

Market Operator User Group

Dublin, 11 June 2020

Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Central Market Systems - Release F

- The table below outlines the scope for Release F to the Central Market Systems, all are approved Modification Proposals.
- In addition a number of fixes for the Balancing Market and Settlement systems will also be included in scope.

Central Market System Release F			
#	CR Ref	Mod Ref	Description
1	CR120	Mod_10_19	Exclusion of Dispatchable Priority Dispatch Unit Prices from Pricing
2	CR091	Mod_19_19	Setting System Operator Flags to zero for the purposes of Settlement
3	CR092	Mod_21_19	Application of Loss Factors for Interconnectors in Settlement
4	CR128	Mod_17_19	Mod_17_19 DSU State Aid Compliance Interim Approach

- Release F is expected to be deployed in October 2020 (date TBC), subject to successful completion of all testing.

Central Market Systems - Release G

- The table below outlines current scope for Release G to the Central Market Systems.

Central Market Systems Release G			
#	CR Ref	Mod Ref	Description
1	CR-158	N/A	Repricing and relationship with Instruction Profiling

- A number of other changes are currently being impact assessed by our vendors. Any further additions to scope will be communicated at upcoming Market Operator User Groups.
- Release G is expected to be deployed in April 2021 (date TBC), subject to successful completion of all testing.

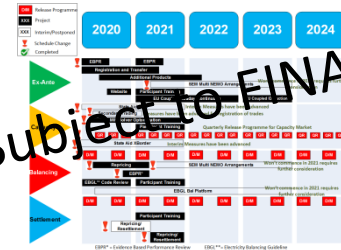
Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Latest Version of Roadmap

- Key element of Strategy
- Market Participant Facing
- Organised by Market

DRAFT – Subject to FINAL Approval



“Stabilize the market systems and to improve the service offering through a small number of discrete projects”



How can you input?

Consultation runs to July 31st

Feedback should be sent via email to info@sem-o.com using the subject “Market Development Roadmap” before **31st of July 2020** for consideration in advance of the next Roadmap which will be published at the end of 2020.



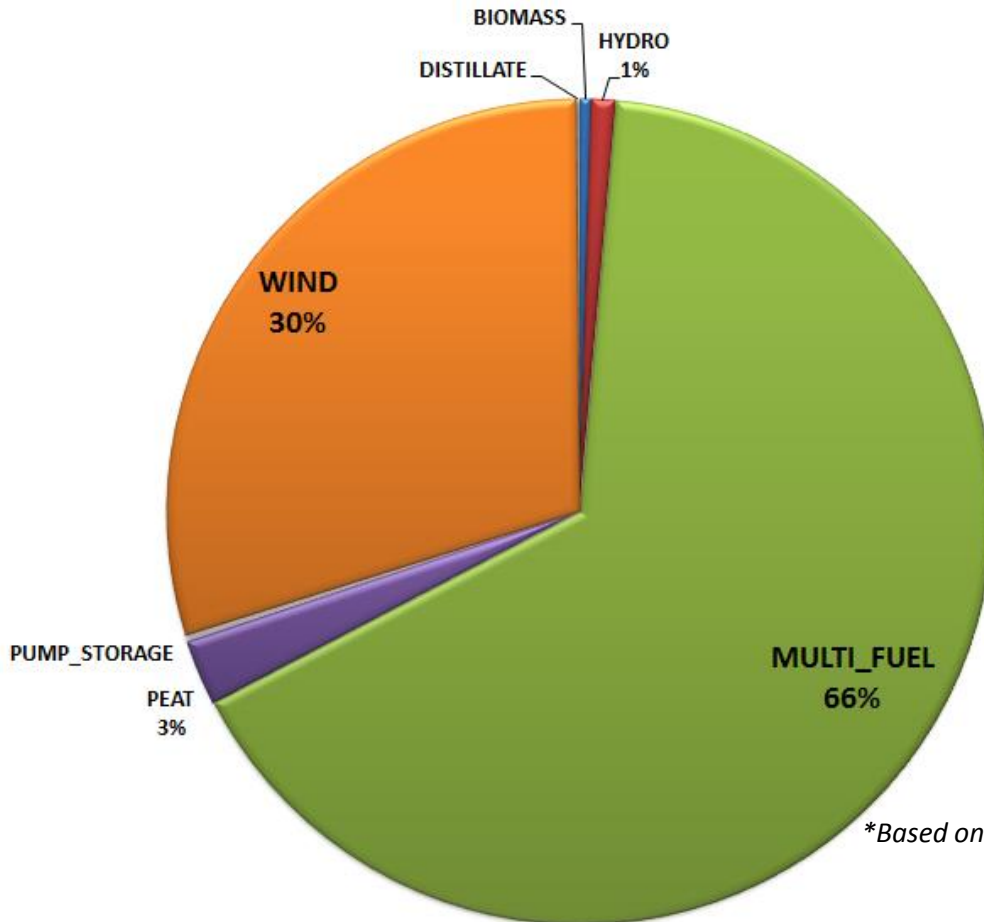
Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Ex-Ante Markets

- Volumes and Fuel Mix Apr-May 2020

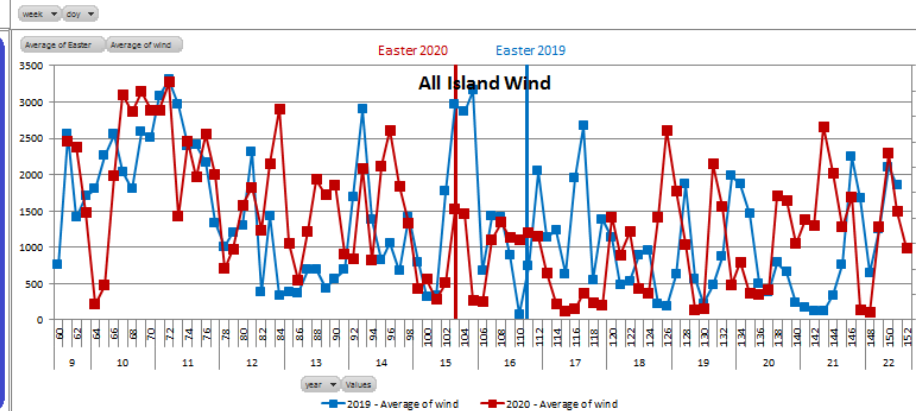
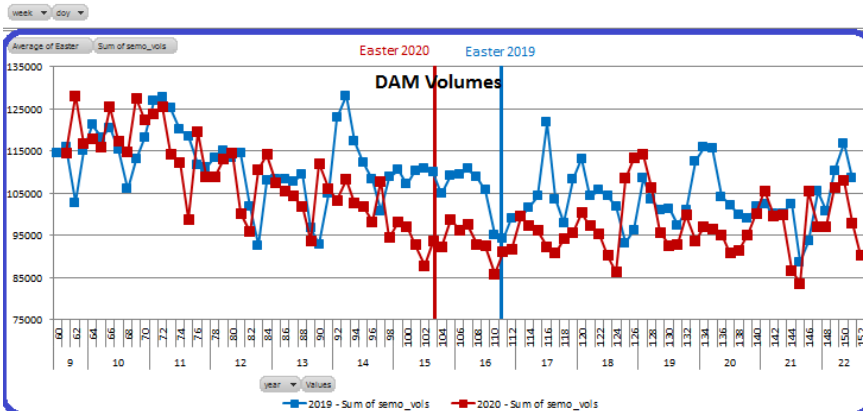
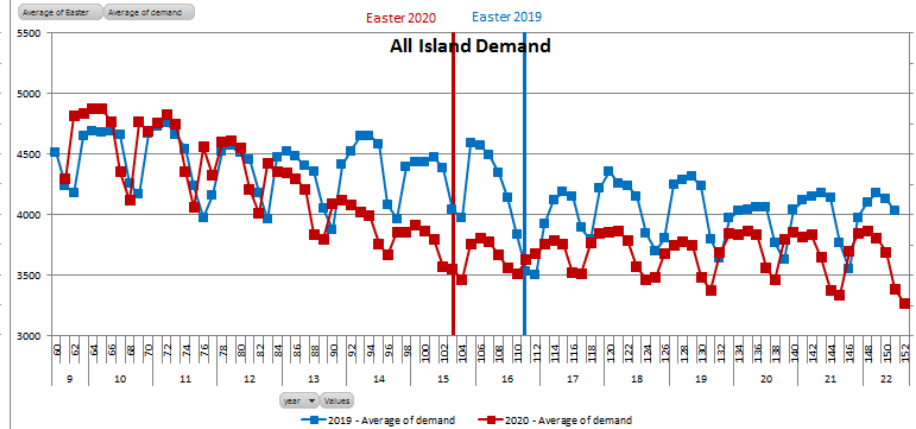
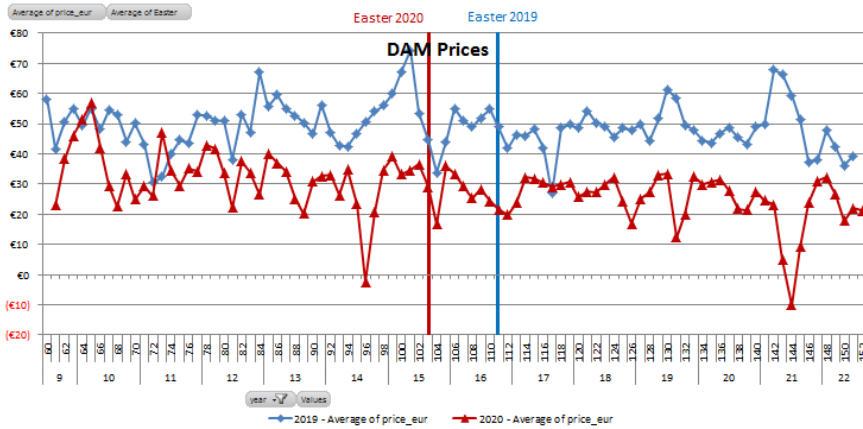
**Using approx. prices and fuel type breakdowns*



