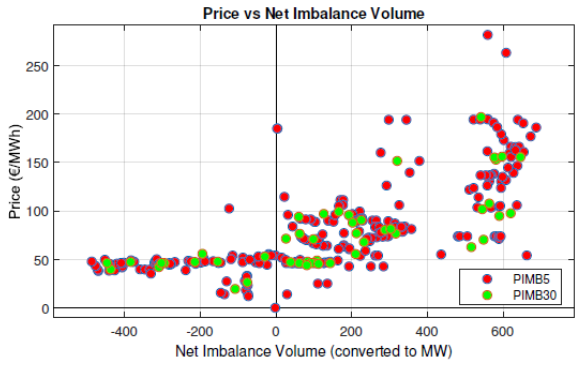
Balancing Market – Imbalance Pricing

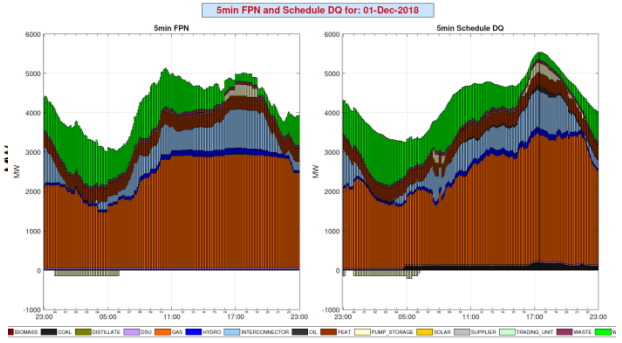
Imbalance Price Summary for: 01-Dec-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	0.00	19.50	-40.55	-37.18
Mean:	76.23	76.23	12.58	12.58
Max:	281.62	196.85	57.30	53.82
StDev:	46.12	39.30	25.27	25.18

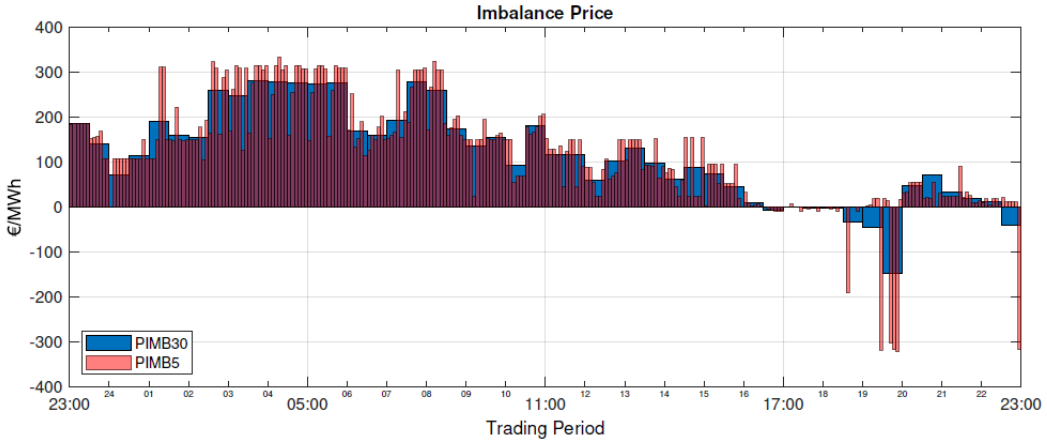




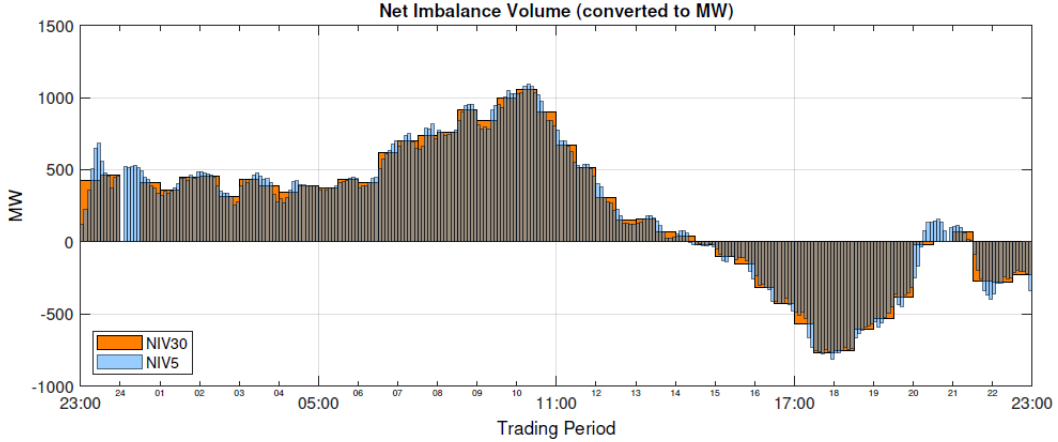


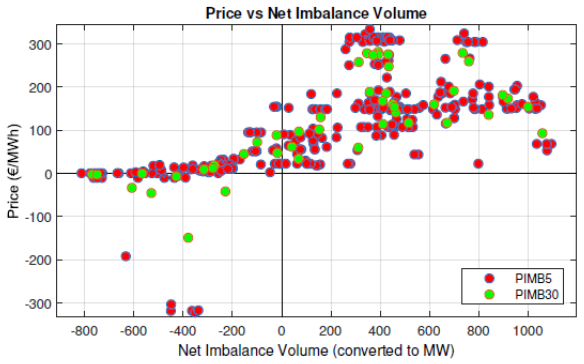
Balancing Market – Imbalance Pricing

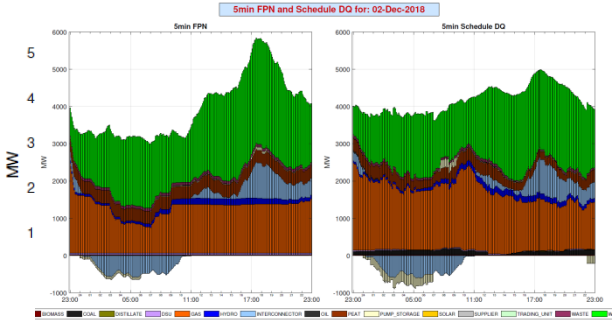
Imbalance Price Summary for: 02-Dec-2018

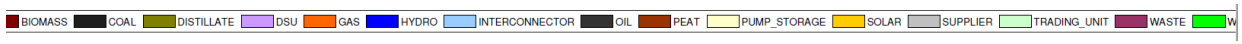


	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-322.77	-149.48	-67.73	-64.09
Mean:	114.41	114.24	17.99	17.67
Max:	333.62	280.98	91.28	88.22
StDev:	116.42	104.25	39.41	40.01



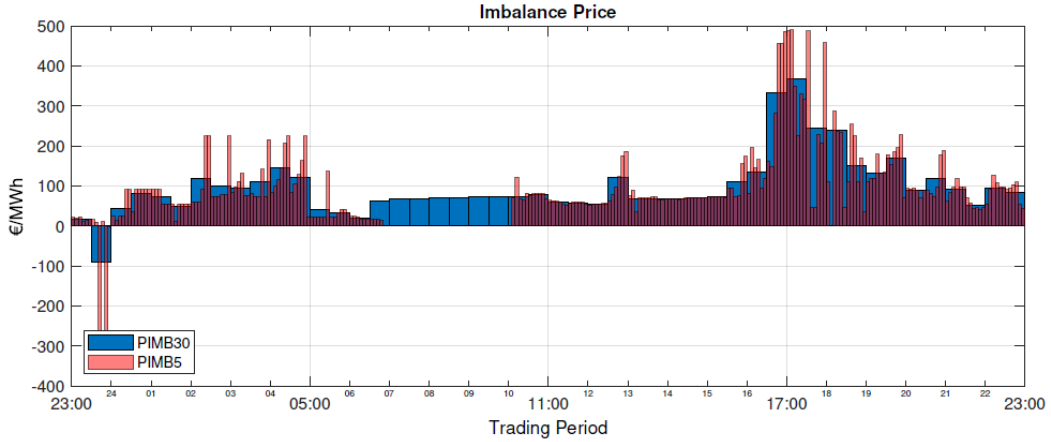




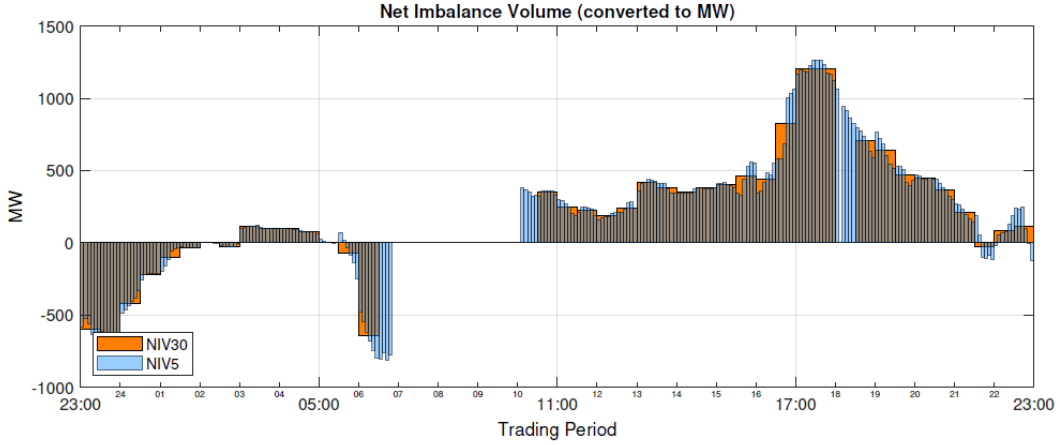


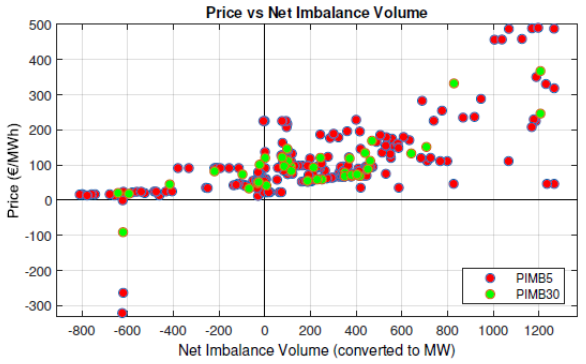
Balancing Market – Imbalance Pricing

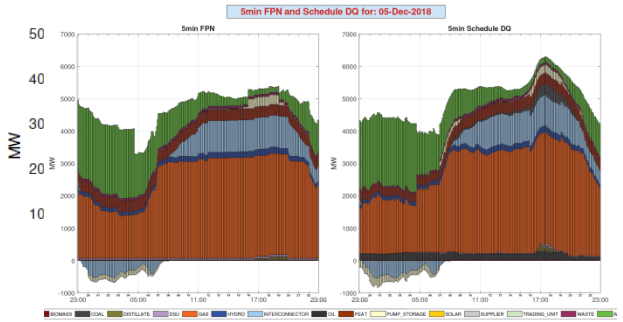
Imbalance Price Summary for: 05-Dec-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-321.63	-91.53	-67.53	-53.56
Mean:	98.77	96.93	17.26	17.14
Max:	490.07	366.88	105.50	100.48
StDev:	95.69	74.91	35.95	34.17

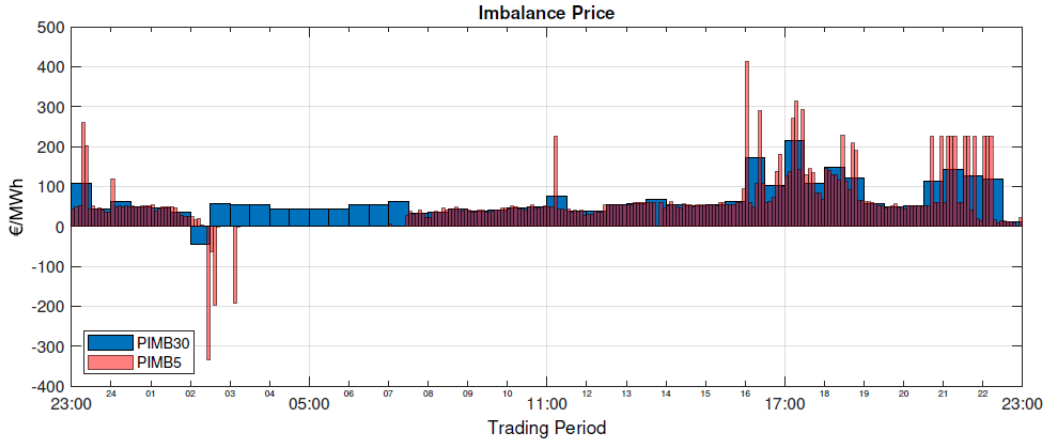




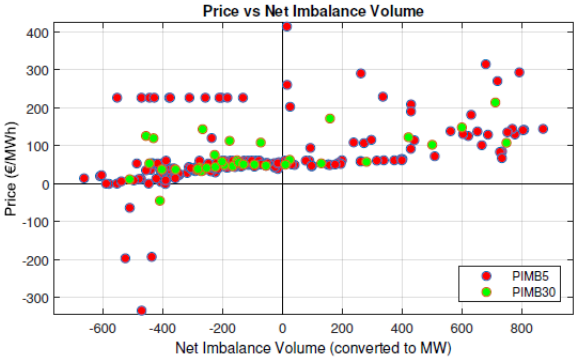


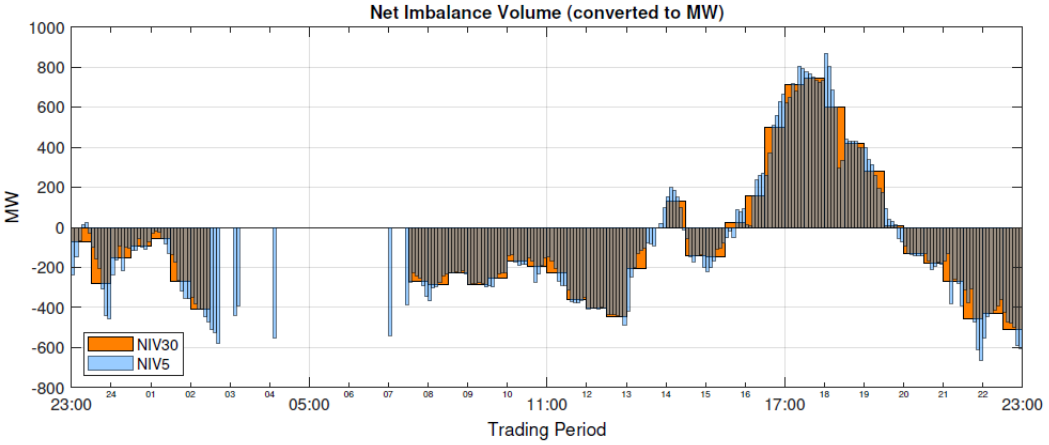
Balancing Market – Imbalance Pricing

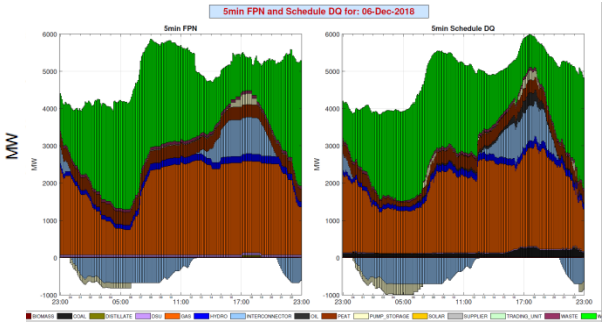
Imbalance Price Summary for: 06-Dec-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-334.68	-44.97	-55.32	-42.64
Mean:	66.10	66.63	-8.57	-7.54
Max:	414.07	213.85	72.50	62.28
StDev:	74.01	43.66	27.60	27.23





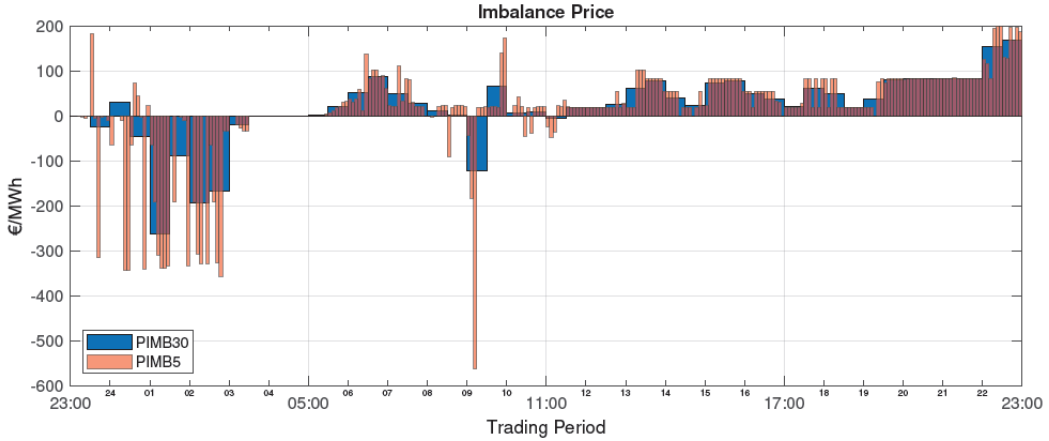


BIOMASS COAL DISTILLATE DSU GAS HYDRO INTERCONNECTOR OIL PEAT PUMP_STORAGE SOLAR SUPPLIER TRADING_UNIT WASTE

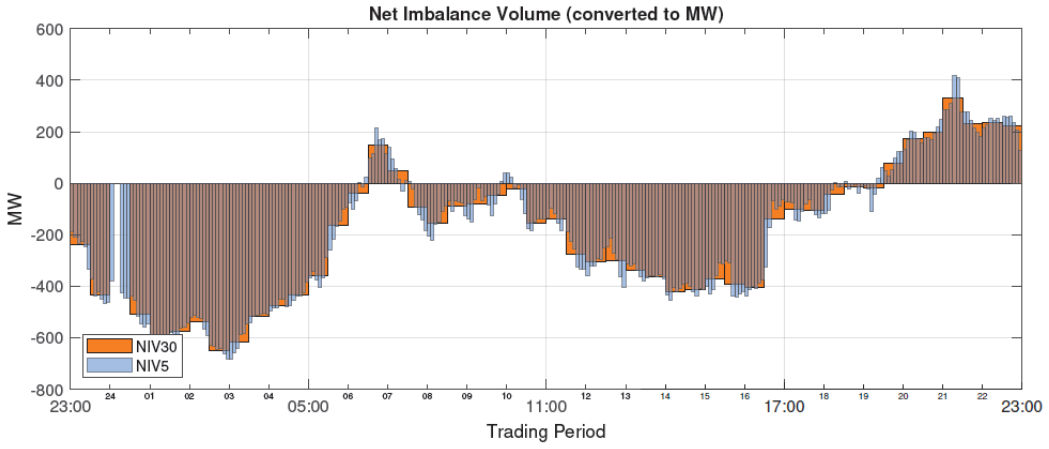
EIRGRID semo SONI Single Electricity Market Operator