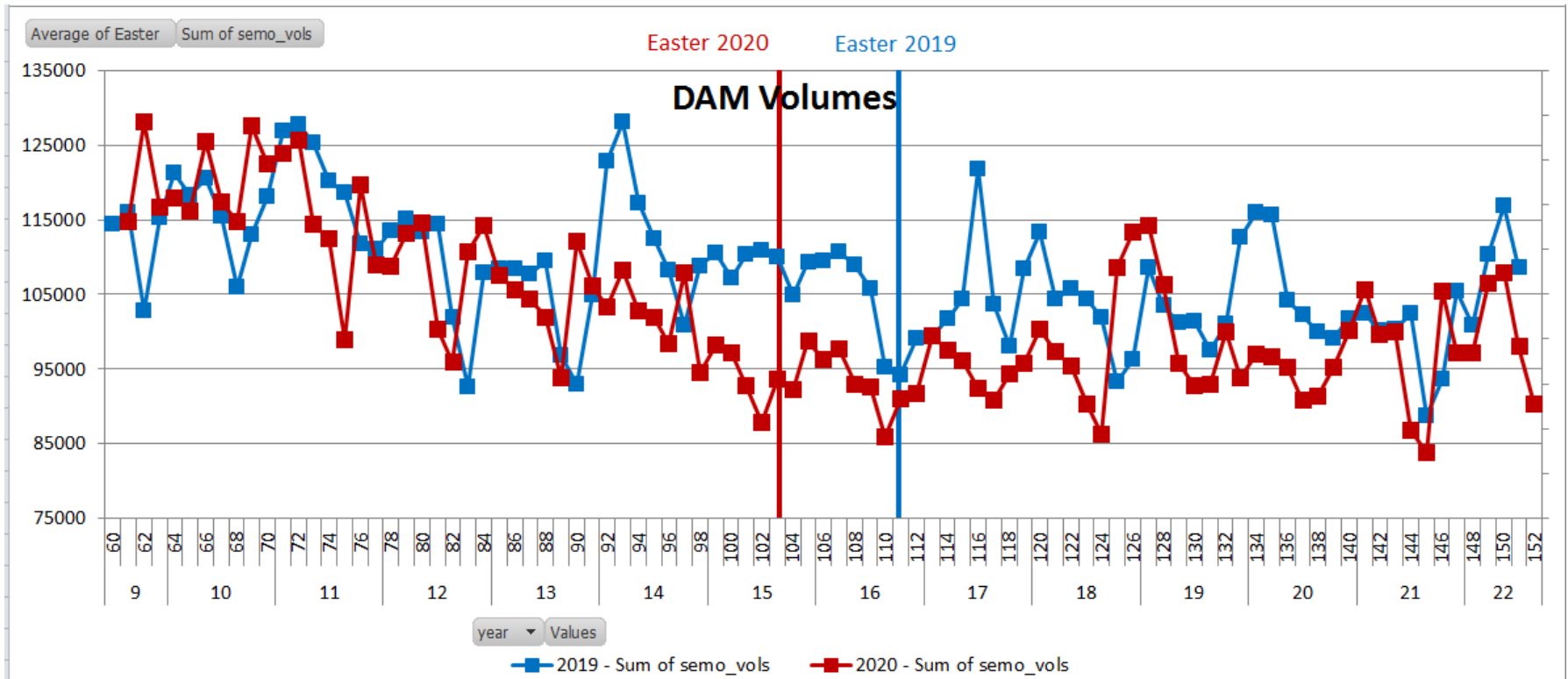
**Based on Generator DAM sell's by Fuel Type*

	Value	% of DAM
DAM	€155,905,442	
IDA1	€17,523,480	11.24%
IDA2	€7,638,200	4.90%
IDA3	€2,682,701	1.72%
IDC	€470,450	0.30%

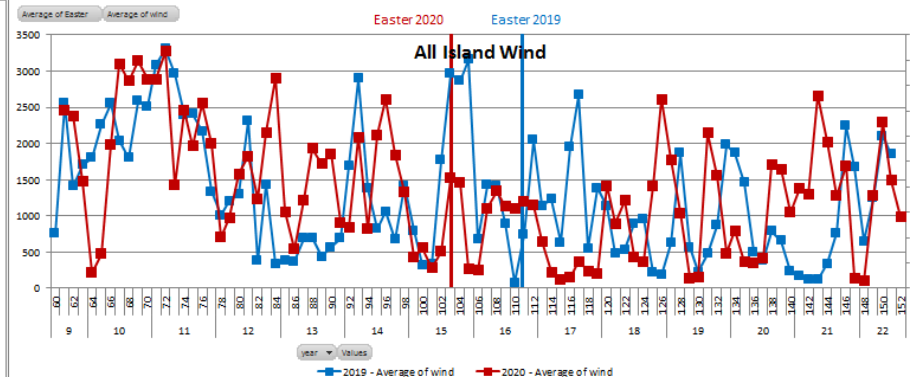
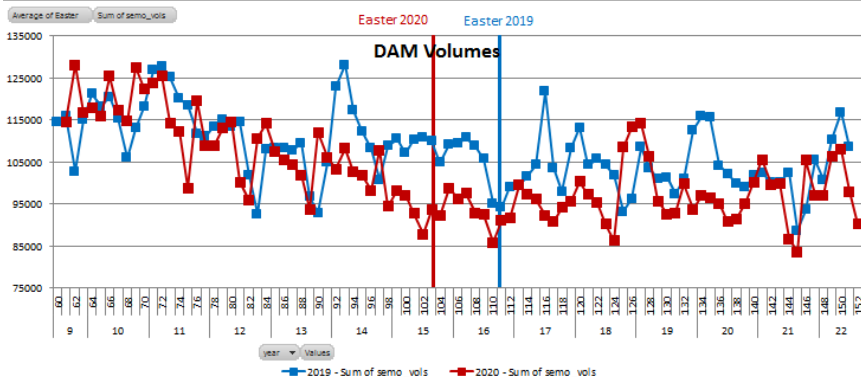
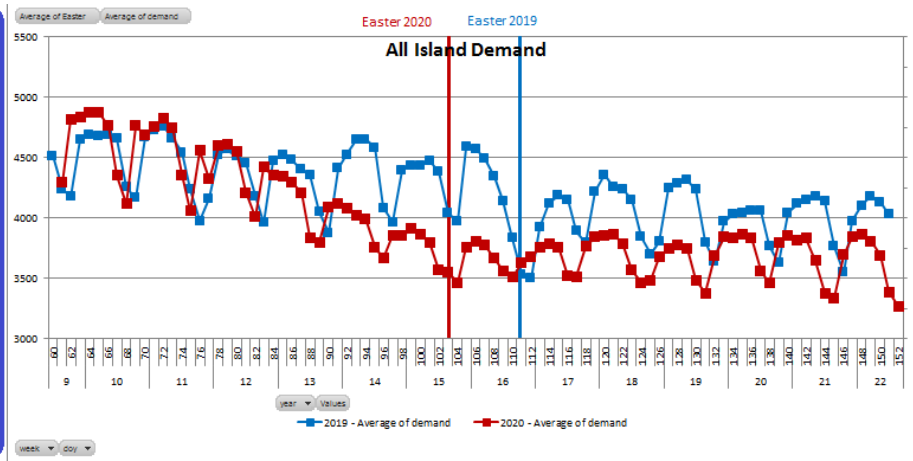
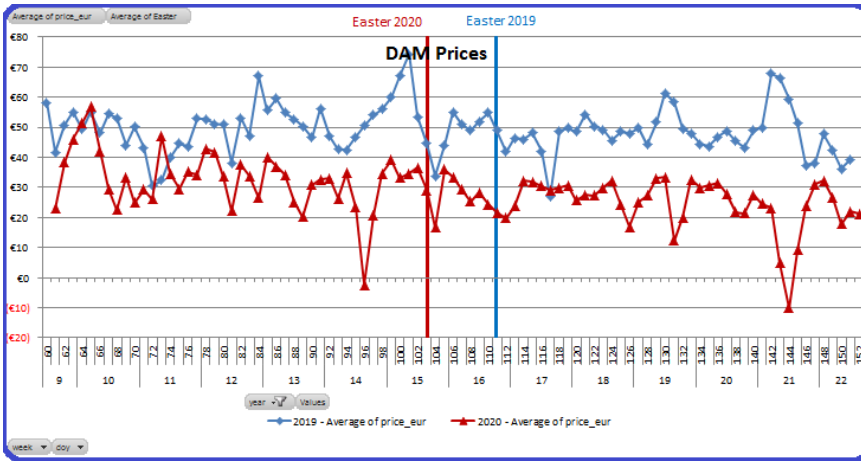
Ex-Ante Markets Reaction to COVID-19