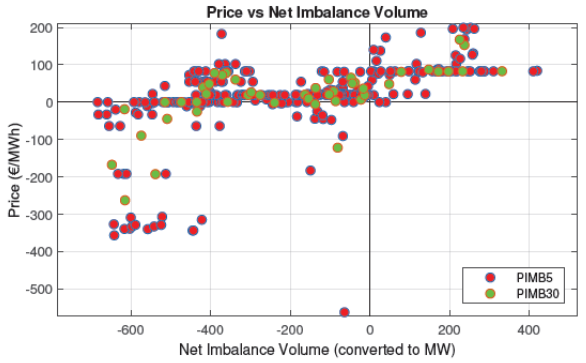
Balancing Market – Imbalance Pricing

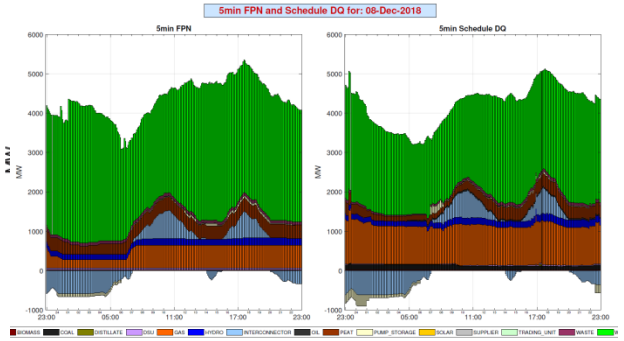
Imbalance Price Summary for: 08-Dec-2018



	PIMB5 (€/MWh)	PIMB30 (€/MWh)	NIV5 (MWh)	NIV30 (MWh)
Min:	-563.33	-263.17	-56.99	-54.01
Mean:	14.49	17.69	-16.70	-16.43
Max:	199.51	167.67	34.94	27.59
StDev:	103.05	78.15	21.74	21.69





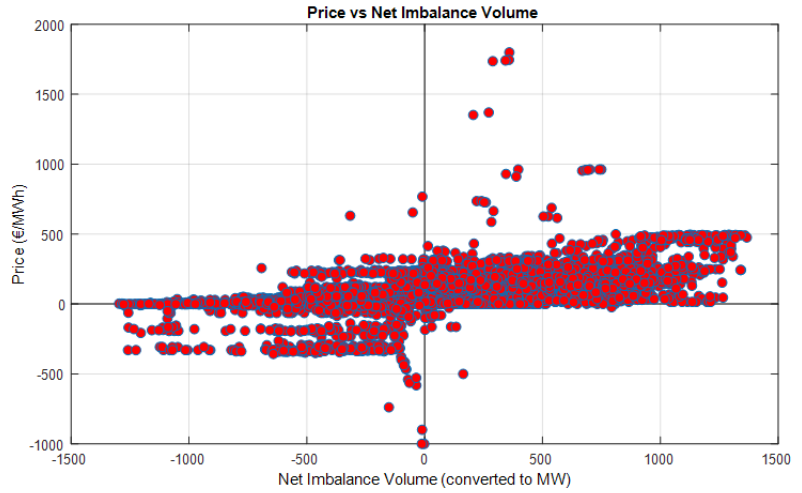


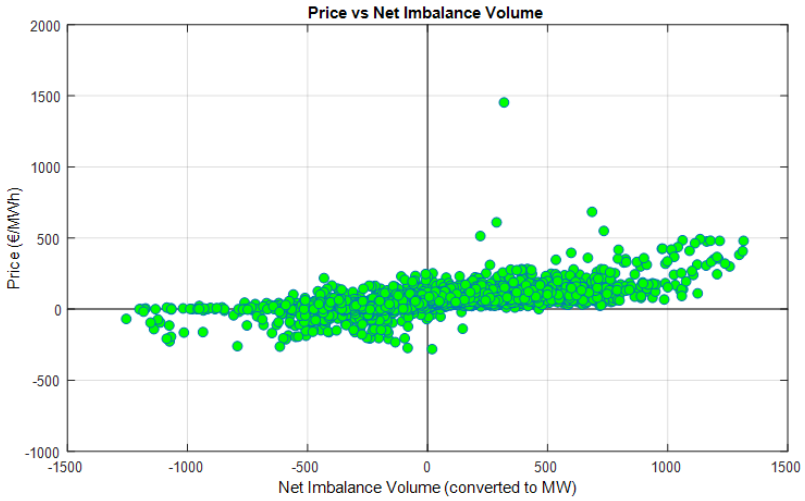
Balancing Market – first 20,000 Imbalance Prices

Imbalance Prices continue to be driven by:

1. Offers
2. NIV
3. Wind
4. Demand
5. Margin

Volatility remains high due to offers, wind and margin. Lower for 30 min prices.





Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Ex-Ante Market	Liam McAllister
Balancing Market	Aodhagan Downey, Sam Matthews
Disputes & Repricing Update	**Dermot Campfield, Brendan O'Sullivan**
Settlements & Cashflow Analysis	Sean O'Rourke, John O'Dea
High Level Market Overview	Brendan O'Sullivan
Known Issues Report Update	Severin Garanzuay
Query Management	Claire Breslin
Q&A	

Disputes & Repricing Update

- 7 errors previously identified:
  - Negative Reserve
  - Exchange Rate
  - Non controllable wind QBOAs
  - Incorrect QBOA for a decommissioned unit
  - Incorrect QBOA for a unit
  - Complex COD being used instead of Simple COD
  - QBOAs dropping

All fixed in systems

Awaiting fix from ABB

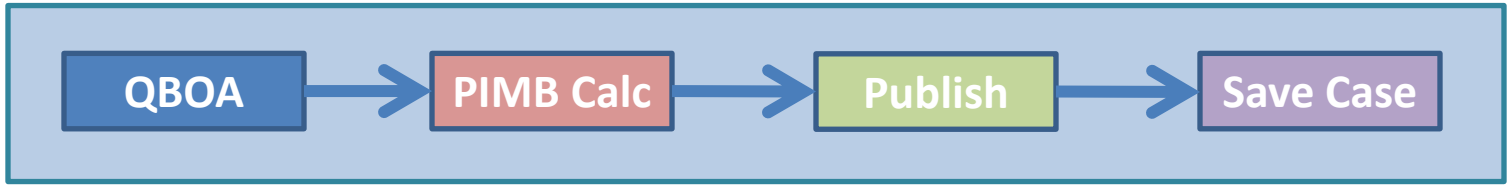
- 2 new recently identified errors have been identified:
  - Incorrect Dispatch Instruction for a unit feeding into pricing
  - Initial conditions being incorrectly applied

Impacted Dates

Dates which are currently disputed/manifest errors identified:

- 01/10 – 24/10
- 27/10 – 29/10
- 01/11 – 05/12

Re-Pricing Option A



- Solution delivered by ABB = Friday 7th Dec (one week late)
- Testing has commenced

- Testing to be completed ~ mid Jan
- Re calculated impacted Imbalance Price Periods ~ end Jan
- Materiality checking ~ end Jan
- Objective is to feed into M+4 Resettlement ~ Feb

Timings are indicative based on current estimates

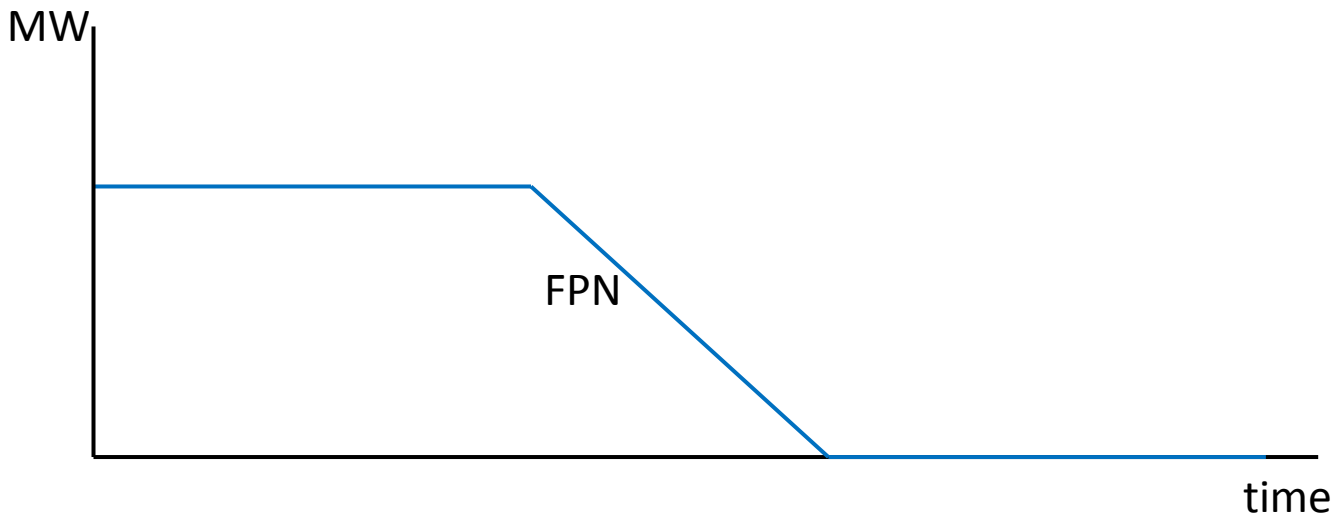
New issues in pricing

- 1. Pumped Storage unit instructions not being consistently processed:
  - Unlike other units which receive one or two DIs at the same time, they can receive between one and six DIs;
  - The order in which the up to six DIs are processed is very important as it determines which is used to profile the unit;
  - This has led to instances such as DESY being ignored as a different DI is used in profiling, meaning the profile stays at a non-zero level and QBOAs when none were intended.
- 2. Profiling initial conditions set to an incorrect level after unit comes back from being dropped due to other defect:
  - This occurred after the known defect where a unit's QBOAs periodically drop out, initial conditions were set incorrectly when the unit came back in and followed load/ramp rates to eventually match the correct level;
  - If no new DI during that time then QBOAs are fine, but if new DI processed while initial conditions were recovering then QBOAs were profiled based on incorrect initial conditions until conditions recovered.

New issues in pricing

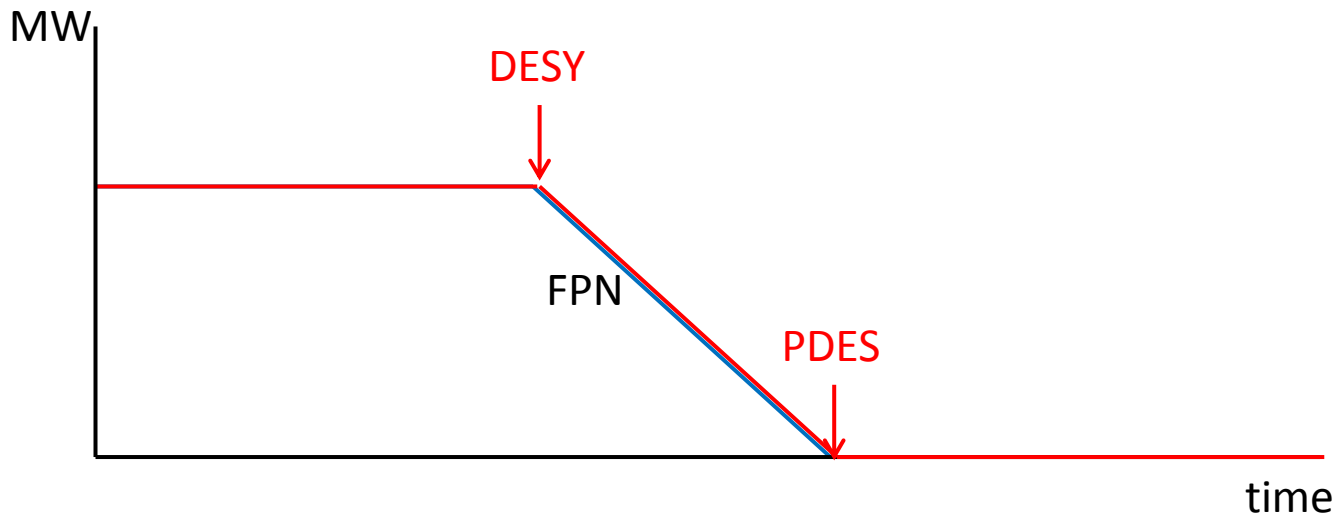
- All new issues still being assessed and have been recently raised with the vendor;
- Primary issue with Pumped Storage DIs is DESY instructions not being profiled:
  - Does not happen on every occasion, depends on the order the instructions appear in the table processing them which appears to be different on different occasions;
  - Developed workaround of issuing additional MWOF 0MW instructions alongside DESY with later issue time and same effective time to try and guarantee it is the last one on the table and therefore the one processed in pricing, profiling to zero;
  - Other potential instances for other instruction combinations still being assessed.
- Only one instance of the incorrect profiling initial conditions affecting pricing has been identified so far:
  - Occurred while unit was on soak time of loading profile;
  - Even if error occurs, only seems to affect pricing when a physical DI is processed while the error is active.

Pumped Storage Profiling Issue



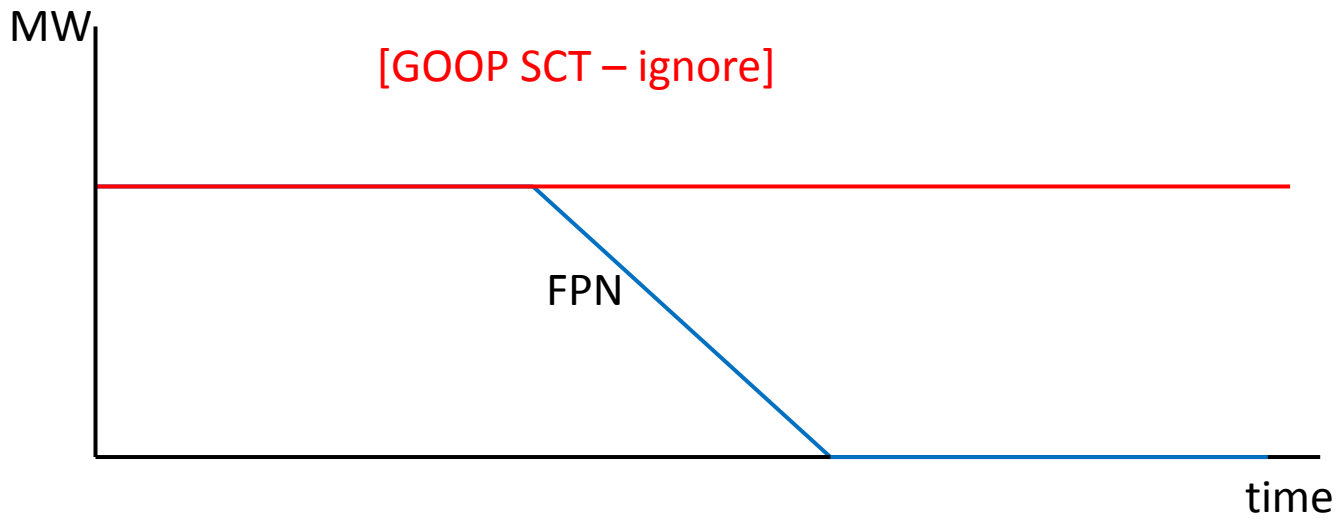
Pumped Storage Profiling Issue

EDIL Unit Name	Resource Name	Instruction Code	Instruction Combination Code	Issue Time	Effective Time	Value	Status
TH*	GU_40036*	GOOP	SCT	01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT		Accepted
TH*	GU_40036*	DESY		01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT		Accepted
TH*	GU_40036*	MWOF		01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT	0	Accepted



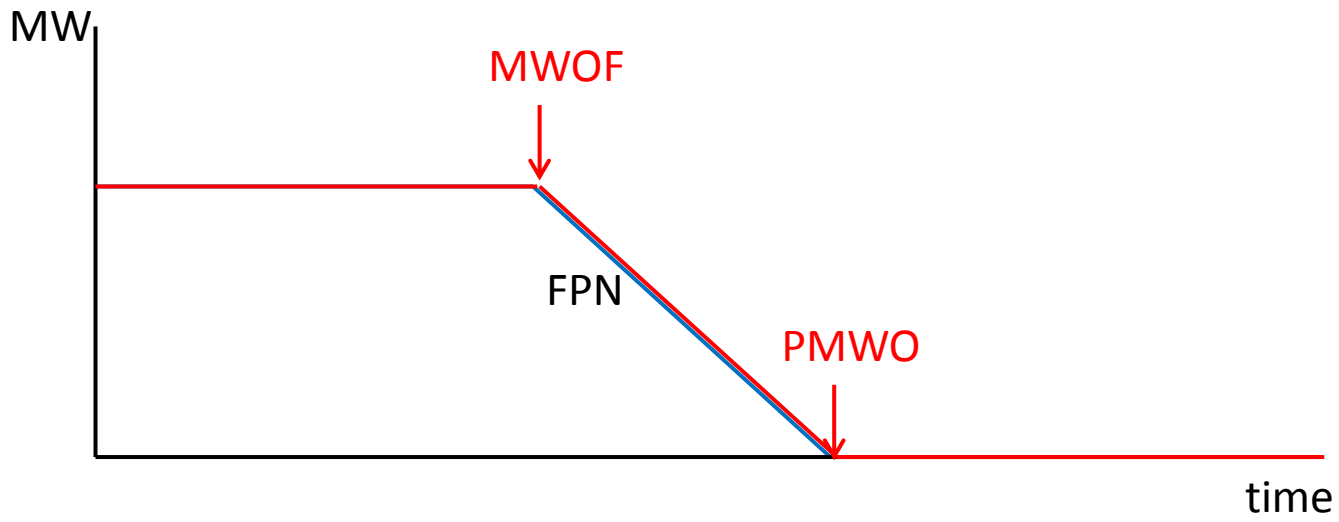
Pumped Storage Profiling Issue

EDIL Unit Name	Resource Name	Instruction Code	Instruction Combination Code	Issue Time	Effective Time	Value	Status
TH*	GU_40036*	MWOF		01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT	0	Accepted
TH*	GU_40036*	DESY		01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT		Accepted
TH*	GU_40036*	GOOP	SCT	01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT		Accepted



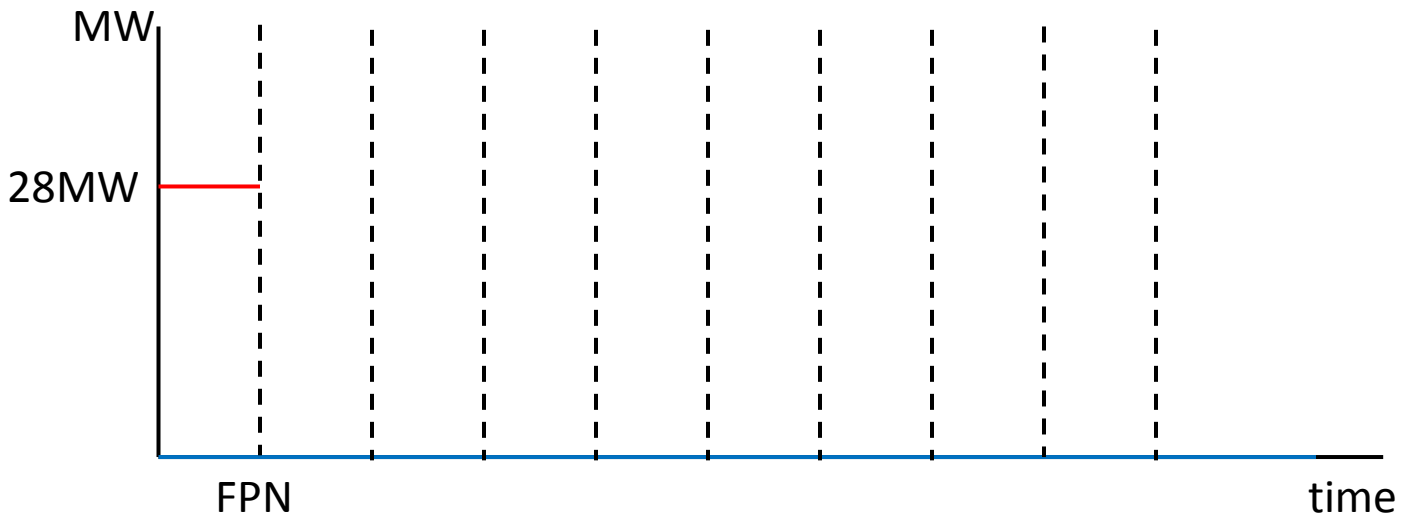
Pumped Storage Profiling Issue Workaround

EDIL Unit Name	Resource Name	Instruction Code	Instruction Combination Code	Issue Time	Effective Time	Value	Status
TH*	GU_40036*	MWOF		01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT	0	Accepted
TH*	GU_40036*	DESY		01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT		Accepted
TH*	GU_40036*	GOOP	SCT	01/07/2018 23:02:00 GMT	01/07/2018 23:04:00 GMT		Accepted
TH*	GU_40036*	MWOF		01/07/2018 23:03:00 GMT	01/07/2018 23:04:00 GMT	0	Accepted



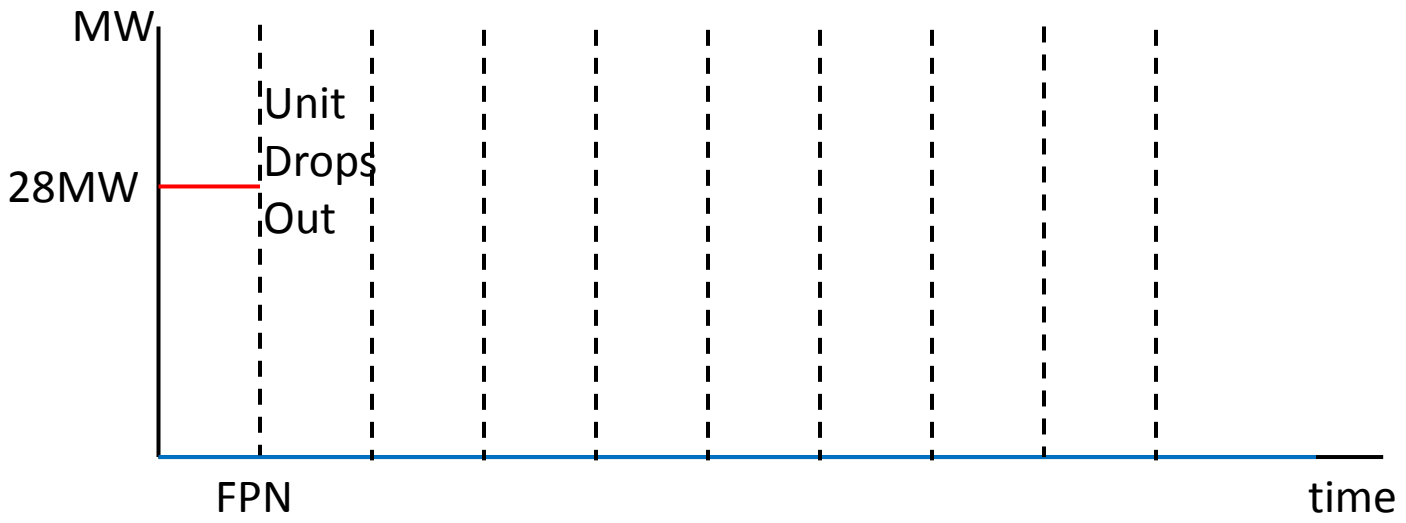
Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:01:00 GMT	28	10/07/2018 12:30:00 GMT	30
GU_******	10/07/2018 12:01:00 GMT	28	10/07/2018 12:35:00 GMT	30



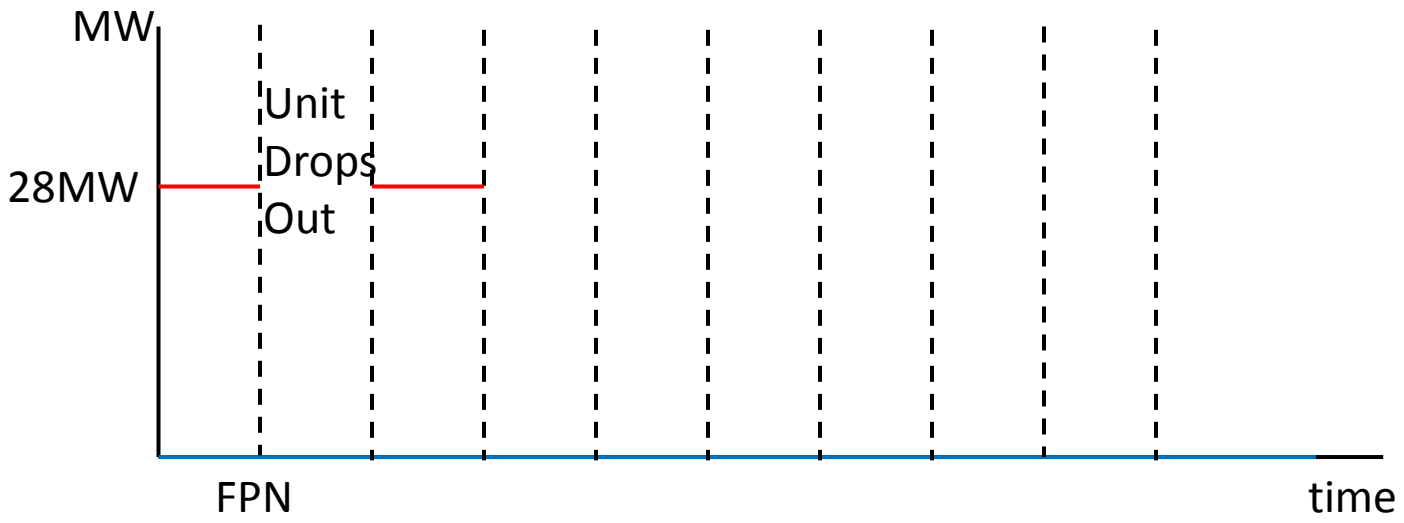
Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:01:00 GMT	28	10/07/2018 12:35:00 GMT	30
GU_******	10/07/2018 12:01:00 GMT	28	10/07/2018 12:40:00 GMT	30



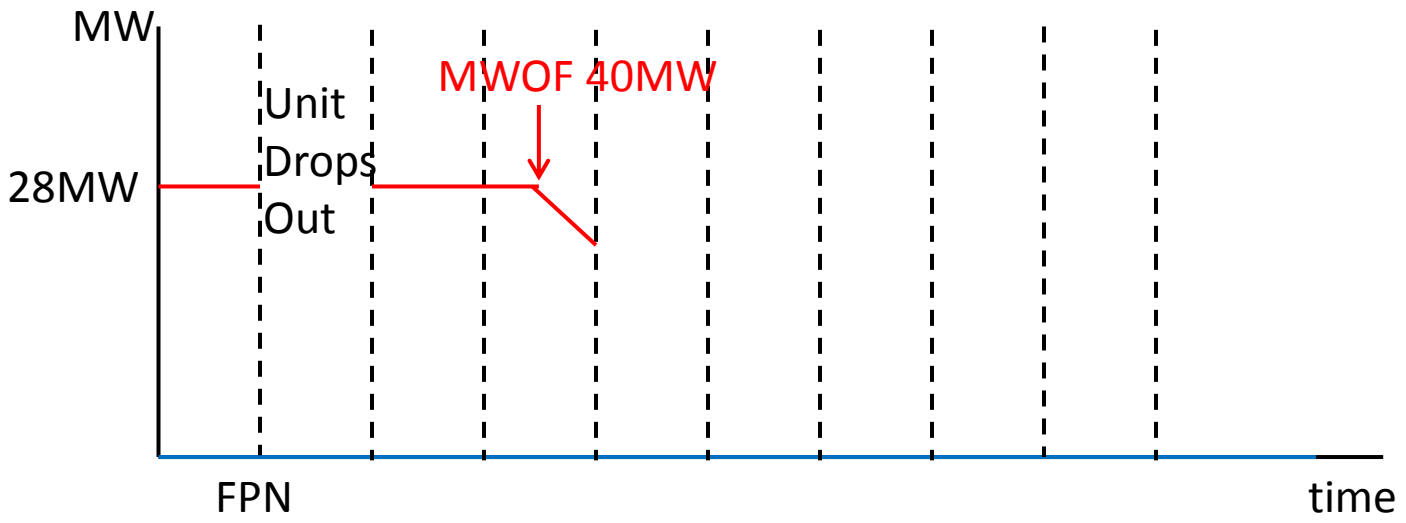
Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:01:00 GMT	28	10/07/2018 12:40:00 GMT	30
GU_******	10/07/2018 12:40:00 GMT	-5	10/07/2018 12:45:00 GMT	30



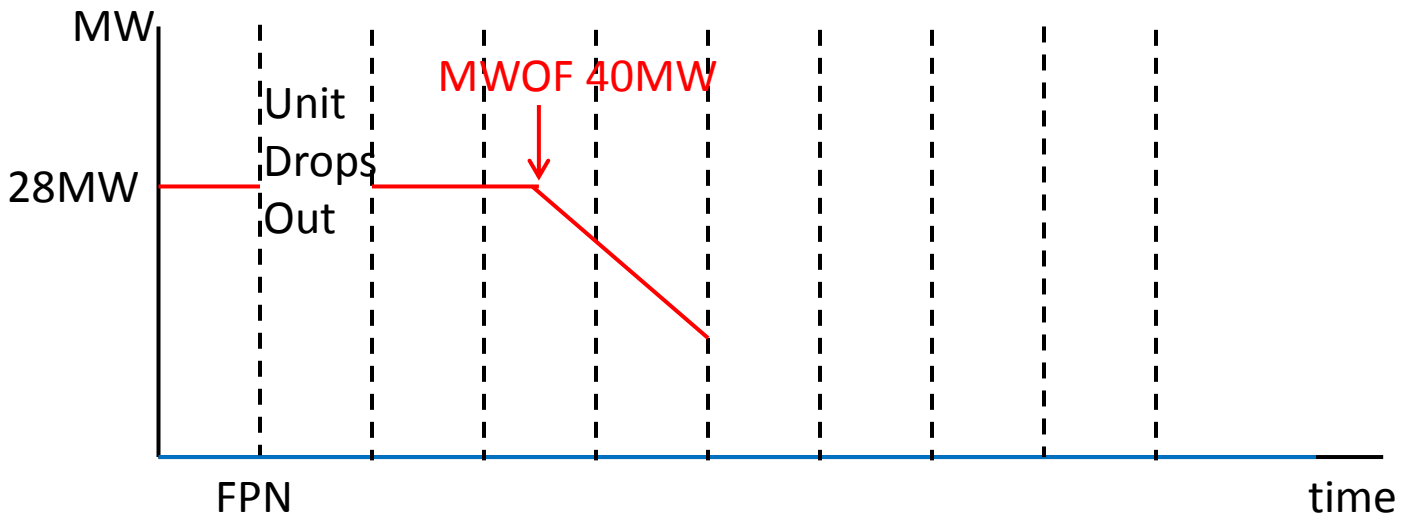
Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:40:00 GMT	-5	10/07/2018 12:45:00 GMT	40
GU_******	10/07/2018 12:45:00 GMT	10	10/07/2018 12:50:00 GMT	40



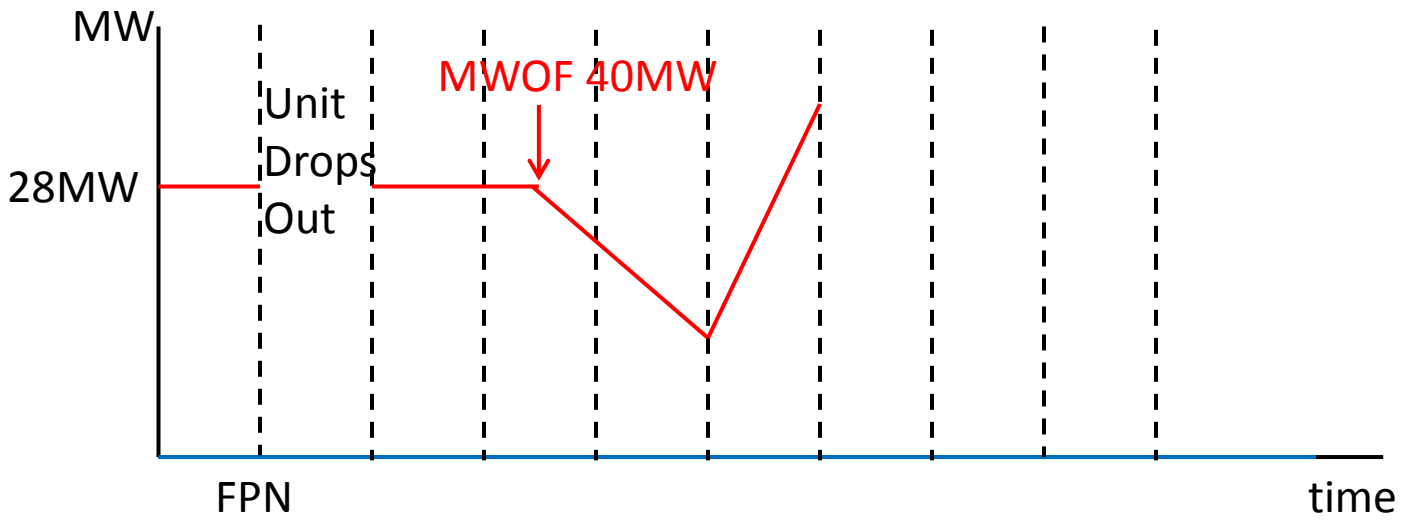
Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:45:00 GMT	10	10/07/2018 12:50:00 GMT	40
GU_******	10/07/2018 12:50:00 GMT	25	10/07/2018 12:55:00 GMT	40



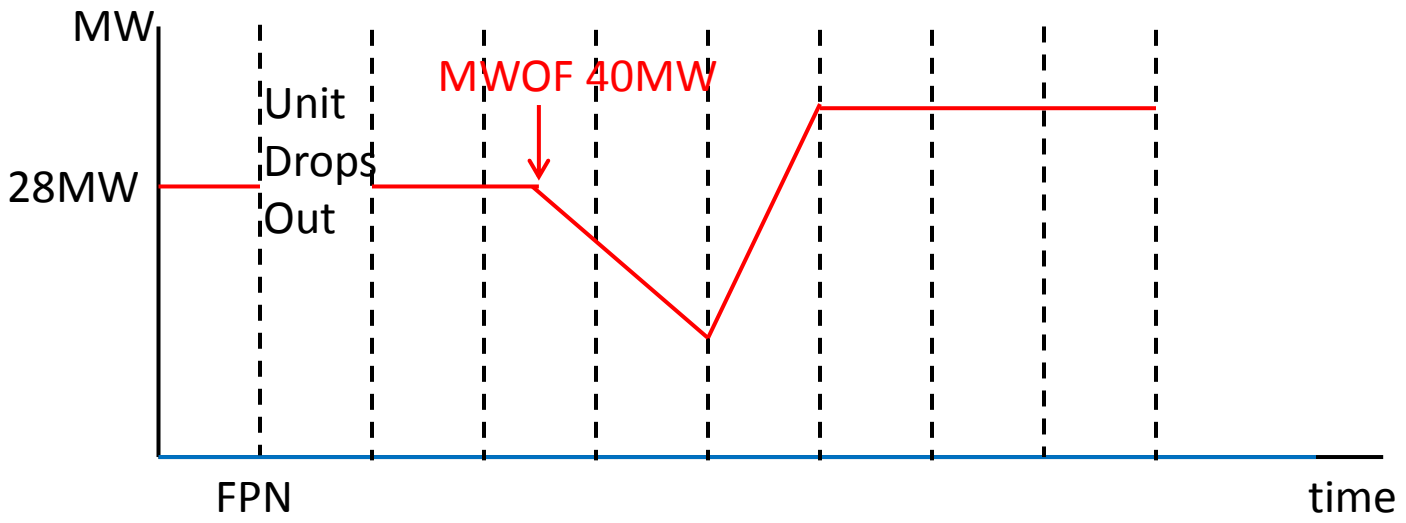
Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:50:00 GMT	25	10/07/2018 12:55:00 GMT	40
GU_******	10/07/2018 12:55:00 GMT	40	10/07/2018 13:00:00 GMT	40



Initial Condition Issue

Resource Name	Last Change Time	Last IP MW	Update Trade Date	Last DI MW
GU_******	10/07/2018 12:55:00 GMT	40	10/07/2018 13:00:00 GMT	40
GU_******	10/07/2018 12:55:00 GMT	40	10/07/2018 13:05:00 GMT	40



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Settlements & Cashflow Analysis	**Sean O'Rourke, John O'Dea**
High Level Market Overview	Brendan O'Sullivan
Known Issues Report Update	Severin Garanzuay
Query Management	Claire Breslin
Q&A	

Settlements : November data key process updates

Settlement Dates	Run Category	Run Type	Runs completed	On Time	Delayed – Same Day publication	Delayed - > 1 Day
1st – 30th	Settlements	Indicative	30	14	8	8
1st – 30th	Settlements	Initial	30	23	6	1
1st – 30th	Settlement Documents	Weekly	5	4	1	0
1st – 30th	Credit Reports	Daily	63	63	0	0
1st – 30th	Payments In	Weekly	4	4	0	0
1st – 30th	Payments Out	Weekly	4	4	0	0

15 mins delayed

Settlements : December data key processing updates

Settlement Dates	Run Category	Run Type	Runs completed	On Time	Delayed – Same Day publication	Delayed - > 1 Day
1st – 10th	Settlements	Indicative	10	5	4	1
1st – 3rd	Settlements	Initial	3	3	0	0
1st – 16th	Settlement Documents	Weekly	1	1	0	0
1st – 10th	Credit Reports	Daily	18	18	0	0
1st Dec	Payments In	Weekly	0	0	0	0
1st Dec	Payments Out	Weekly	0	0	0	0

Settlements : Christmas period arrangements 1/2

Operational Date	Market	Publication	Statement Type Alias	Period Type	Period End Date
2018-12-21	BALIMB	Settlement Documents		Week	2018-12-15T00:00:00+00:00
2018-12-31	BALIMB	Payments In		Week	2018-12-15T00:00:00+00:00
2019-01-02	BALIMB	Payments Out		Week	2018-12-15T00:00:00+00:00
2019-01-03	BALIMB	Settlement Documents		Week	2018-12-22T00:00:00+00:00
2019-01-07	BALIMB	Settlement Documents		Week	2018-12-29T00:00:00+00:00
2019-01-08	BALIMB	Payments In		Week	2018-12-22T00:00:00+00:00
2019-01-09	BALIMB	Payments Out		Week	2018-12-22T00:00:00+00:00

Settlements : Christmas period arrangements 2/2

2019-01-10	BALIMB	Payments In	Week	2018-12-29T00:00:00+00:00
2019-01-11	BALIMB	Payments Out	Week	2018-12-29T00:00:00+00:00
2019-01-11	BALIMB	Settlement Documents	Week	2019-01-05T00:00:00+00:00
2019-01-11	CRM	Settlement Documents	Month	2018-12-31T00:00:00+00:00
2019-01-11	MO	Settlement Documents	Month	2018-12-31T00:00:00+00:00