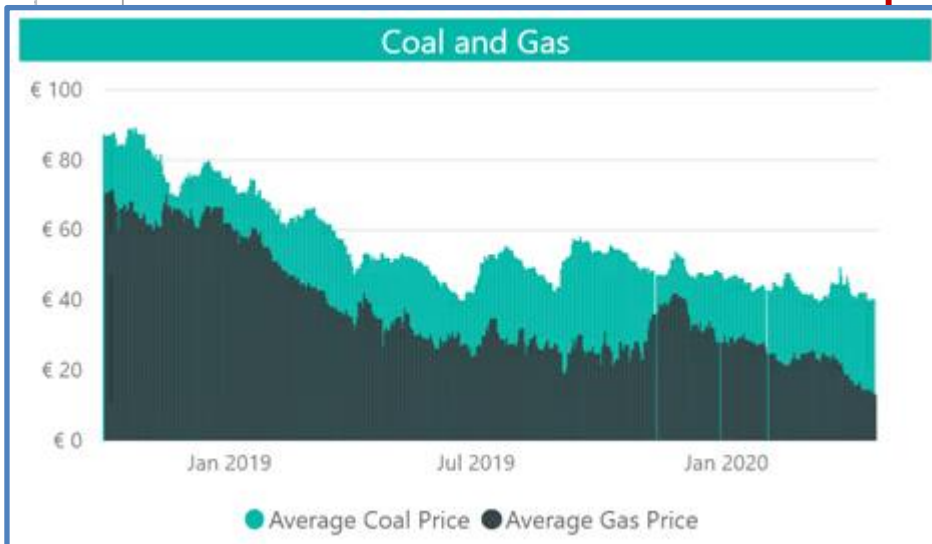
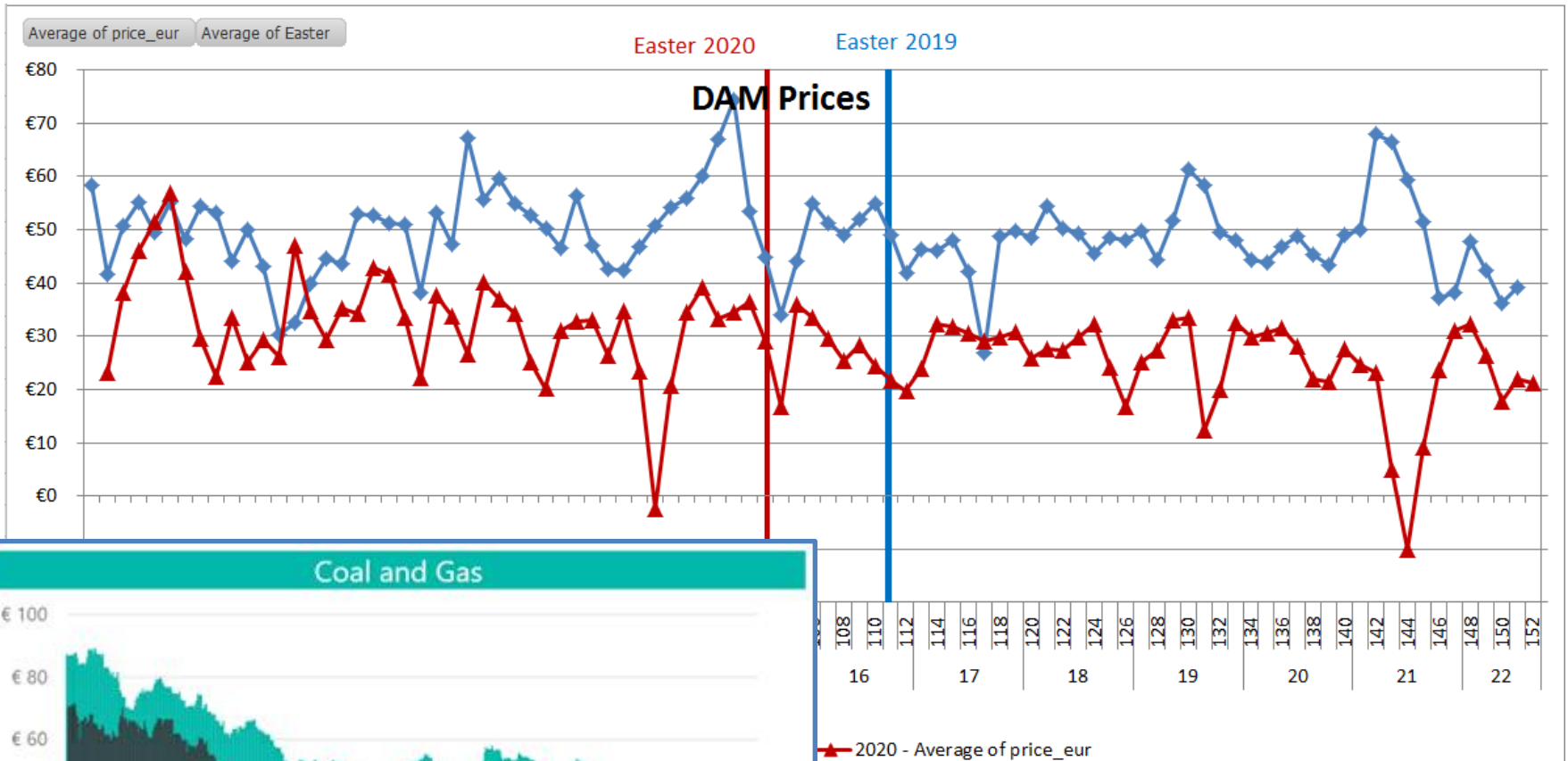
Ex-Ante Volume, Demand, Wind, Prices 2020 versus 2019



Ex-Ante Volume, Demand, Wind, Prices 2020 versus 2019



Ex-Ante Volume, Demand, Wind, Prices 2020 versus 2019



Ex-Ante - Saturday 23rd May



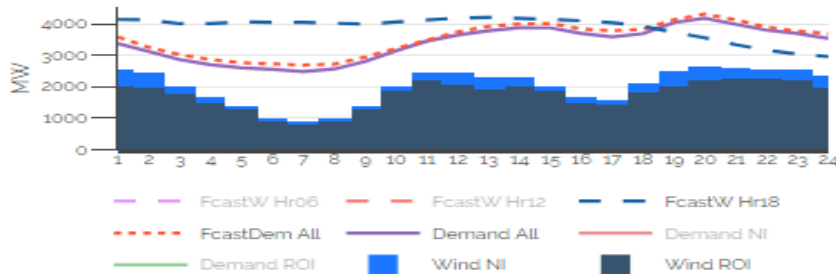
[Full View](#)

Ex-Ante Day Ahead & Intra-day Market Analysis

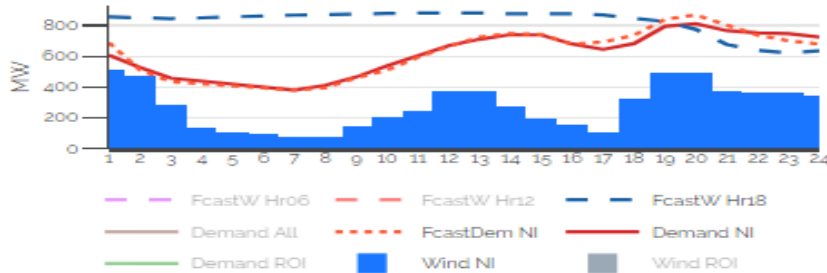
Auction Summary

2020-05-23 ▾

Forecast, Actual Wind v Demand - All Island



Forecast, Actual Wind v Demand - N.I.