Settlements : Other updates

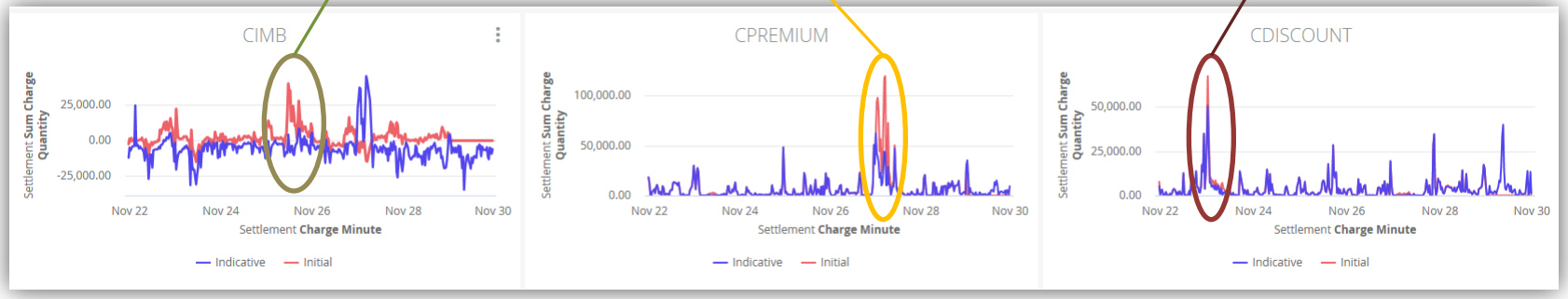
- Update on recent ad-hoc resettlement for Oct 9th …next steps Resettlement planning
- Update on recent Indicative 27th November query
- Update on finance banking details to use
  - Bank Account for paying Balancing/Capacity Payments/**MO**. Details can be found at the below SEMO website links
    - http://sem-o.com/documents/general-publications/Advising-Letter-to-Participants-re-SEMO-Enduring-Bank-Accounts-GBP.pdf
    - http://sem-o.com/documents/general-publications/Advising-Letter-to-Participants-re-SEMO-Enduring-Bank-Accounts-EURO.pdf
- Update on tool to use to view Settlement Documents – print out for PTs to take away

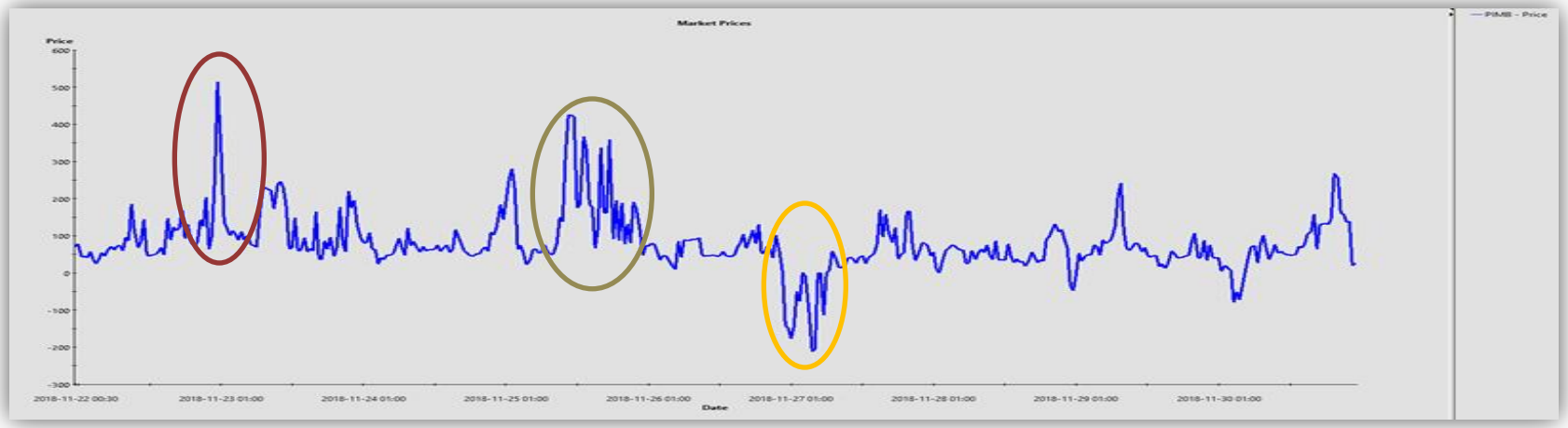
Settlements – Balancing Market Cashflow

High PIMB 25/11/18

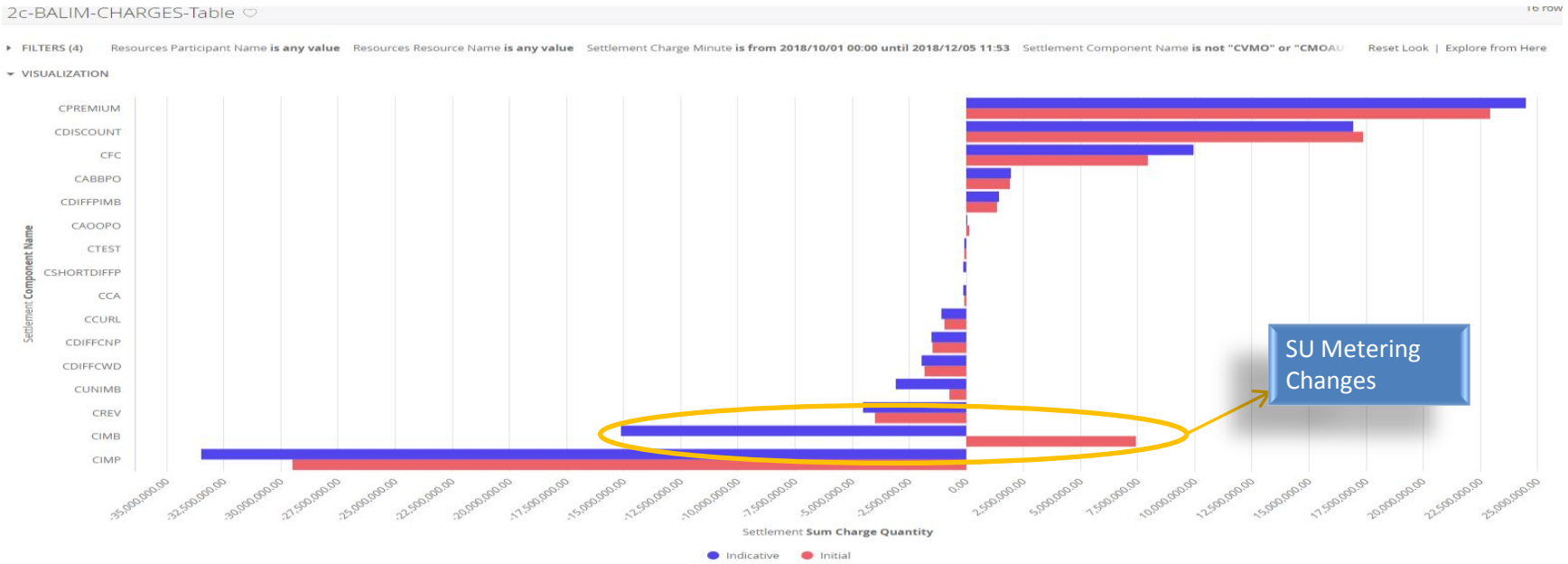
Low PIMB 27/11/18

High PIMB 23/11/18



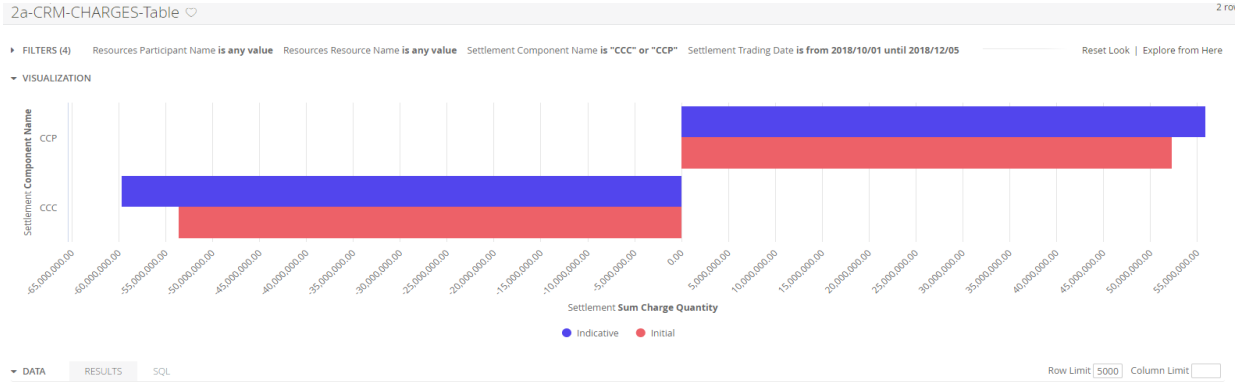


Settlements – Balancing Market Cashflow



Settlement Statement Type	Indicative	Initial	
Settlement Component Name	Settlement Sum Charge Quantity	Settlement Sum Charge Quantity	Long Name
CPREMIUM	24,496,424.56	22,969,515.81	Premium Payment
CDISCOUNT	16,968,837.83	17,373,713.71	Discount Payment
CFC	9,955,094.72	7,966,950.37	Fixed Cost Payment or Charge
CABBPO	1,977,141.95	1,908,454.82	Bid Price Only Accepted Bid Payment or Charge
CDIFFPIMB	1,436,497.40	1,353,064.19	Imbalance Difference Payment
CAOOPO	42,293.27	162,320.55	Offer Price Only Accepted Offer Payment or Charge
CTEST	-70,763.19	-73,214.74	Testing Charge
CSHORTDIFFP	-95,407.66		Difference Payment Shortfall Charge
CCA	-97,415.44	-86,398.13	Currency Adjustment Charge
CCURL	-1,082,344.21	-922,669.78	Curtailment Payment or Charge
CDIFFCNP	-1,511,226.35	-1,476,623.15	Non-performance Difference Charge
CDIFFCWD	-1,936,896.14	-1,818,326.82	Within-day Difference Charge
CUNIMB	-3,070,742.53	-728,222.39	Uninstructed Imbalance Charge
CREV	-4,514,939.59	-3,983,214.18	Residual Error Volume Charge
CIMB	-15,098,183.57	7,427,170.54	Imbalance Payment or Charge
CIMP	-33,481,752.11	-29,457,687.12	Imperfections Charge
Total	**-6,083,381.07**	**20,614,833.71**	

Settlements – Capacity & Market Operator



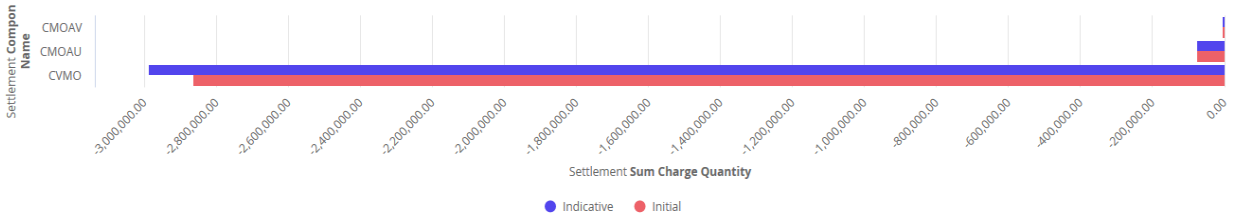
Settlement Statement Type	Indicative	Initial	
Settlement Component Name	Settlement Sum Charge Quantity	Settlement Sum Charge Quantity	Long Name
CCP	55,905,264.94	52,308,148.34	Capacity Payment
CCC	-59,635,760.83	-53,576,139.53	Capacity Charge
Total	**-3,730,495.89**	**-1,267,991.19**	

CCP - Capacity Payments

$$CCP_{\Omega\gamma} = \sum_{n \in \gamma, qCCOMMISS \neq 0} \left(qC_{\Omega n} \times PCP_{\Omega n} \times \frac{1}{ISPIY_y} \right)$$

CCC – Capacity Charges

$$CCC_{v\gamma} = QMLF_{v\gamma} \times FQMCC_{\gamma} \times PCCSUP_y$$



Settlement Statement Type	Indicative	Initial
Settlement Component Name	Settlement Sum Charge Quantity	Settlement Sum Charge Quantity
CMOAV	-1938.51	-1938.51
CMOAU	-74586.9235	-74586.9235
CVMO	-2986414.249	-2861828.206
	-3062939.682	-2938353.64

CMOAV – Fixed Market Operator Supplier Charge

CVMAU – Fixed Market Operator Generator Charge

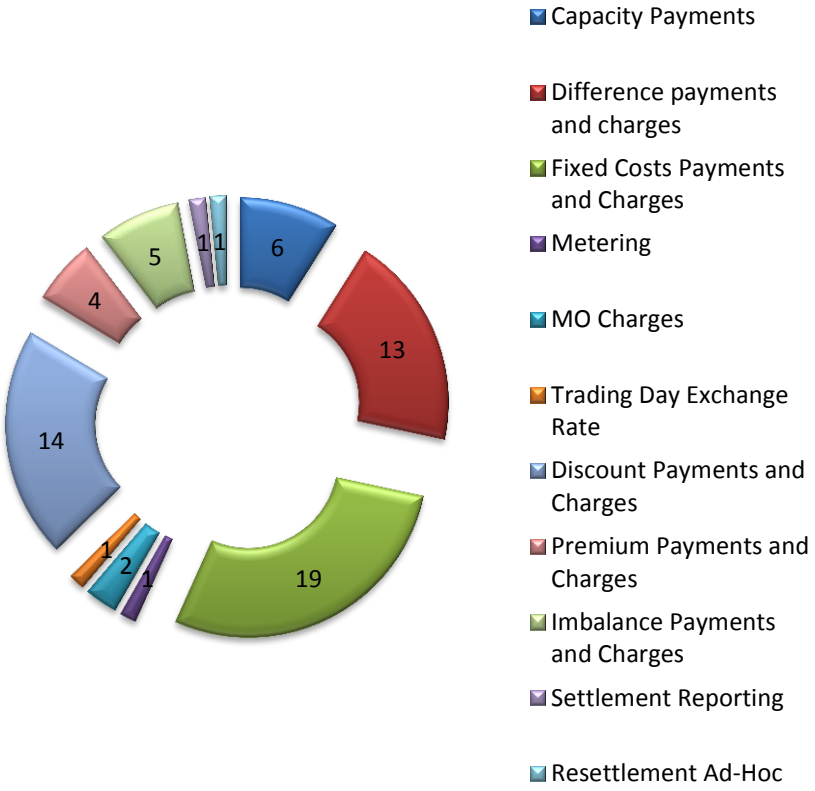
$$CMOA_{py} = \sum_{v \text{ in } p} CMOAV_{vy} + \sum_{u \text{ in } p} CMOAU_{uy}$$

CVMO - Variable Market Operator Charge

$$CVMO_{vb} = \sum_{\gamma \text{ in } b} QMLF_{v\gamma} \times PVMO_y$$

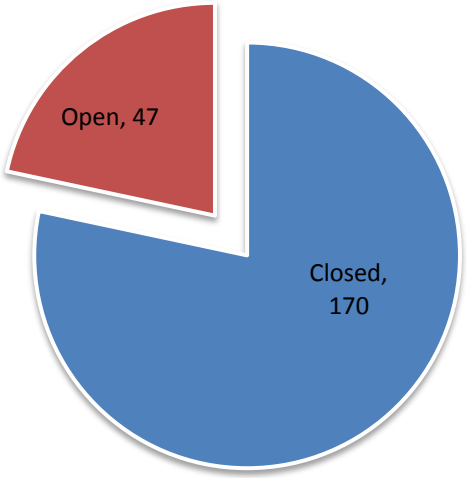
Settlements Queries Statistics

Formal Settlement Queries

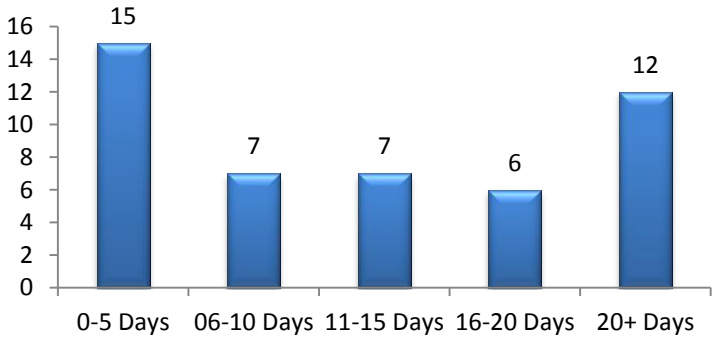


58 Completed Formal Queries out of a Total of 67 (87%)

General Queries



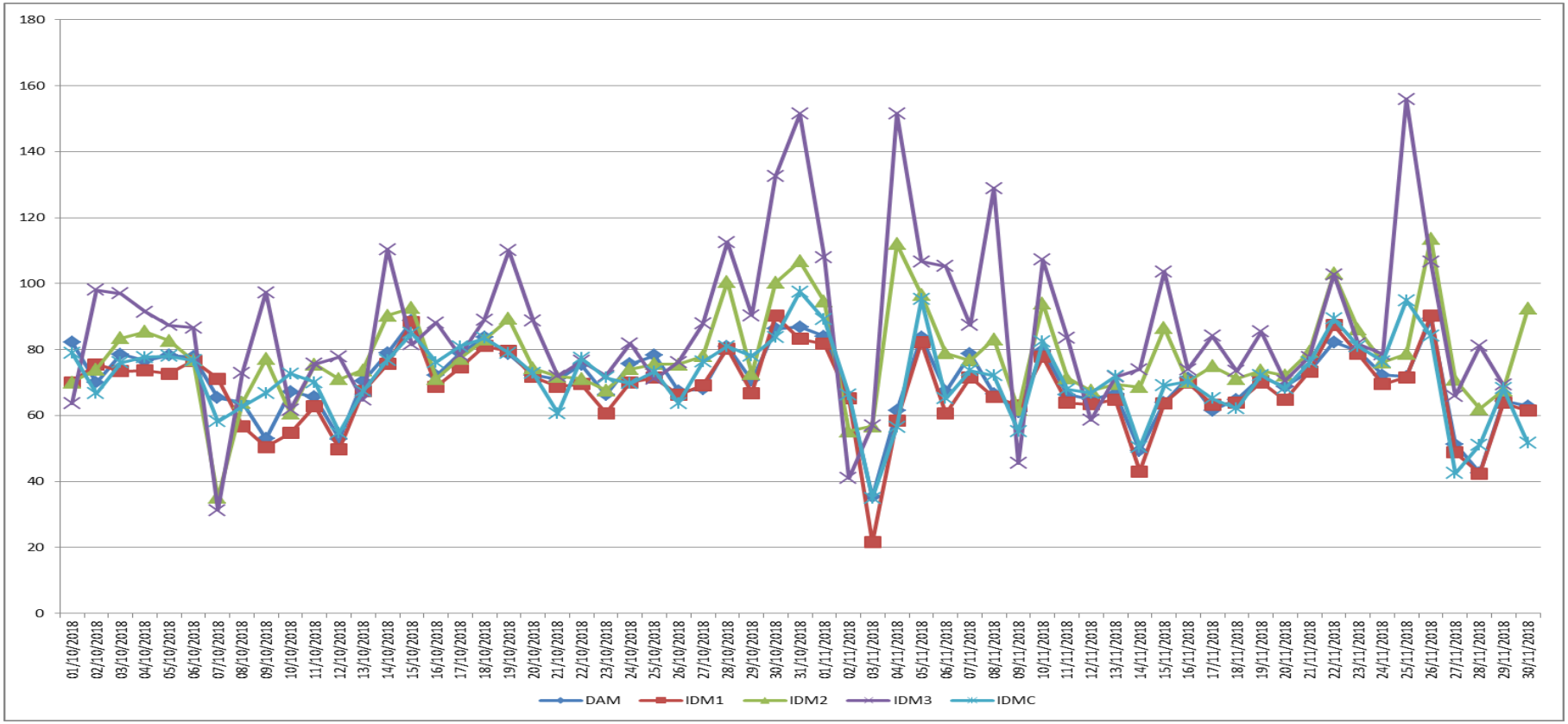
Open Queries - Days Open



Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Ex-Ante Market	Liam McAllister
Balancing Market	Aodhagan Downey, Sam Matthews
Disputes & Repricing Update	Dermot Campfield, Brendan O'Sullivan
Settlements & Cashflow Analysis	Sean O'Rourke, John O'Dea
High Level Market Overview	**Brendan O'Sullivan**
Known Issues Report Update	Severin Garanzuay
Query Management	Claire Breslin
Q&A	

Average Ex-Ante Auction Prices



- Average DAM Price: €70.58/MWh
- Average IDA1 Price: €68.17/MWh
- Average IDA2 Price: €78.16/MWh
- Average IDA3 Price: €86.89/MWh
- Average IDMC Price: €71.21/MWh

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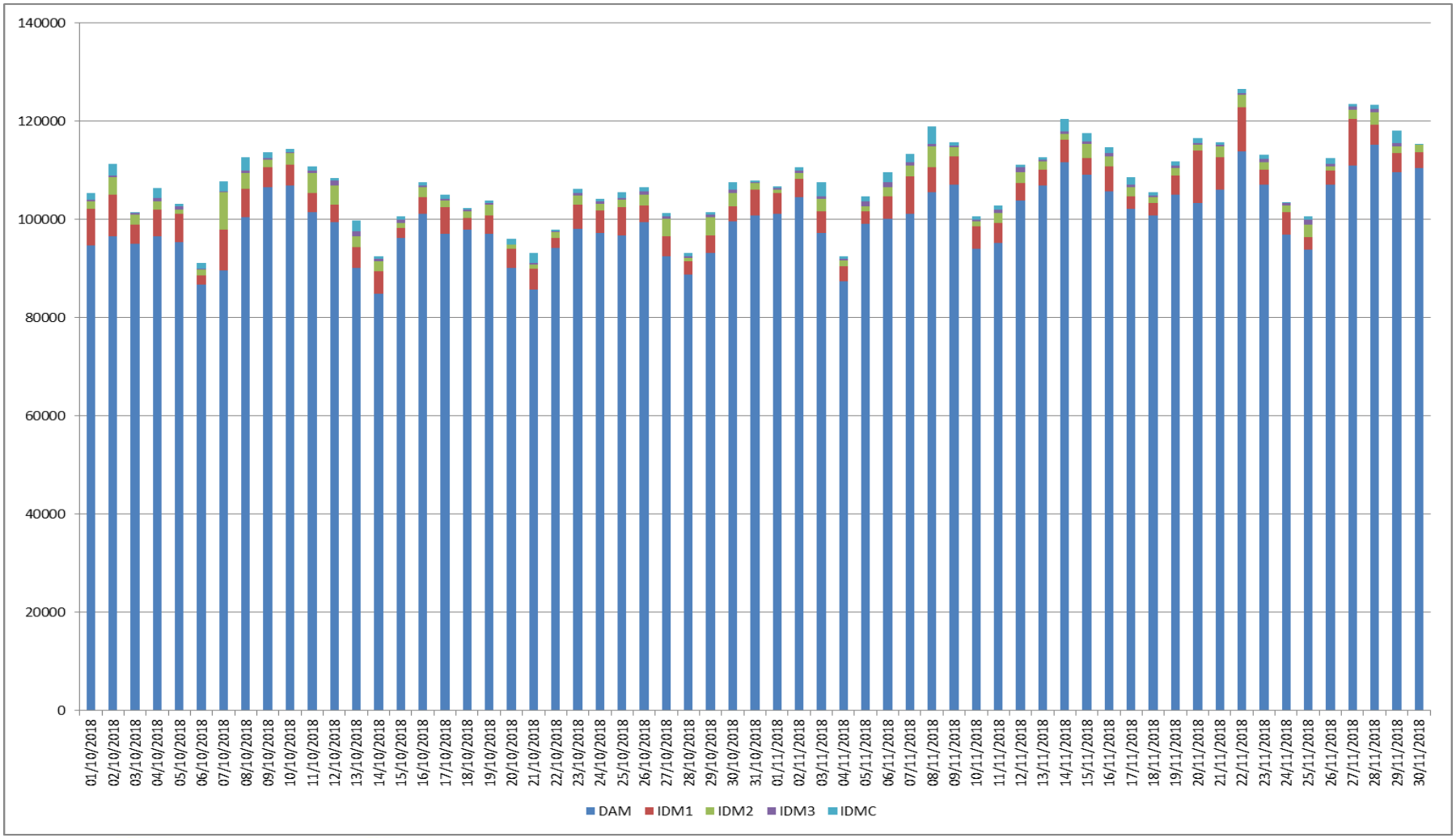
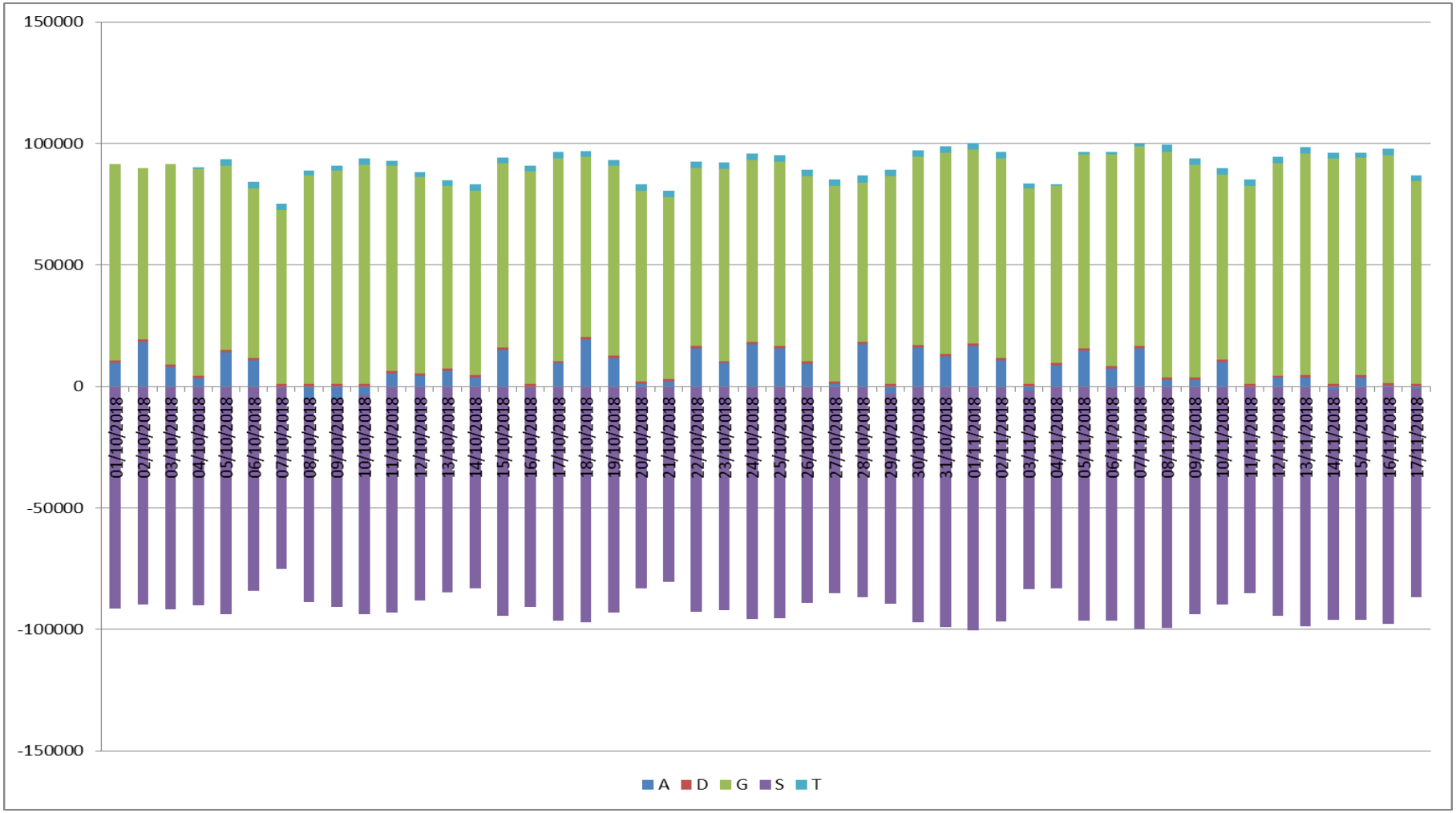
Ex Ante Volumes



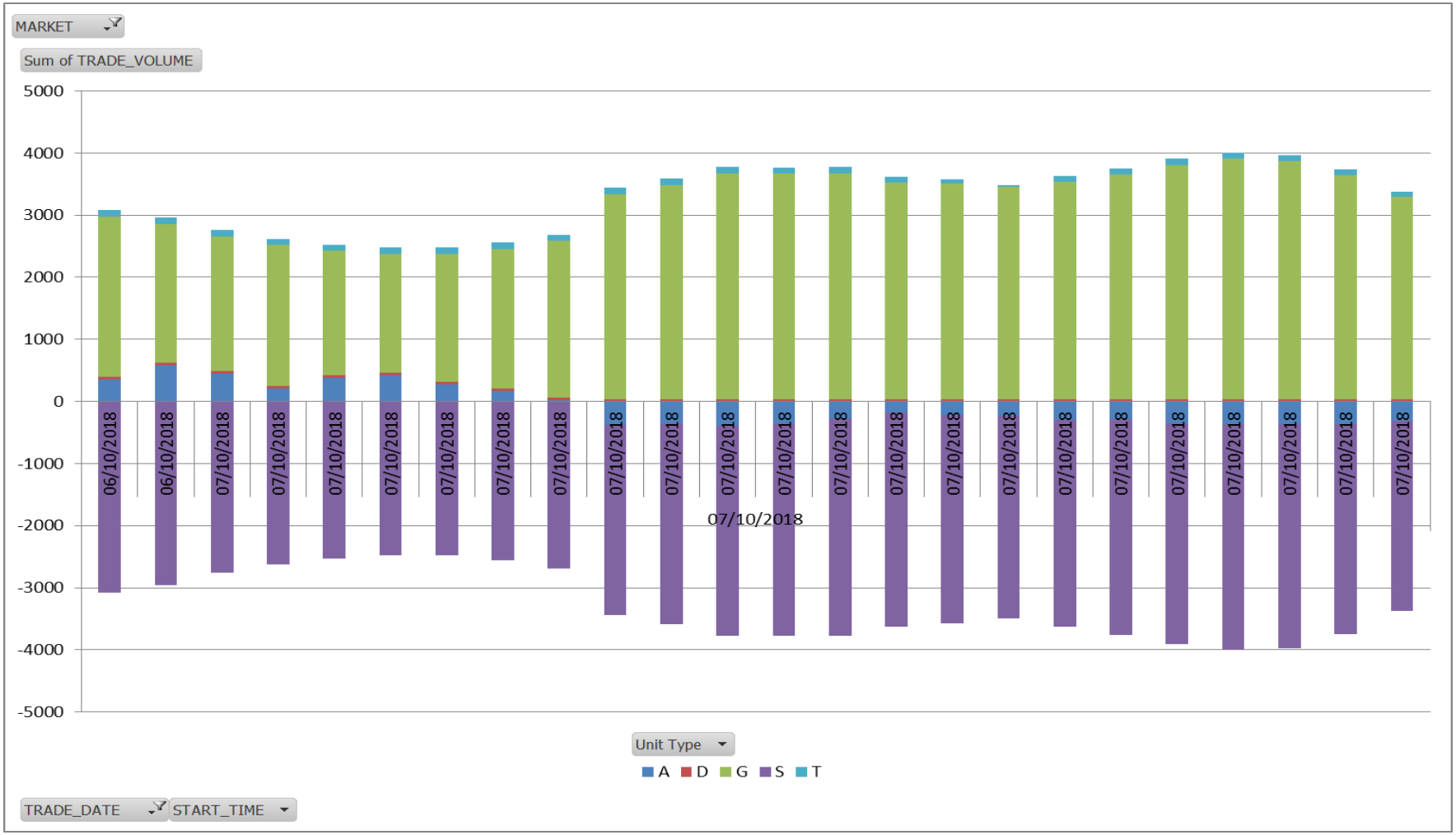
Trading in all markets but highest concentration of liquidity in the DAM

Ex Ante Volumes



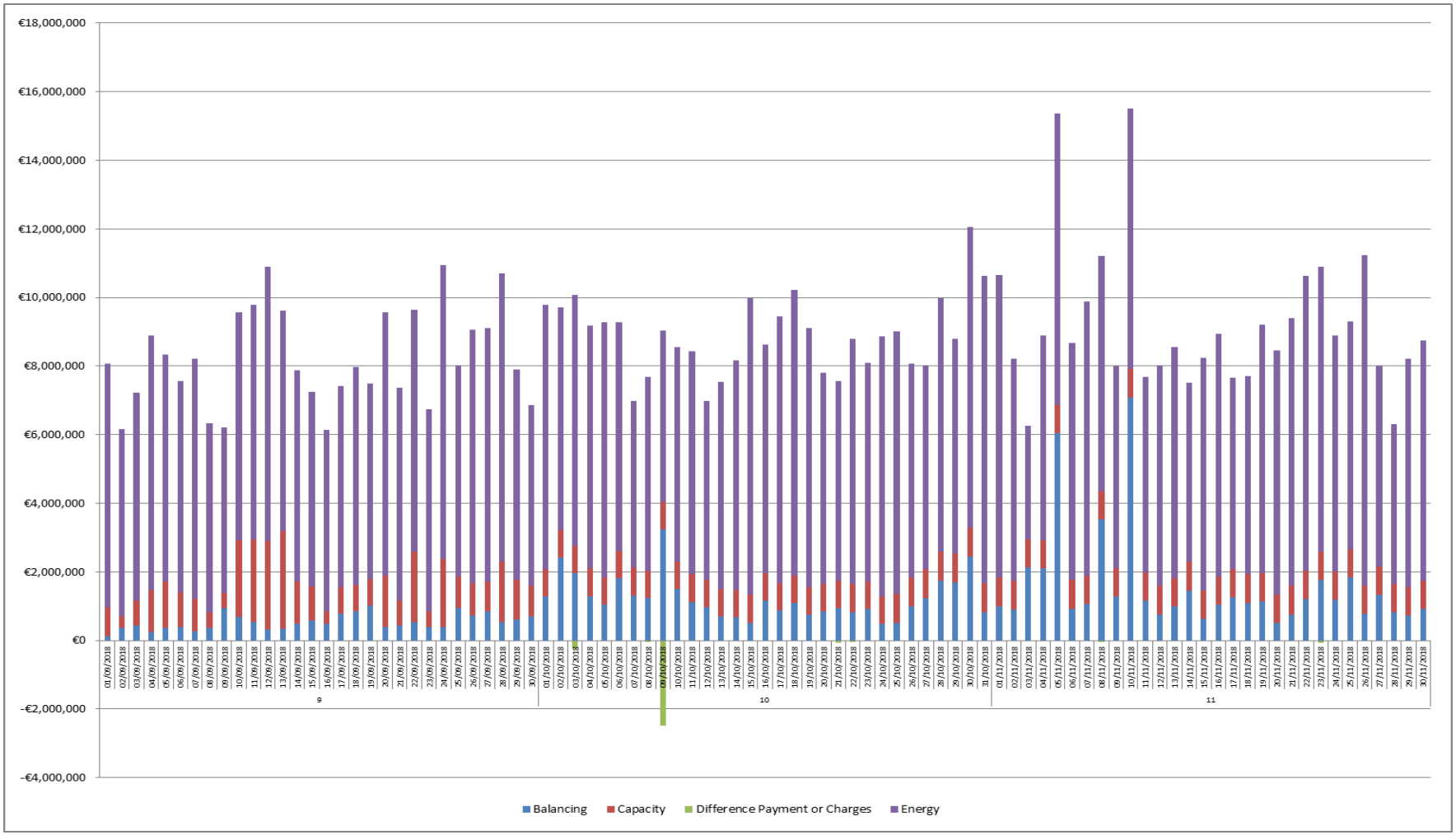
Fundamentals of the market are unchanged – supplier companies buy and generators sell

Ex Ante Volumes



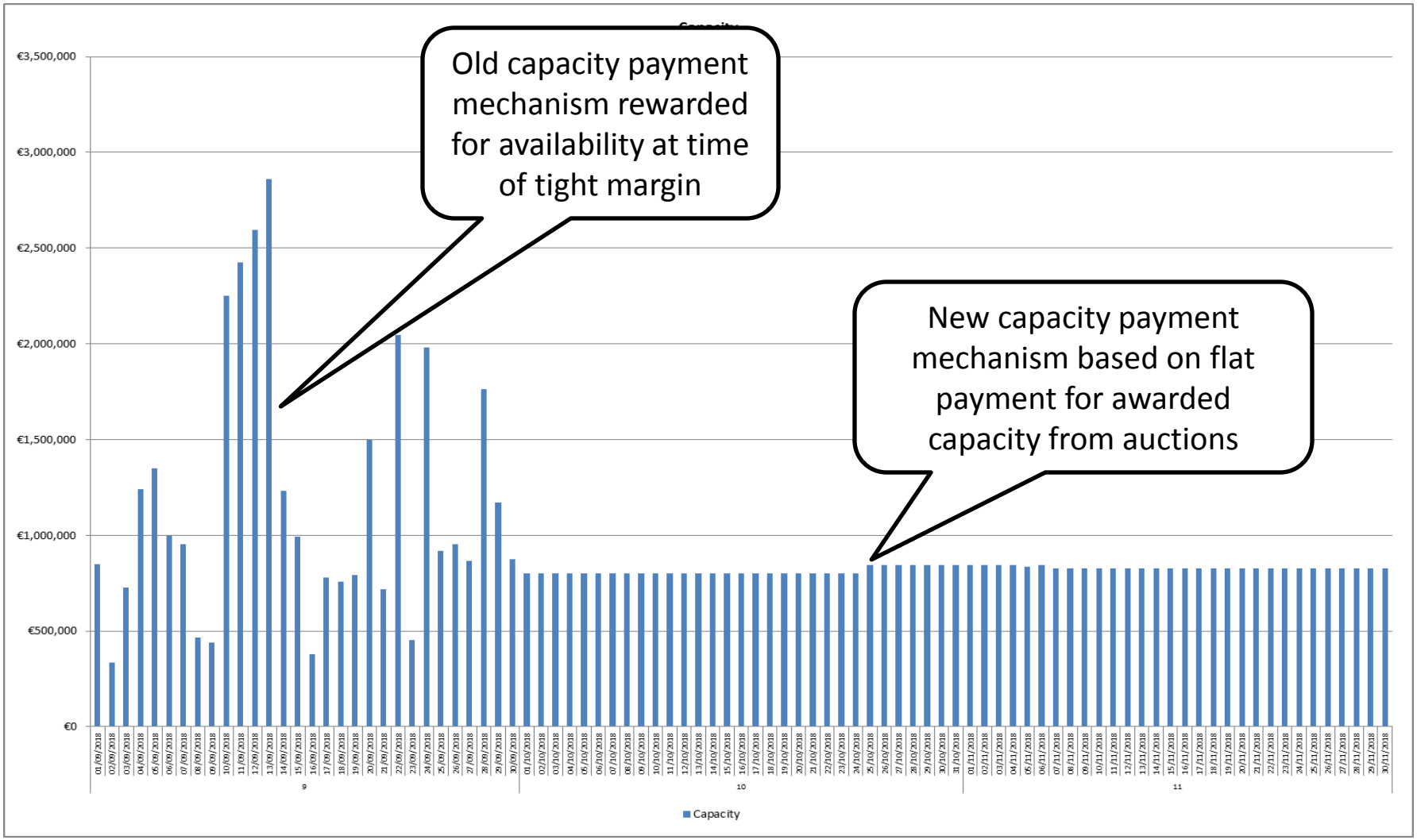
The standard DAM… cross border flows represented by assetless units