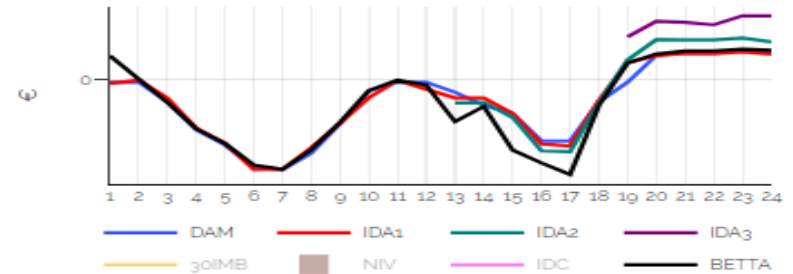


original energy Market Operator

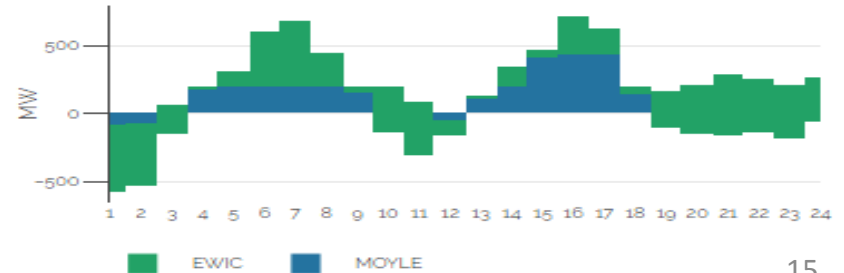
Auction Stats [Hi | Lo | Avg | MWh | €]

2020-05-23	DAM	€13.56	€-41.09	€-10.09	86,806	€-876,201
2020-05-23	IDA1	€13.73	€-41.97	€-9.95	16,430	€-163,494
2020-05-23	IDA2	€19.22	€-32.93	€-1.04	4,247	€-4,432
2020-05-23	IDA3	€31.00	€18.65	€26.27	1,156	€30,361

Auction Pricing



Interconnector Flows

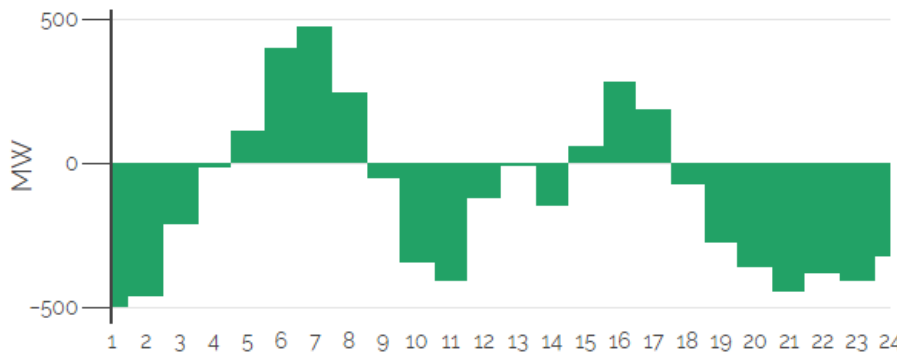


Ex-Ante - Saturday 23rd May

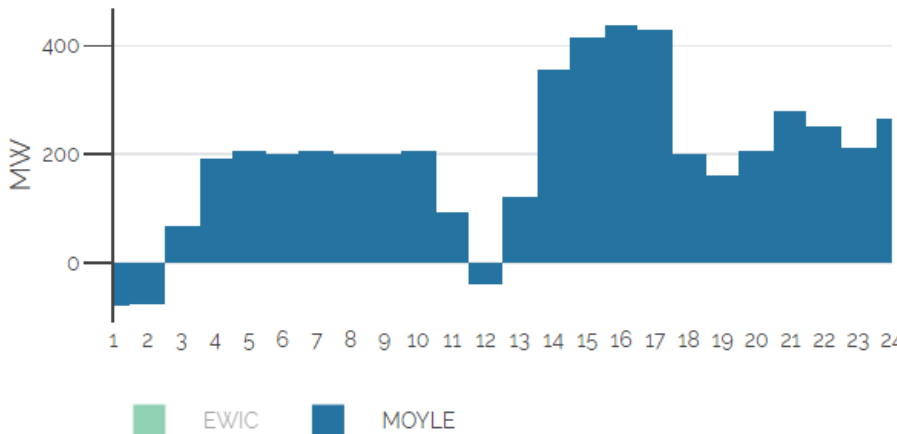


[Full View](#)

Interconnector Flows



Interconnector Flows

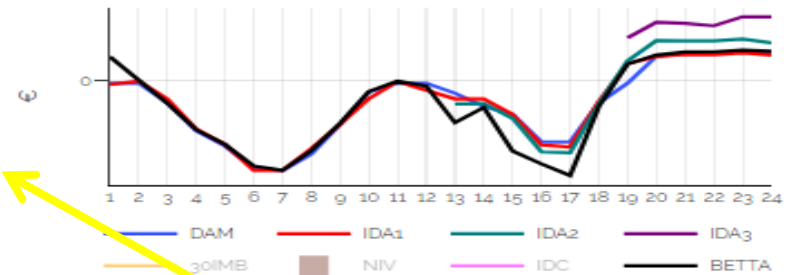


Market Analysis

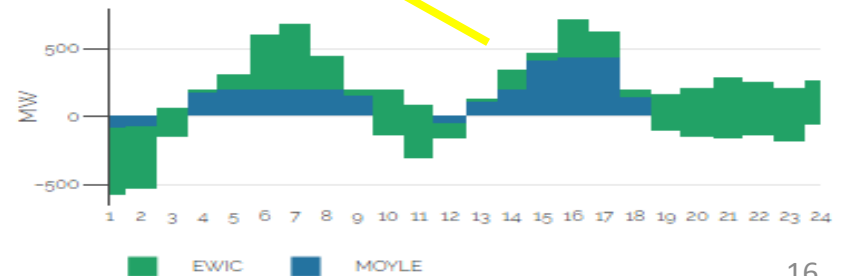
Auction Stats [Hi | Lo | Avg | MWh | €]

020-05-23	DAM	€13.56	€-41.09	€-10.09	86,806	€-876,201
020-05-23	IDA1	€13.73	€-41.97	€-9.95	16,430	€-163,494
020-05-23	IDA2	€19.22	€-32.93	€-1.04	4,247	€-4,432
020-05-23	IDA3	€31.00	€18.65	€26.27	1,156	€30,361

Auction Pricing



Interconnector Flows



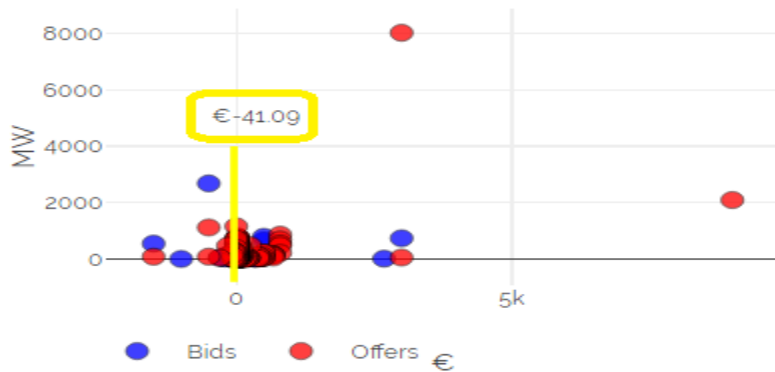
Choose Auction



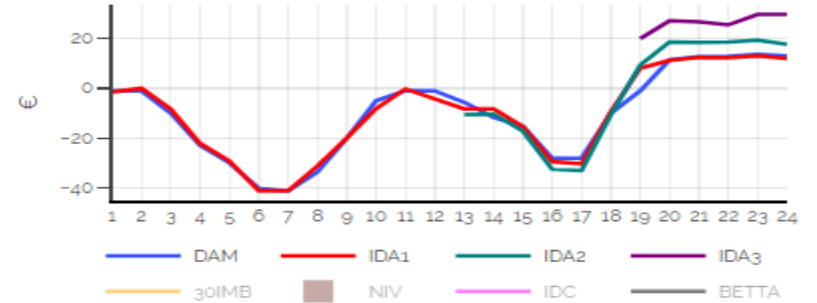
2020-05-23 ▾

HH1 ▾

Structure



Historical Prices



Auction Book

Bids	Price	Offers
	€-30.00	-220.50
	€-62.83	-19.40
	€-70.00	-60.00
	€-150.00	-435.50
	€-300.00	-54.20
	€-499.95	-69.00
	€-500.00	-492.40

Auction Participants

DeliveryDat	auctio	Participan	DeliveryHou	DeliveryInterva	unitid	ExecutedVo	fuel typ	EMS_
filter data...							eq "WIND"	
2020-05-23	DAM		7	1		-103	WIND	
2020-05-23	DAM		7	1		-61	WIND	
2020-05-23	DAM		7	1		-57.2	WIND	
2020-05-23	DAM		7	1		-45.5	WIND	17

Ex-Ante - Saturday 23rd May



[Full View](#)

Ex-Ante Day Ahead & Intra-day Market Analysis

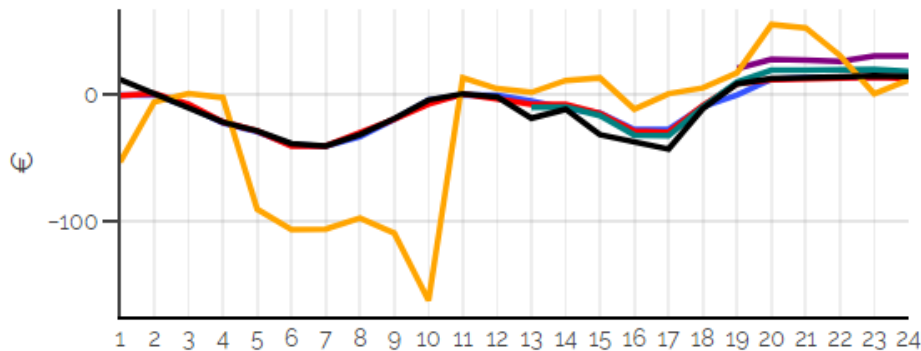
Auction Summary

2020-05-23 ▾

Auction Stats [Hi | Lo | Avg | MWh | €]

2020-05-23	DAM	€13.56	€-41.09	€-10.09	86,806	€-876,201
2020-05-23	IDA1	€13.73	€-41.97	€-9.95	16,430	€-163,494
2020-05-23	IDA2	€19.22	€-32.93	€-1.04	4,247	€-4,432
2020-05-23	IDA3	€31.00	€18.65	€26.27	1,156	€30,361

Auction Pricing

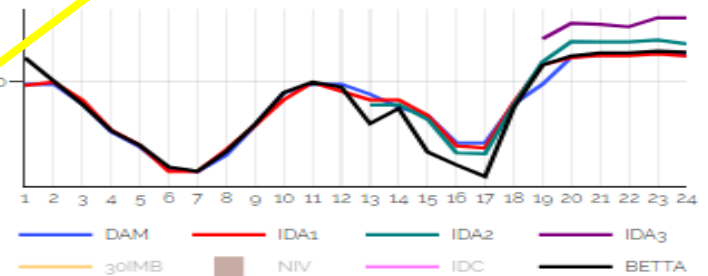


— DAM — IDA1 — IDA2 — IDA3
— 30IMB — NIV — IDC — BETTA

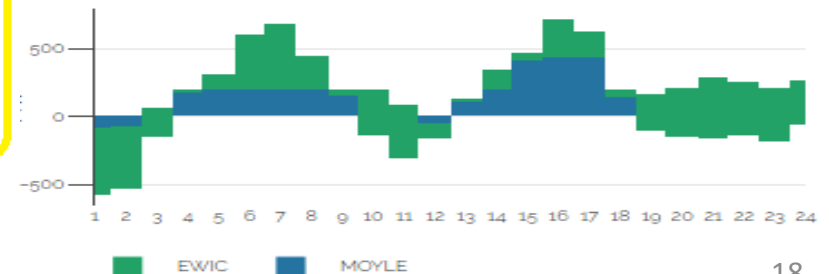
— FcastW Hr06 — FcastW Hr12 — FcastW Hr18
— Demand ALL - - - FcastDem NI — Demand NI
— Demand ROI ■ Wind NI ■ Wind ROI

original energy
Market Operator

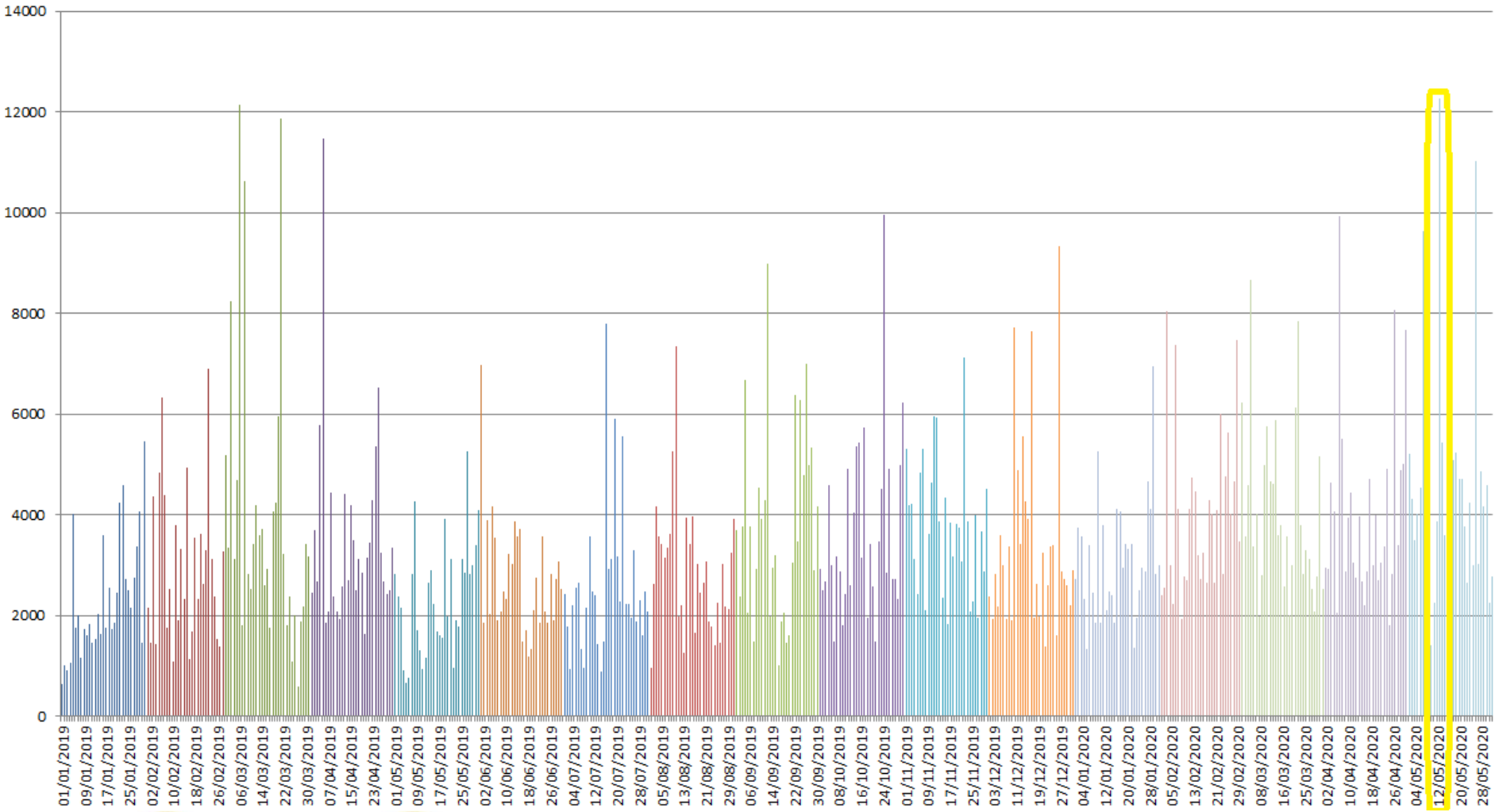
Auction Pricing



Interconnector Flows



Ex-Ante Record Volume High - IDA 2 - 12th May

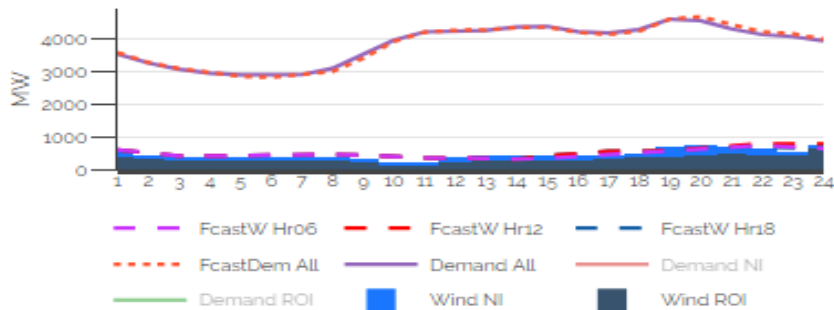


Ex-Ante Day Ahead & Intra-day Market Analysis

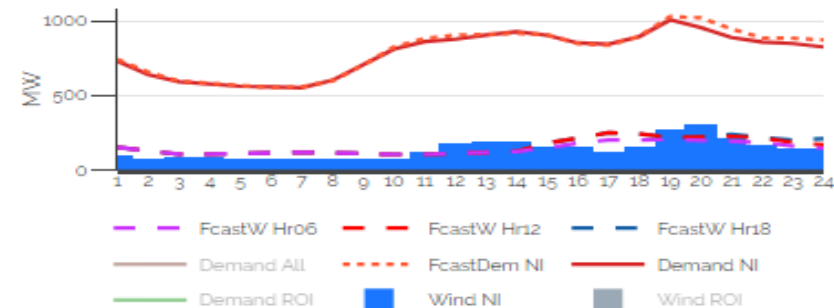
[Overview](#)
[Market Structure](#)
[Analysis](#)