Daily Revenue – Sept / Oct / Nov 2018



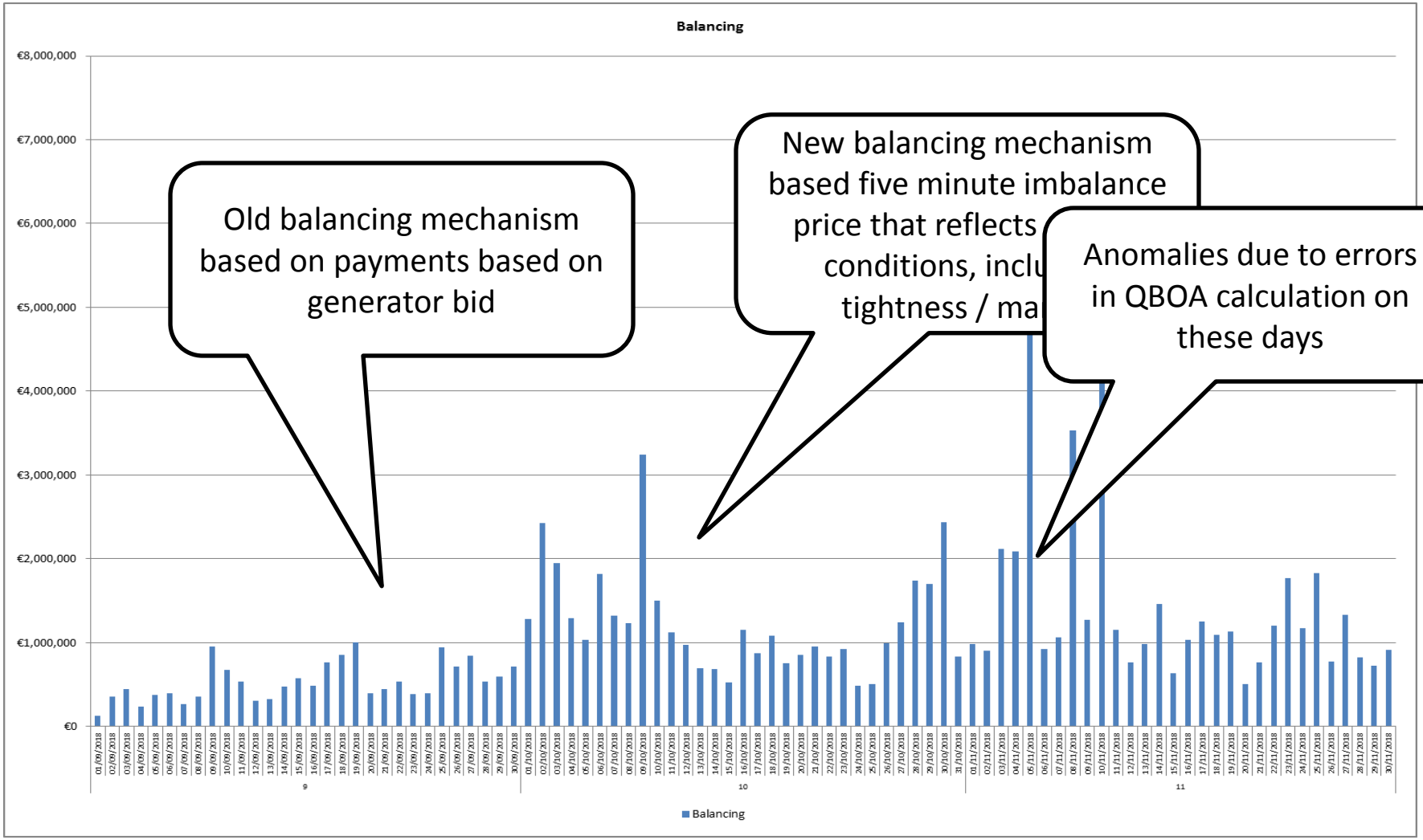
Energy costs generally still reflective of pre-transition costs

Capacity Daily Revenue – Sept / Oct / Nov 2018



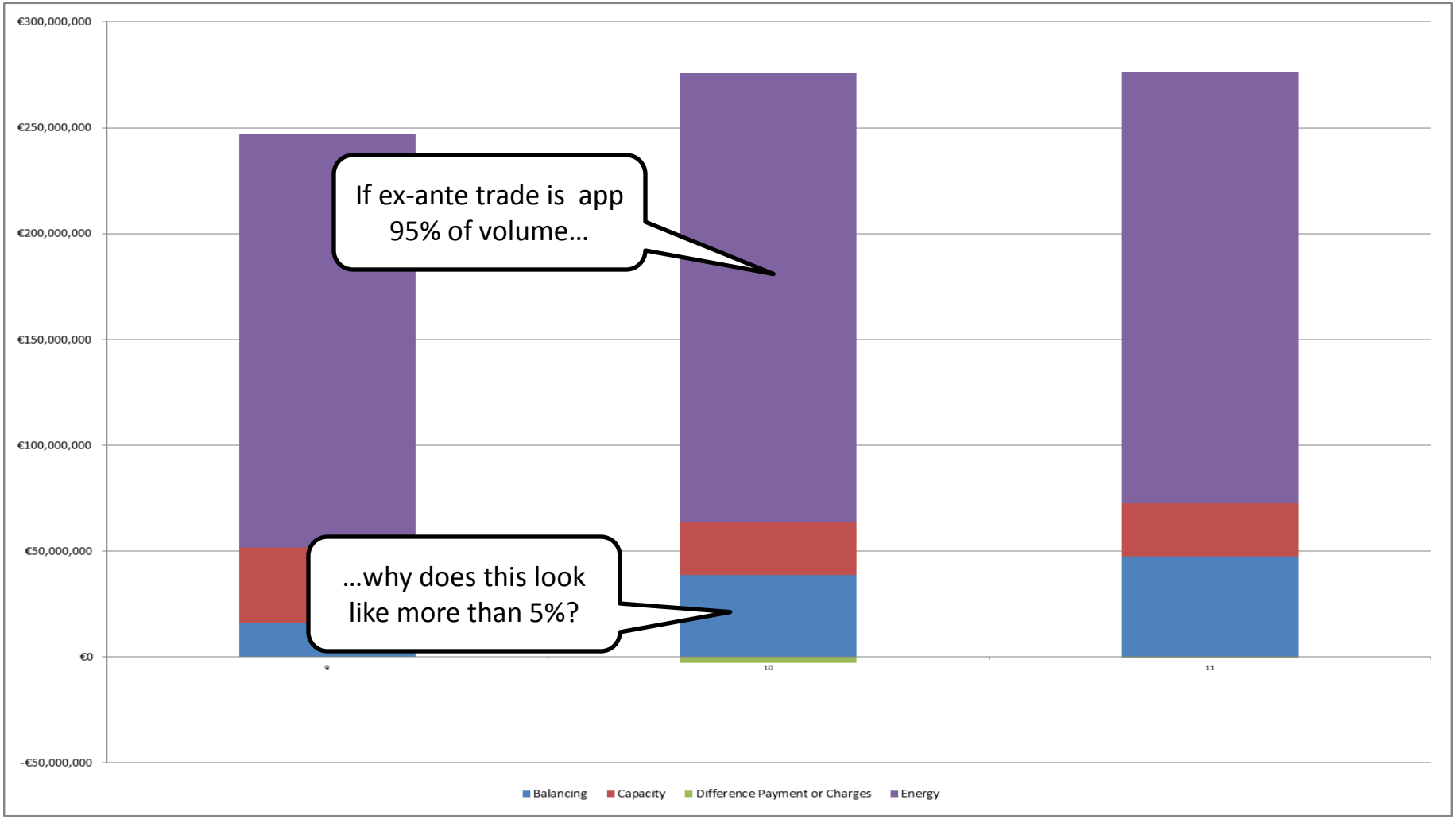
Change in trend of Capacity Payments

Balancing Daily Revenue – Sept / Oct / Nov 2018

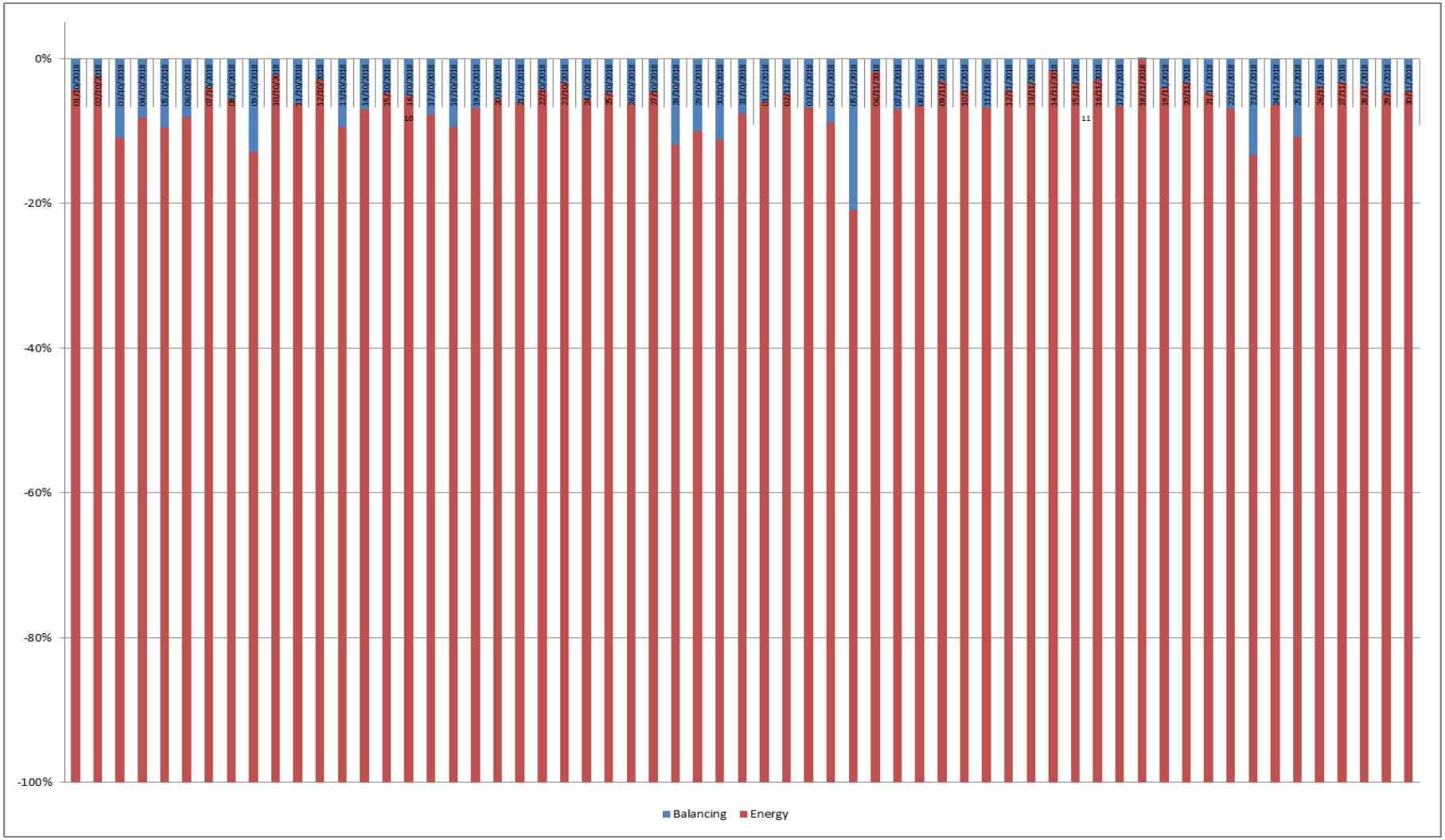


With a reverse trend in Balancing payments

Monthly Revenue – Sept / Oct / Nov 2018

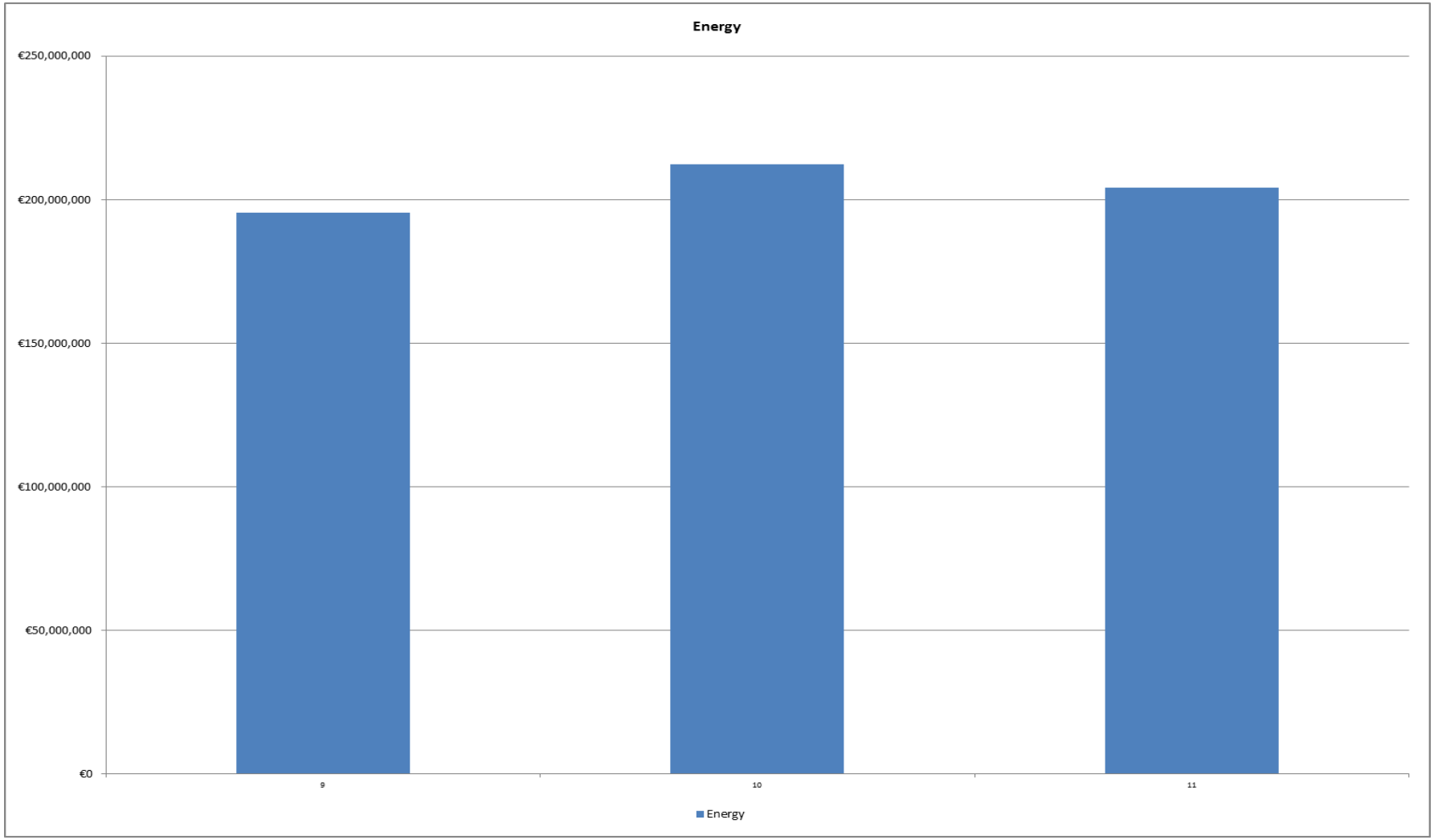


Supplier settlement as %



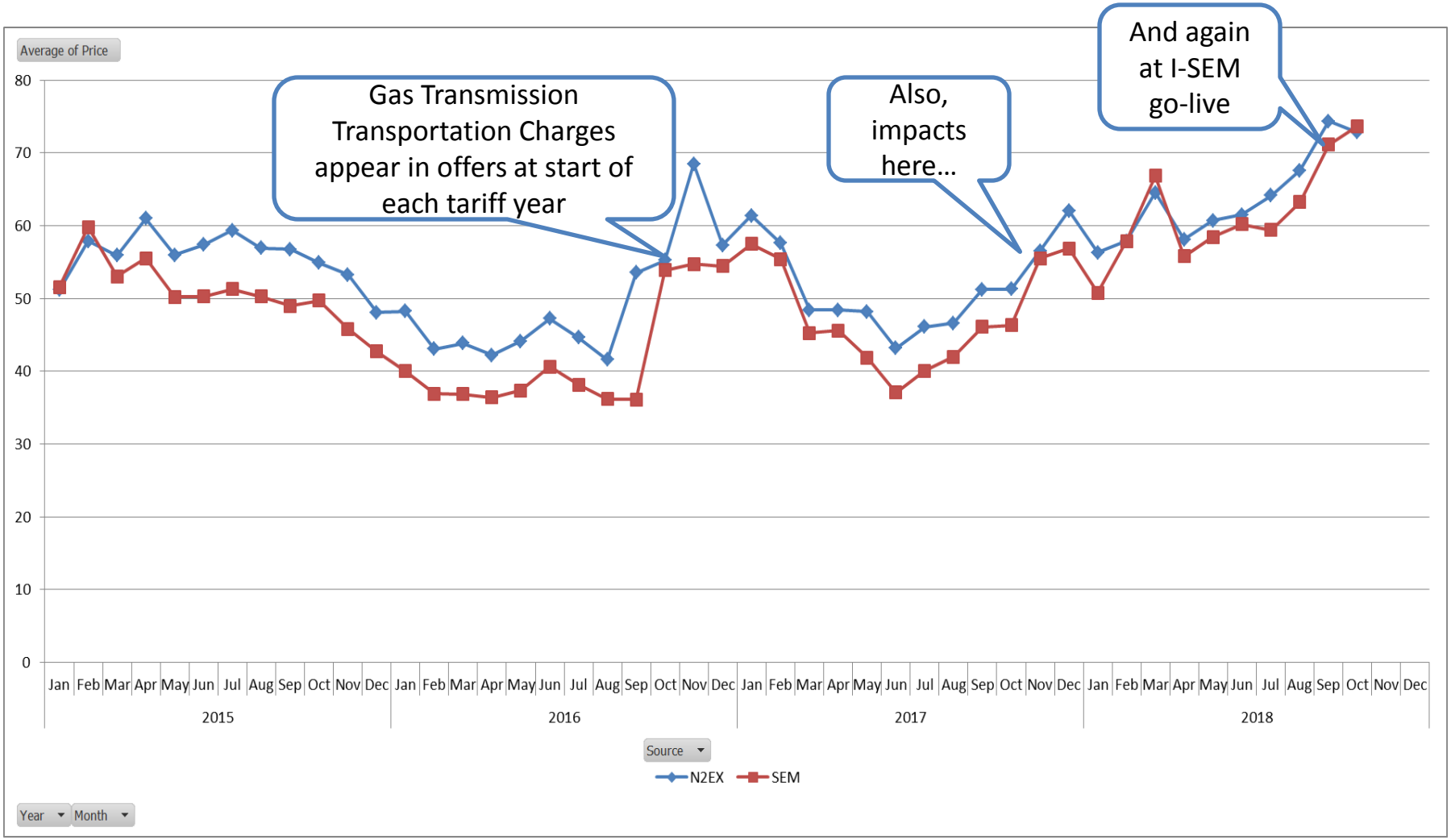
Because the previous graph is based on payments out…