Auction Summary

Forecast, Actual Wind v Demand - All Island



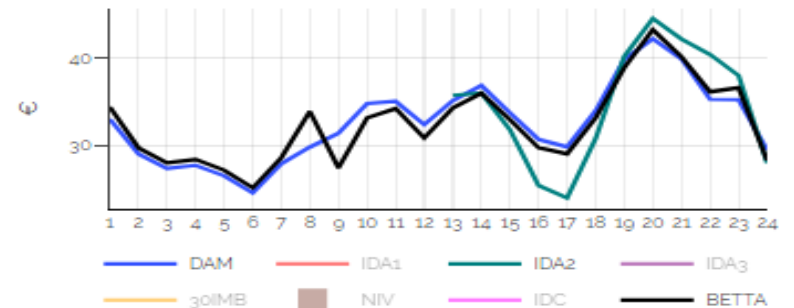
Forecast, Actual Wind v Demand - N.I.



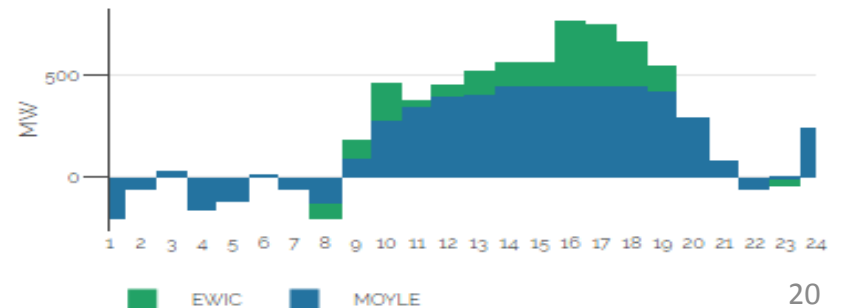
Auction Stats [Hi | Lo | Avg | MWh | €]

2020-05-12	DAM	€42.20	€24.67	€32.67	93,730	€3,052,832
2020-05-12	IDA1	€45.20	€22.00	€31.06	10,489	€325,815
2020-05-12	IDA2	€44.50	€23.99	€34.75	12,256	€425,845
2020-05-12	IDA3	€50.14	€26.84	€39.28	1,220	€47,923

Auction Pricing



Interconnector Flows



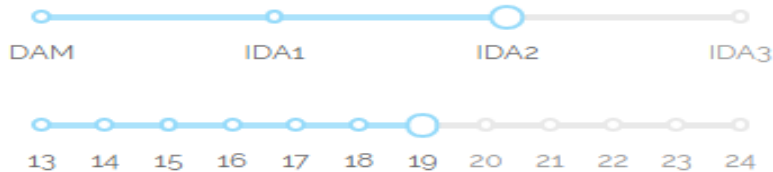
Ex-Ante Day Ahead & Intra-day Market Analysis

Overview

Market Structure

Analysis

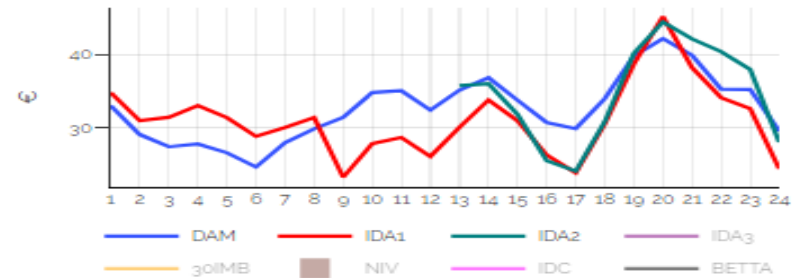
Choose Auction



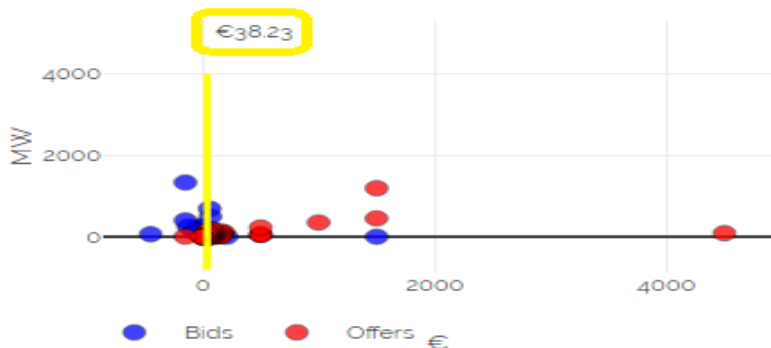
2020-05-12

HH1

Historical Prices



Structure



Auction Book

Bids	Price	Offers
189.00	€72.38	
495.40	€65.80	
689.40	€59.82	
383.00	€-150.00	

Auction Participants

Day	Auction	Participant	Delivery Hour	Delivery Interval	Unit ID	Executed Volume	Fuel Type	EMS Name	Area Description
-12	IDA2		19	1		383	MULTI_FUEL		Galway

Ex-Ante Market Analysis

- **In Summary**

- ✓ Simple Look Back Analysis located on SEMOpX website here :

- ✓ https://www.semopx.com/documents/general-publications/lookback_mkt.xlsx

ETS Releases

Version	Content	Client	Impact	Timeline
V3.4	<ul style="list-style-type: none"> Retrieve trading limits from API (New Request type on API) API - ETS Auction max cancellation time (New Request type on API) Changing the certificate handling in ETS (Enhancement on API) Change in the handling of the cypher suite admission (Internal enhancement for API connections TSL) Password reset (Members will be able to password reset themselves) 30' Complex orders 	New client	All members to download new client	30th June (Subject to Testing and Euphemia Simulations)
30 min Complex Orders Functionality	<ul style="list-style-type: none"> Dependancies on PMB 11 and EUPHEMIA 10.4 Implementation Once ETS 3.4 is stable after 30/06/2020 go-live new Simulation information will be provided New target date for Operational go-live is 11/08/2020 			

- Currently issues with Trading Limits API and Proxy connections for some members in SIMU2
- Additional Simulation date on 24/06/2020
- Communication of implementation plan and SIMU dates in coming weeks for 30min Complex Order

ETS Maintenance Windows

Date & time	Impact	Reason	Communication
09/06/2020	ETS not accessible	Monthly Maintenance	ETS chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
14/07/2020 15/07/2020	ETS not accessible	Monthly Maintenance	ETS chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
11/08/2020	ETS not accessible	Monthly Maintenance	ETS chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)

*Regular maintenance: Between 18:40 and 21:15 IST every 2nd Tuesday of the Month.

M7 Releases

Version	Content	Impact	Timeline
V6.9	Release notes / Impact to be sent.	<ul style="list-style-type: none"> WebStart Comtrader to be discontinued New order state 'UNKN' to identify un-synced orders <ul style="list-style-type: none"> No impact to ComTrader All API schema versions impacted ASIM available from mid May No impact to TC540 and TC810 Mandatory ComTrader 6.9 upgrade <ul style="list-style-type: none"> Available in prod 2 weeks prior to M7 release 	15 July 2020
V6.10	Release notes / Impact to be sent.	<ul style="list-style-type: none"> No information yet. 	September 2020

M7 Maintenance Windows

Date & time	Impact	Reason	Communication
09/06/2020	Expected to be: 19:40 to 00:00 CEST	DBAG, ECC & EPEX	M7 chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
14/07/2020 15/07/2020	TBC 19:00-00:00CEST	Go-live M7 6.9	M7 chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
11/08/2020	TBC	DBAG, ECC & EPEX	M7 chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)

*Regular maintenance: Between 18:40 and 21:15 IST every 2nd Tuesday of the Month.

Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Repricing Update

At the previous MOUG we reported on two Repricing options in terms of a) and enduring end to end solution and b) an interim “workaround” which was proposed to support the re-pricing of a limited number of days. The latest updates to both is as follows:

Enduring “End to End” Solution (CR-158)

- Based on detailed impact assessment from our vendors, and in the context of their current capacity, it is envisaged that this would be delivered to Production in Release G – April 2021.
- Expectation is this will delivered to SEMO for testing in approx 4 to 5 months.
- Solution is scalable, repeatable and readily supportable from an operational perspective.

Interim Workaround

- We continue to progress the **Interim Workaround**; as highlighted at the last meeting this is a complex process which, in the absence of an automated solution, involves some highly manual sub-processes and verification checks.
- Due to the complexity of the data, processes etc this workaround remains to be fully verified.
- It is expected that this workaround would only be used for a small subset of the 90 Trading Days impacted by repricing in the period July to September 2019.
- In addition, the Enduring Solution (CR-158) will be required to correct the Tags/Flags for some of the impacted Trading Days.

Given the complexity, limited scalability and level of manual intervention (and therefore potential for error) of the Interim Workaround we have considered other approaches to minimise impact to our Participants and to provide a repeatable and scalable solution.

Repricing Update – Alternative Approach

Outline Approach:

“Separate the settlement of updated prices from the settlement of the updated NIV Tags and SO Flags” (application of Simple/Complex COD in Settlement), meaning:

1. Repricing can be initiated; resulting in the publication of updated Imbalance Settlement Prices and Tags/Flags;
2. Timetabled Resettlement will capture and apply the newly calculated prices; but will settle based the ‘original’ Tags/Flags;
3. Ad hoc Resettlement, post April 2021, would be scheduled to resettle only those participants impacted by NIV Tag and SO Flag changes. For all other Participants ***‘repricing related resettlement’*** will not change post the planned timetabled resettlement.

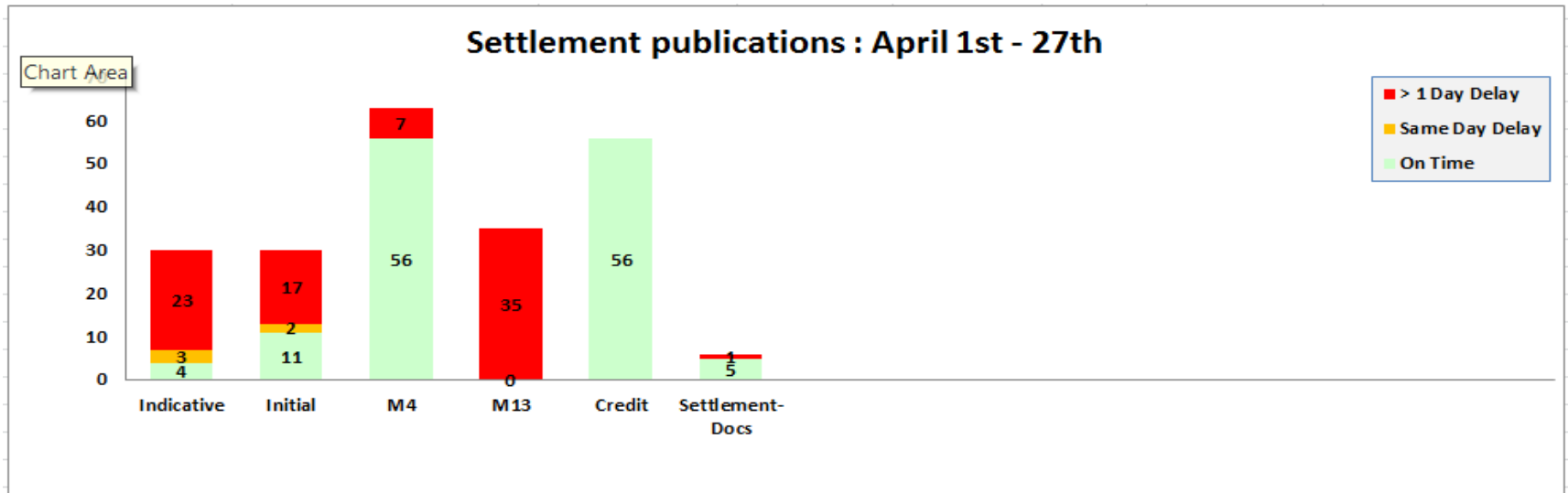
Approach Benefits

- ✓ Corrects all prices and allows majority of units to finalise their books from a repricing perspective via timetabled resettlement.
- ✓ It avoids deferring repricing until such time that prices and Tags/Flags can be captured in the same settlement cycle, possibly extending financial exposure into late 2021.
- ✓ It will use current functionality within the systems and will be fully backward compatible with the Enduring Solution when delivered to Production in Release G.
- ✓ Proposed approach is scalable in terms of number of re-pricing days, repeatable, auditable and can be readily supported by Operations.
- ✗ **Cons:** Published Tags/Flags will be different to those used in timetabled resettlement; which may impact participant’s ability to correctly shadow settle prior to the final Ad hoc Resettlement.

Agenda

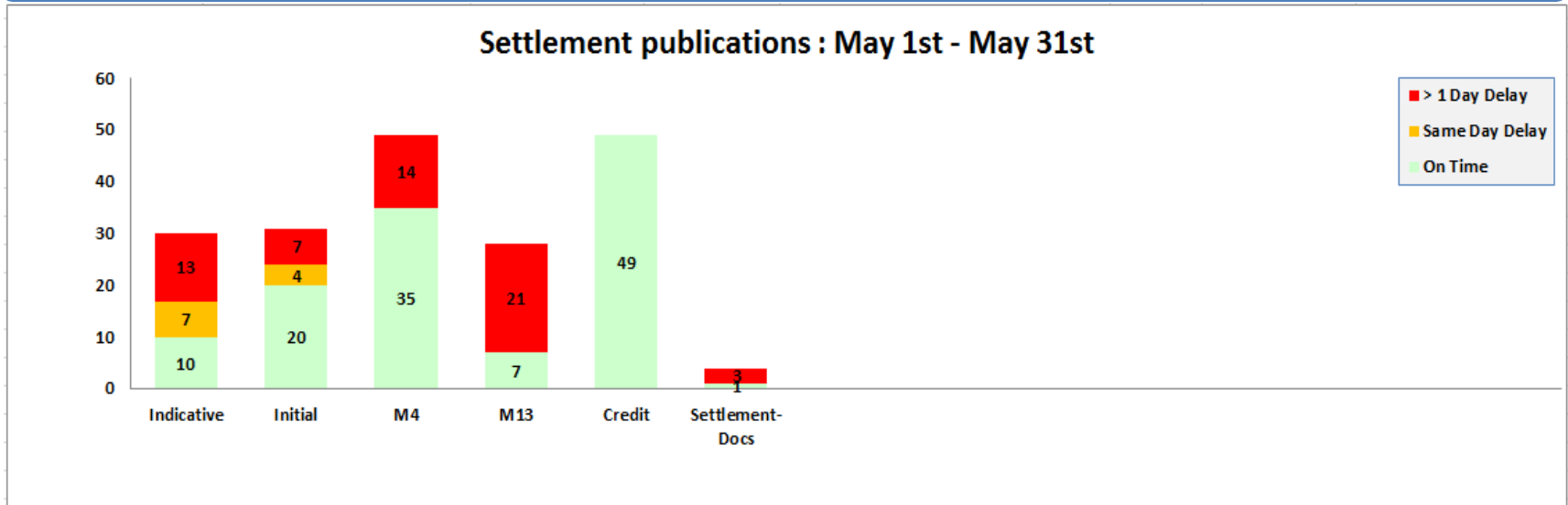
Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Settlement publications & timelines : April 2020 to date



- **M13 resettlement** : No M13 published in April 2020 due to **KIR ID 163430** “M13 ACTA data (Actual availability data)”. Issue resolved for SONI MDP on April 15th after database fix applied.
- **M+4 resettlement** : Single week published April 20th , to prioritise Initial backlog for SDs due.
- **Indicative & Initial publication delays** : Publication delays mainly due to (**KIR ID 162950** “MMS (Market Management Systems) application issues” for settlements data to timelines. All issues now resolved.
- **Settlement Documents**: Publication delay on April 14th due to (**KIR ID 162950** “MMS (Market Management Systems) application issues” for settlements data to timelines. Published April 17th .

Settlement publications & timelines : May 2020



- **M13 resettlement** : One week of M13 published in May 2020 due to follow on issues with ACTA data, Instruction profiler timeslots prioritised for initial settlement processing, additional analysis required and priority by vendor to operational IP issues.
- **M+4 resettlement** : Single weeks published 3 of the 4 SD weeks, to prioritise Initial backlog for SDs due. Instruction profiler timeslots prioritised for initial settlement processing.
- **Indicative & Initial publication delays** : Publication delays mainly due to ([KIR ID 162950](#) “MMS (Market Management Systems) application issues”, and [KIR ID 164630](#) MMS (Market Management Systems) performance issue. All issues are now resolved.
- **Settlement Documents**: See next slide for full details...