Monthly Revenue – Sept / Oct 2018



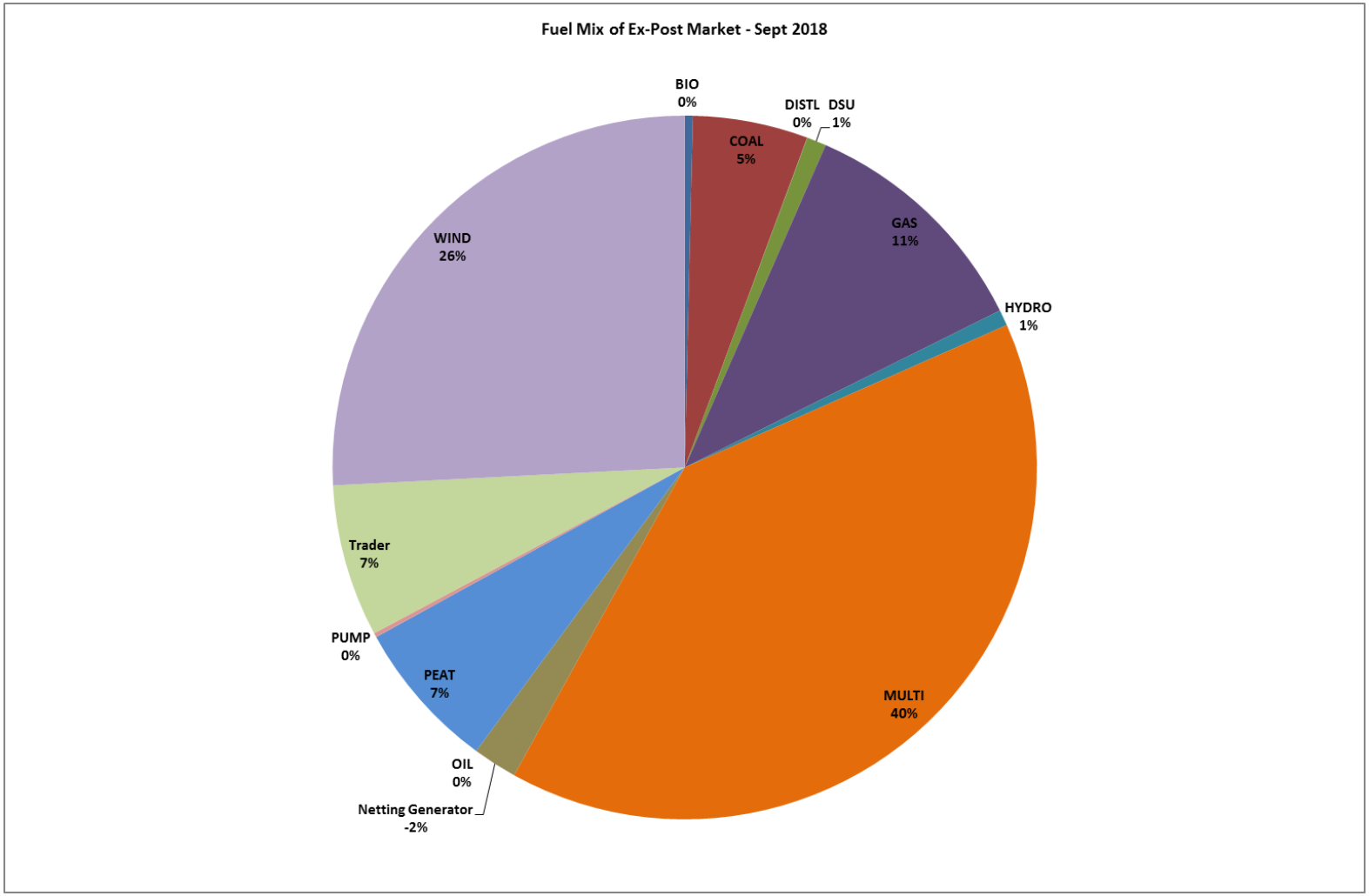
All things considered, energy costs are still higher – why?

Wholesale market price trends – SEM vs N2EX



Rises in costs reflective of external factors (fuel costs, etc.)

Fuel Mix of Ex-Post Market - Sept 2018



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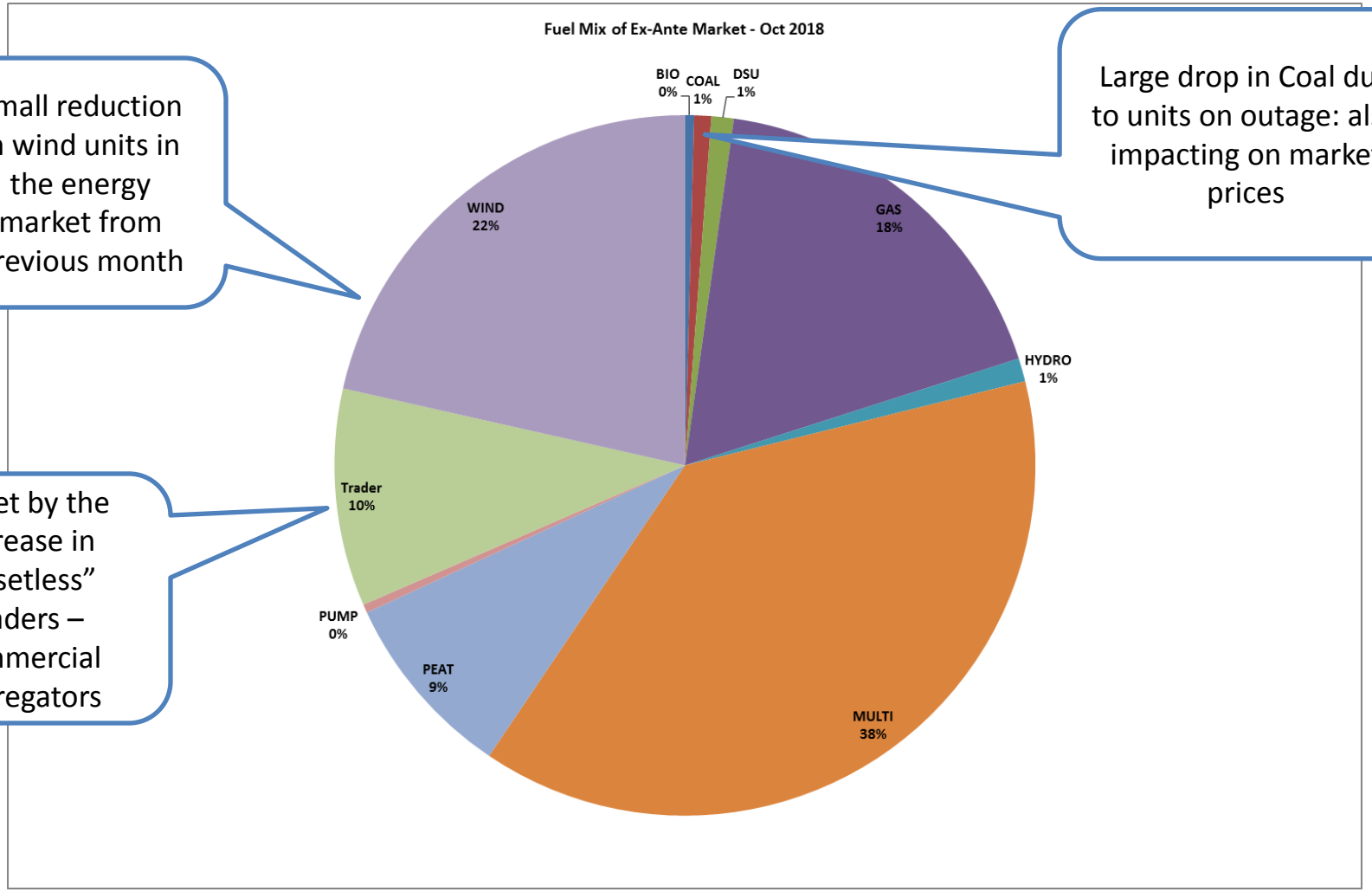
Fuel Mix of Ex-Ante Market - Oct 2018



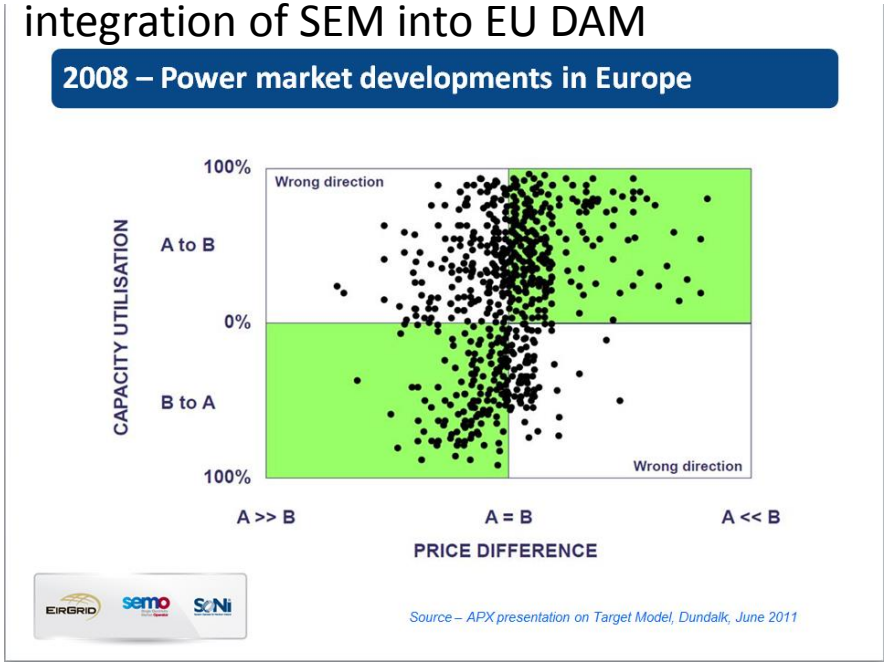
Small reduction in wind units in the energy market from previous month

Large drop in Coal due to units on outage: also impacting on market prices

Offset by the increase in "assetless" traders – commercial aggregators

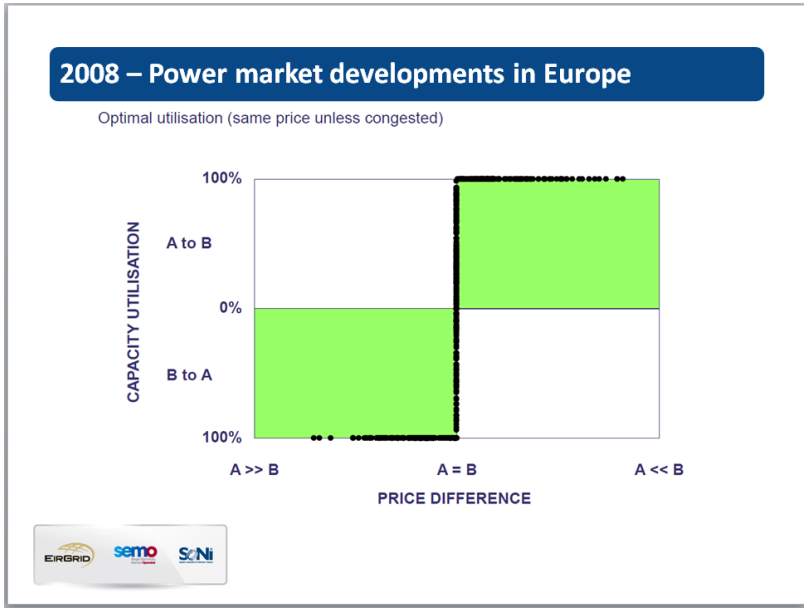
Market Coupling

In 2011, Andrew Claxton from APX presented on Market Coupling at first event on integration of SEM into EU DAM



In the slide pack, he showed how central EU cross border flows changed from this…

To this…



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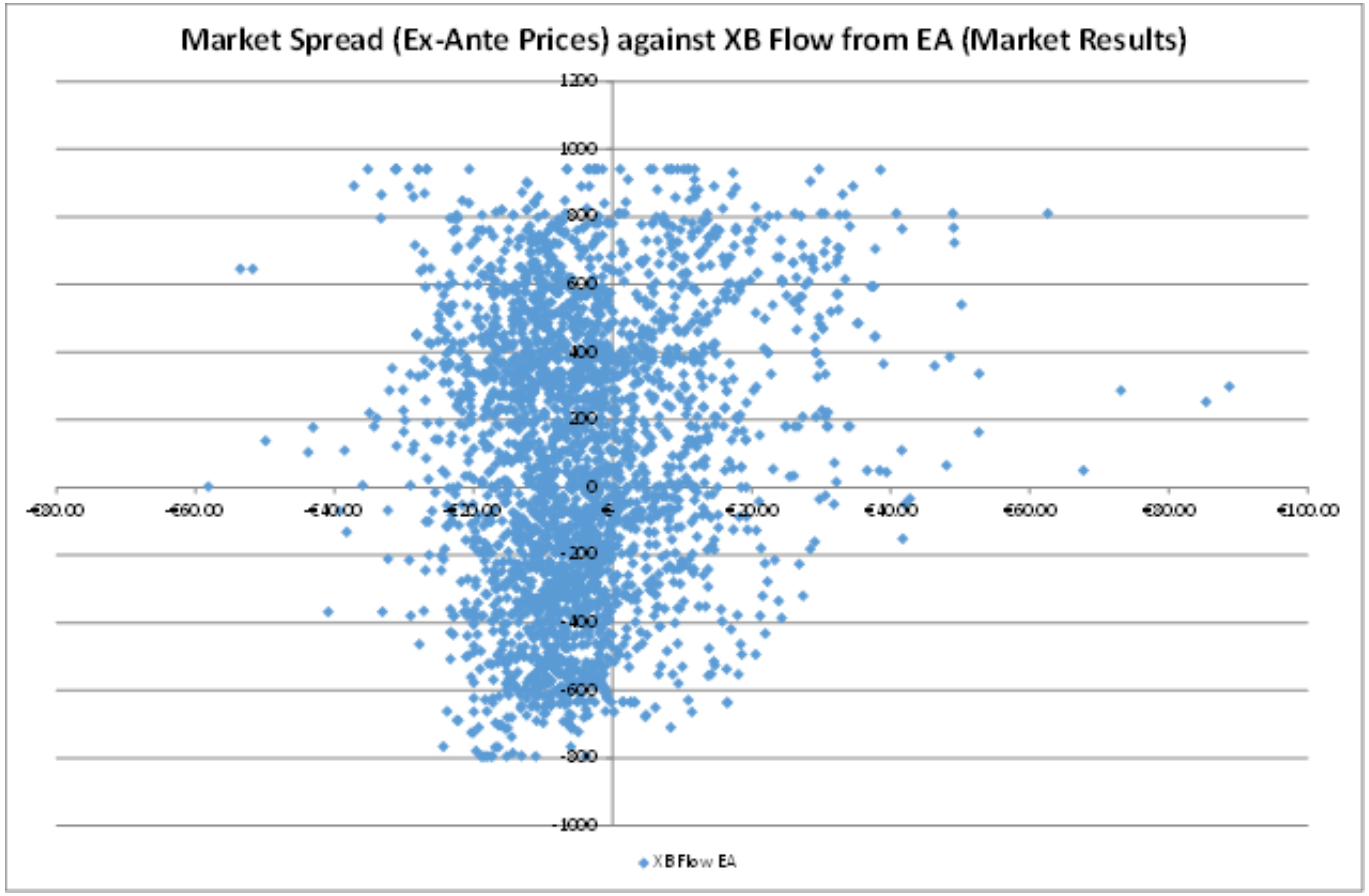
Market Coupling

Now, we have our own version of this story

- cross border flows from EA runs in the last months of the SEM



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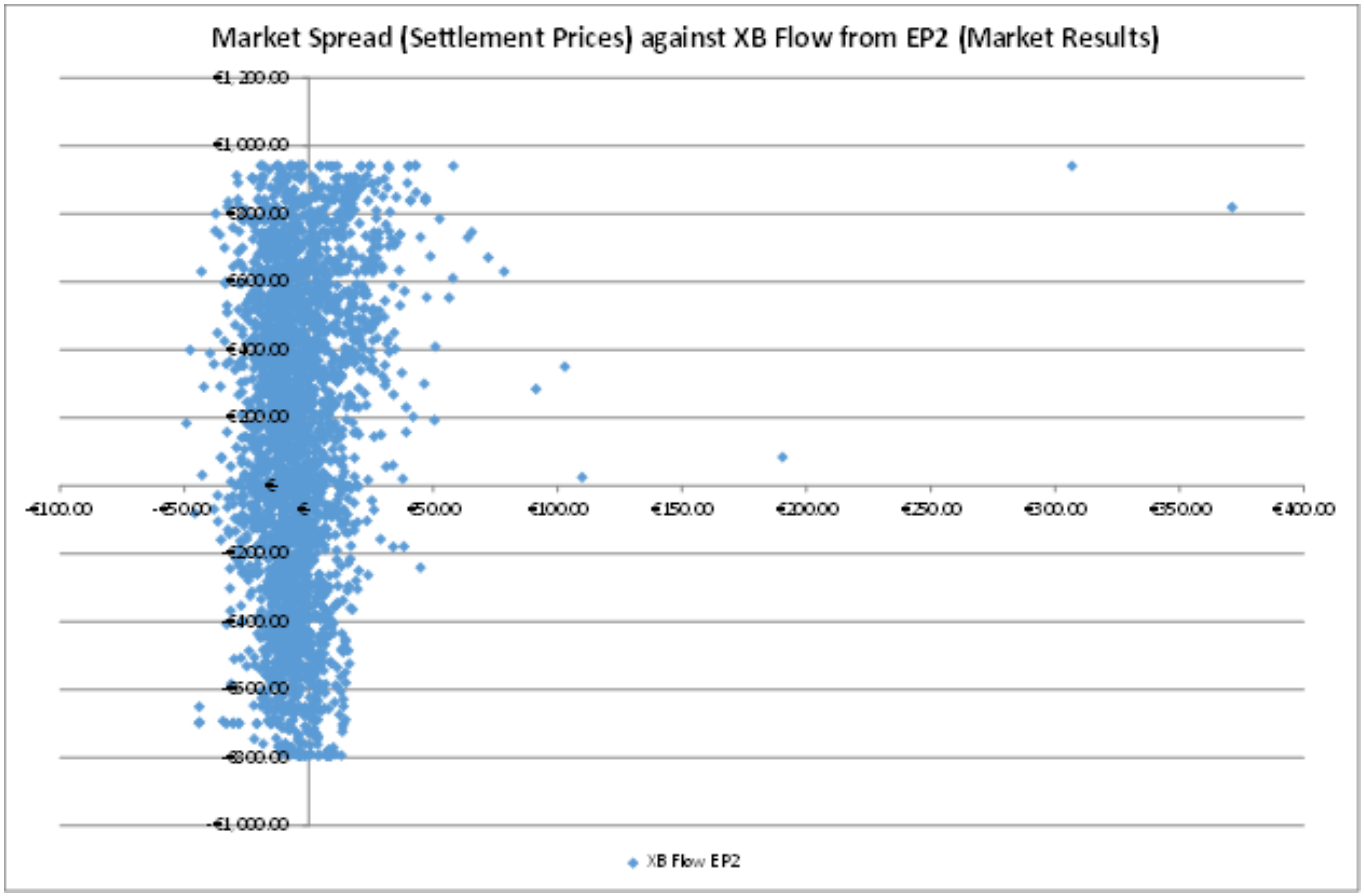
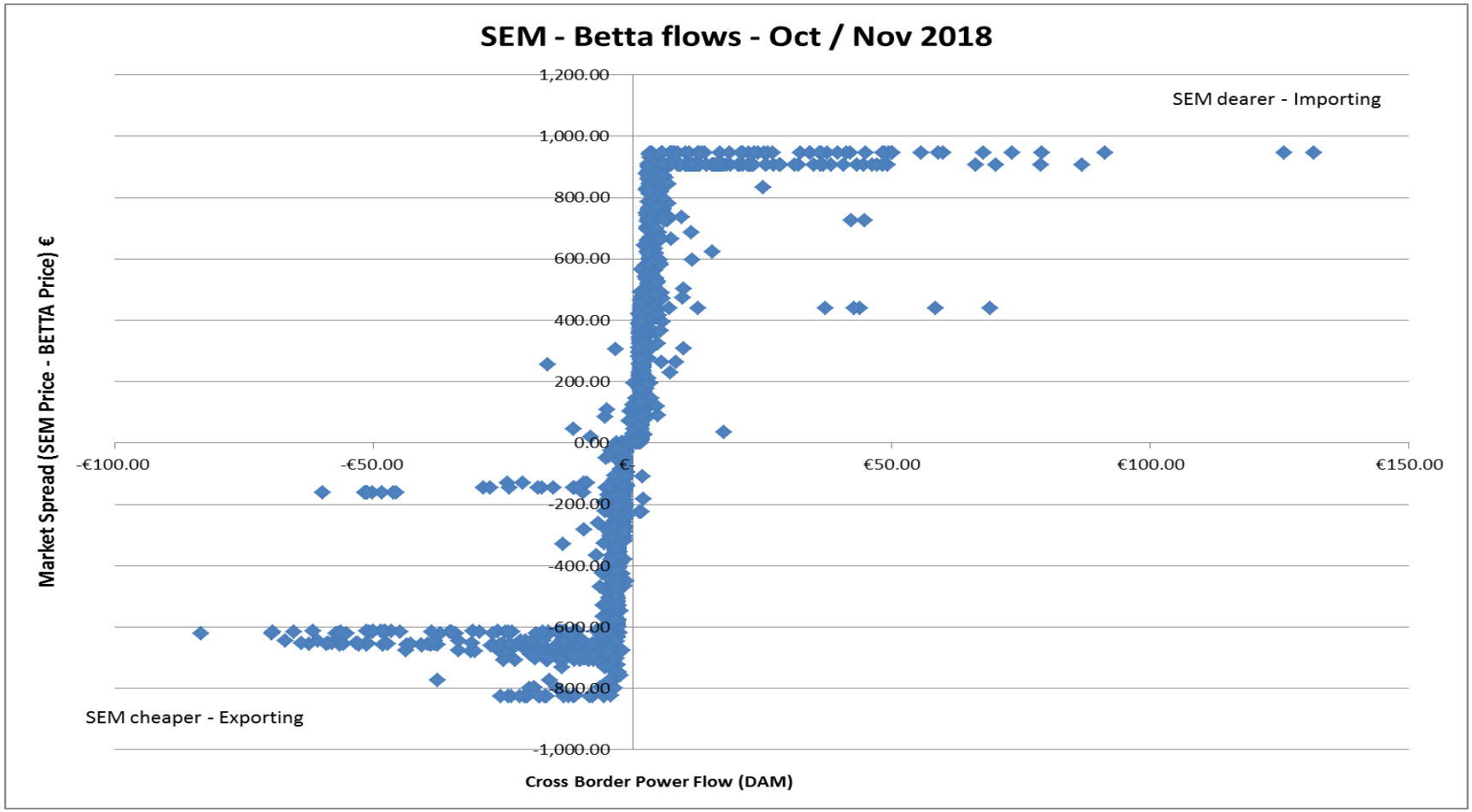
Market Coupling

Cross border positions after intraday auctions and ex-post runs completed – the addition of traders compresses the price spread.



Market Coupling

Cross border positions after the DAM for the first two months of I-SEM



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Known Issues Report Update	**Severin Garanzuay**
Query Management	Claire Breslin
Q&A	

Known Issues Discussion: Summary Metrics

Known Issues: Summary			
Market / Function	**In Analysis**	**Planned Release Date**	**Total**
SEMO: Balancing Market	14	2	16
SEMO: Settlements	9	10	19
SEMOpx	3		3
Total	**26**	**12**	**38**

- Potential Day 1 Plus (7)
  - SEMO Bal Mkt (7)

- Delivery to EG: Dec 2018
- EG Test
- Dec 2018 – Jan 2019
- Planned Release: Jan 2019

Based on data from KI Report: 06 Dec 2018

Known Issues: SEMOpx (1/1)

ID	Name	Description	Impact to Market Participants	Status Resolution Date
92601	ETS Auction Results Message	Message log is not retaining the message indicating availability of the ETS Auction Results.	No material impact to SEMOpx Members. Members can view all auction results. Members will need to look at auction results reports/screens to determine availability of auction results, as opposed to reviewing the message log.	In Analysis TBC w/ EPEX
SEMOPX.001	Production of Bid/Ask Curves Report	Bid/Ask Curves report fails to generate following an auction, for a given jurisdiction, when there are no orders received for that auction.	Low impact to Members as the file would otherwise be empty. However, this defect will be remedies prior to go-live.	In Analysis TBC w/ EPEX
SEMOpx.003	REMIT Reporting	Known issue with the delay in reporting SEMOpx Memer transaction to ACER REMIT platform. Testing of solution ongoing.	SEMOpx Member transactions are not reported to ACER until this is resolved.	In Analysis TBC w/ EPEX

Known Issues: SEMO Balancing Market (1/4)

ID	Name	Description	Status Resolution / Date
5195	Report display	HTML report is displayed in UTC rather than always in local time.	In Analysis Potential Day 1 Plus
5329	Reports missing 1st ISP of Trade Day	Reports not showing first ISP interval for trade date in report. REPT_078: Aggregated Contract Quantities for Generation REPT_079: Aggregated Contract Quantities for Demand REPT_080: Aggregated Contract Quantities for Wind	In Analysis Potential Day 1 Plus
5497	VTOD Soak Times	When retrieving VTOD from the MPI via type 2 or type 3, the SOAK WARM QUANTITY values are incorrect. The values shown are the SOAK HOT QUANTITY values. Please note: the integrity of the VTOD set is unaffected. This is simply an incorrect display in the MPI.	In Analysis Potential Day 1 Plus
5575	REPT_050 Imbalance Price Supporting Information Report	The report no longer contains duplicates items (5209) however now contains an undocumented field 'Constraint Id'	Planned Release Date Update to ITS Vol C 14 Dec 2018

Known Issues: SEMO Balancing Market (2/4)

ID	Name	Description	Status Resolution / Date
5587	Missing Reports on the new SEMO Website	2 Reports are currently not publishing to the new SEMO website. REPT_027 (Four Day Rolling Wind Forecast) and REPT_013 (Daily Commercial Offer Data)	In Analysis Potential Day 1 Plus
5603	REPT_081 hourly Anonymized INC and DEC Curves	Currently the report cumulatively adds each MW quantity to the last MW quantity rather then the difference. This results in erroneous MW values in the report.	In Analysis Potential Day 1 Plus
5635	REPT_102: Hourly Dispatch Instructions Report Intermittently Fails to generate in XML format.	Some instances of the PUB_HrlyDispatchInstr report (REPT_102) in XML format have failed to generate on the MPI and as a result, are also no appearing on the public website. The report is generated and available in HTML format.	Planned Release Date Jan 2019
5641	Incorrect MW QTY values in REPT_078/079	MW QTY values in REPT_078, _079, _080 are not being calculated correctly.	In Analysis Potential Day 1 Plus

Known Issues: SEMO Balancing Market (3/4)

ID	Name	Description	Status Resolution / Date
5796	REPT_042	The Forecast Imbalance Report is not calculating the some of the data within the reports correctly.	In Analysis TBC
5812	REPT_068 UOM error	The Dispatch Quantity report (REPT_068) erroneously calculates the "Dispatch Quantity" field as MW for P/S units when in pumping mode. These values should be calculated and reported as MWh.	In Analysis TBC
102371	Retention of static reports on SEMO website	The SEMO website is currently archiving static reports after two weeks. There is a request from Market Participants and General Public audiences to retain those files for a longer duration.	Closed Software configuration update form vendor 06 Dec 2018
BalMkt.901	REPT_006: Daily DI Report	For P/S Units, intermittent representation of duplicate values (MWOF) instructions appearing. This is due to internal processing of records and does not affect the Instruction Profiling process, only the outbound report.	In Analysis TBC

Known Issues: SEMO Balancing Market (4/4)

ID	Name	Description	Status Resolution / Date
BalMkt.902	REPT_006: Daily DI Report	This report is appearing EMPTY in the MPI and website.	Closed Software configuration update 05 Dec 2018
BalMkt.904	REPT_022: Initial Interconnector Flows and Residual Capacity	This report is appearing EMPTY in the MPI and website.	In Analysis TBC

Known Issues: SEMO Settlements (1/5)

ID	Name	Description	Status Resolution / Date
5314	REPT_043, _044	The timestamp attribute in the Value element contains +1 second, which it should not.	In Analysis TBC
5322	REPT_048 Collateral Report	PUBLICATION_TIMESTAMP attribute is incorrectly assigned the start time of the credit assessment, rather than the finish time.	In Analysis TBC
5339	REPT_043	Incorrect rounding applied to detail records. Summary and Detail records do not sum correctly.	In Analysis TBC
5654	Incorrect result for CDISCOUNT and CPREMIUM for the IRCU unit in REPT_043	In REPT_043, the CPREMIUM & CDISCOUNT charge calculations for the IRCU unit are incorrect due to missing data.	Planned Release Date Jan 2019

Known Issues: SEMO Settlements (2/5)

ID	Name	Description	Status Resolution / Date
5657	Biased Quantities for Generator Units registered as part of an Autoproducer site	Biased Quantities are currently being calculated for all generator units which is registered as part of an Autoproducer site.	In Analysis TBC
5658	REPT_044, incorrect values for QCOB, QCNET	Settlement Report is reporting QCOB and QCNET as daily values instead of 30 minute values, the calculation is working as designed using each ISP values in the Settlement calculations.	Planned Release Date Jan 2019
5741	FPN / Controllable Wind (DQ)	PN and Availability are not being profiled correctly i.e. the start and end of trading period effective values.	Planned Release Date Jan 2019
5757	The FPN value in IP is different from CSB	QFPN being calculated in MMS based on values of FPN profile on each half hour boundary point only and not considering changes in profile within the half hour.	Planned Release Date Jan 2019

Known Issues: SEMO Settlements (3/5)

ID	Name	Description	Status Resolution / Date
5761	Fixed Costs	Current logic needs to be modified so that CSB gets the correct complex offer data for when a complex bid has been used for a BOA. Fixes required on both Settlements System (CSB) and upstream Market Systems (MA/MI).	Planned Release Date Jan 2019
5766	Actual Availability	IP Time Weighted Average calculation of qAA only referencing beginning and end of trading period	Planned Release Date Jan 2019
5652	Interconnectors	CIMB, Premium & Discount for IRCU and IEU not using QAO and QAB.	Planned Release Date Jan 2019
5646	Autoproducers	Traded positions of TU units are not being considered for difference payments and charges.	Planned Release Date Jan 2019

Known Issues: SEMO Settlements (4/5)

ID	Name	Description	Status Resolution / Date
5772	Capacity Charges/Payments	CCC, CCP and CSOCDIFFP settlement for NI units not applying the Annual Capacity Exchange rate as per G.1.3.5 & G.1.3.6. Balancing market FX rate incorrect being applied.	In Analysis TBC
STTL.905	Currency adjustment charge defect	CCA is not being calculated for Supplier lite windfarms registered as suppliers. CCA should be calculated for all supply units (currently only being charged if QMLF < 0)	In Analysis TBC
5779	CFC Issues	Incorrect application of Complex/Simple COD in BOA calculation	Closed Software update from vendor 06 Dec 2018
5785	RTQBOA: PBOA COD	Intermittent switching PBOA from Simple to Complex COD	In Analysis TBC

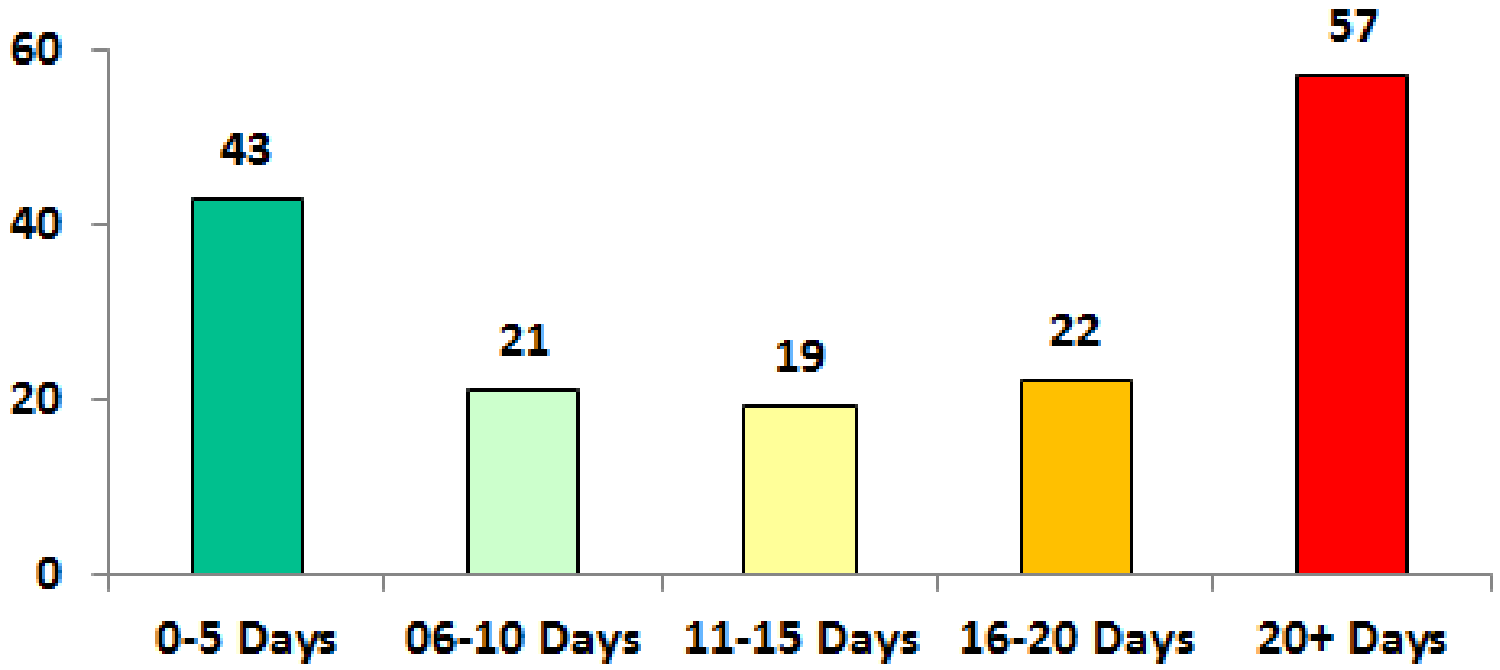
Known Issues: SEMO Settlements (5/5)

ID	Name	Description	Status Resolution / Date
103722	CFC not available in Settlement artefacts	Due to internal datatransfer issues, the CFC costs are not available in the settlement artefacts	Planned Release Date Jan 2019
5799	Incorrect CFC and Premium Payments	Caused by incorrect QBOA calcualtion in particular circumstances	Planned Release Date Jan 2019
5743	CRM Sttl, W/in Day Difference Charges	CRM Within Day Difference Charges will not make use of a BOA where there is both a QAO and a QAB.	Planned Release Date Jan 2019
5804	No Load Cost calculation in CFC	Recoverable No Load Costs in CFC double what they should be	Planned Release Date Jan 2019

Agenda

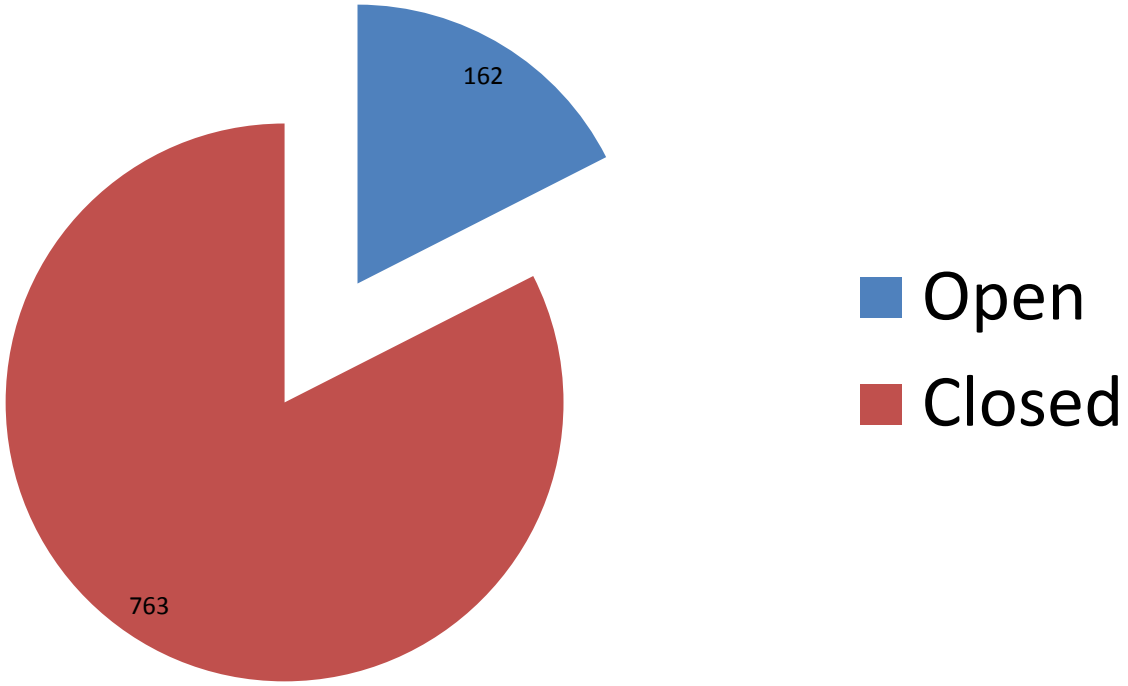
Item	Presenter
Welcome	**Anne Fitzgerald**
High Level Market Overview	Brendan O'Sullivan
Ex-Ante Market	Liam McAllister
Balancing Market	Aodhagan Downey, Sam Matthews
Disputes & Repricing Update	Dermot Campfield, Brendan O'Sullivan
Settlements & Cashflow Analysis	Sean O'Rourke, John O'Dea
Known Issues Report Update	Severin Garanzuay
Query Management	**Claire Breslin**
Q&A	

General Query Status – From Oct 2018



Total Received - 946

General Query Status – From Oct 2018



14% Decrease on open queries

Formal Queries and Disputes

Disputes:

In progress: 3

Escalated to the DRB: 5

Completed: 34

In total all received: **38**

Formal Settlement Queries:

Completed: 55

In progress: 12

In total : **67**

Registration Systems Freeze

Please note that there will be no Registration Effective Dates scheduled between the 20th of December and the 2nd of January.

Any Participants with pending Registrations will be notified.

SEMO Helpdesk Availability

- The SEM market helpdesk will be unavailable from 17:00 24th of December 2018 until 09:00 2nd of January 2019. This includes the non urgent phonelines.

Limited Communication Failure

As a reminder, the SEMO LCF Hotline is available 24/7 365 days a year for any emergency operational issues relating to Limited Communication Failures.

- **Phone:** +353 123 70744
- **Email:** LCF@sem-o.com

Helpdesk Availability

SEMOpx **remain available 24/7** for Urgent Operational Issues relating to the DAM/IDM, including ETS/M7 Availability, Connectivity issues, Password Resets etc.

1. Urgent Auction operational issues:	24 hr	marketops@ops.semopx.com	Republic of Ireland: 1800 283 010 Northern Ireland: 0800 008 3010 International: +353 1 668 8183
2. Urgent Continuous operational issues:	24 hr	marketops@ops.semopx.com	

Non-urgent operational queries can be submitted between close of business *24th December up to 1st January 2019* but will be addressed from **2nd January 2019** (General queries include publication of SEMOpx website reports)

3. General queries:	info@semopx.com

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Welcome	Anne Fitzgerald
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Close

- SEMO Website: http://www.sem-o.com/
- Semopx Website: http://www.semopx.com/
- Queries: Info@sem-o.com; Info@semopx.com

Thank you for your attendance.