Settlement publications & timelines : Settlement Documents

SD Month	SD Due Date	Issue	SD business days delayed	Additional publication timeline impacts	Issue resolution status
Apr-20	14/04/2020	MMS application - Short Day / look back issue	3 Days	Backlog of 10/15 Indicative & Intial settlement runs Delay to M4 double resettlement weeks Delay to M13 weekly schedule Payments In/Out had to be adjusted for PTs	
May-20	01/05/2020	MMS application - Short Day / look back issue re-introduced as software hotfix was not included in the build for Release E meaning the issue recurred post-deployment.	2 Days	Backlog of 8 Indicative & Intial settlement runs Delay to M4 double resettlement weeks Delay to M13 weekly schedule Payments In/Out had to be adjusted for PTs	Software hot fix delivered to IT and tested by the business. KIR #162,950 Software hot fix resolved the issue.
May-20	15/05/2020	Instruction Profiler (IP) application - Performance issue with data not pushing across to CSB Settlement application	1 Day	Backlog of 10/15 Indicative & Intial settlement runs Delay to M4 double resettlement weeks Delay to M13 weekly schedule Payments In/Out had to be adjusted for PTs	Performance tuning (indexing) on the database needed to be applied. Indexing scripts delivered to IT and tested by the business KIR #164,630
May-20	22/05/2020	Vat registration for one PT, which impacted SD vat values for all PTs: As a result of an operator error issue, a "data script" had to be prepared by the vendor to resolve the error.	1 Day	Backlog of 5 Indicative & Intial settlement runs Payments In/Out had to be adjusted for PTs	Vat type manually corrected for the one PT, which then flowed into SDs. "Data script" also had to be prepared by the vendor to resolve the error.

Settlements & Credit Processing : Other updates

- **Fixed market operator cost statement/MO Invoice** : Fix now in production and due for publication on June 12th (May 2020 data)
- **Resettlement schedules**: Status update on the impacts of recent settlement issues to M13 and M4 catch-up timelines, and the impact to planned ad-hoc resettlement timelines.
- **Archived settlement reports** : Status update of reports retrieval up to Nov 18th 2018

Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

SO insights since the last MOUG: NTC Reductions

- 2nd event where Moyle NTC was reduced as an action of last resort
 - We do not plan to use Emergency Instructions
- SONI TSO reduced the Moyle import NTC (100MW for GB – SEM) over low load periods (overnight from 23:00 on June 7th till 06:00 Monday morning)
 - Driven by outages on the island and the delayed return of an NI generator
 - NI demand overnight is very low (<400MW)
 - 3 NI units online at all times
 - Results in insecure high flows on the Tie line between NI and IE.

SO insights since the last MOUG: TCG updates 1

- On the 22nd May, the TSO issued the following Operational Constraint revisions:
 - Updates to existing Operational Constraints
 - Moneypoint / Tynagh constraint (S_NBMIN_MP_NB)
 - Now only requires 1 unit when Ireland wind < 1,000MW.
 - Required to support the 400kV network voltage in low wind output
 - New outage related constraint (S_NBMIN_HNT_NB)
 - During the combination of maintenance and reinforcement outages in Dublin and the North East, 2 of the following 3 units are required on-load to support interconnector exports:
 - HNC
 - HN2
 - TYC
 - This constraint may evolve as outage combinations change

SO insights since the last MOUG: TCG updates 2

- New covid-19 related Operational Constraints
 - Must NOT Run TCGs are a novel type of outage
 - Required due to supply chain issues and to safeguard generation margins through managing remaining Equivalent Operating Hours for Autumn/Winter 2020/21
 - All depend on system security conditions at the time of implementation
 - S_NBMAX_EOH_B31 Limit: 0 Units from 1 (B31)
 - S_NBMAX_EOH_B32 Limit: 0 Units from 1 (B32)
 - S_NBMAX_EOH_DB1 Limit: 0 Units from 1 (DB1)
 - S_NBMAX_EOH_HN2 Limit: 0 Units from 1 (HN2)
- New system security related constraint
 - South West voltage constraint 2 (S_NBMIN_SWENB2)
 - Requires 1 unit when Ireland wind and demand are very low from:
 - AD2
 - WG1

Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Front Office Update

- Lessons learned from Release E

Legacy SEM Decommissioning

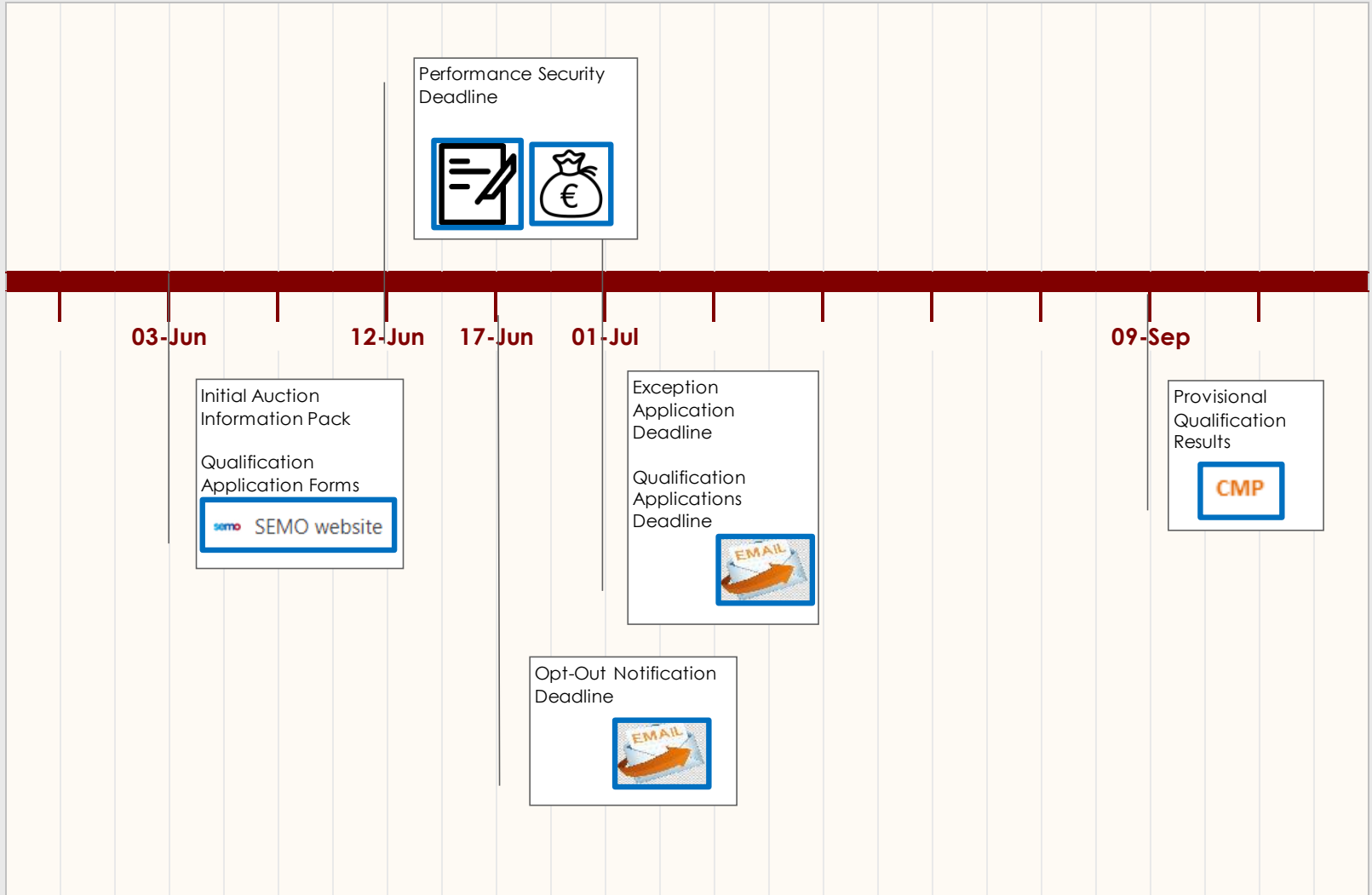
The Legacy SEM Decommissioning phase has commenced:

- Collateral Refunds or Transfer (if an Interim Transfer Facility in place) by end June
- Deeds of Release will then be issued
- Legacy SEM Data will remain available on the Legacy Website until late July 2020
- A subset of data will then be made available on the new website until late 2021
- Additional information can be found in the revised FAQ document [here](#)

Capacity Market

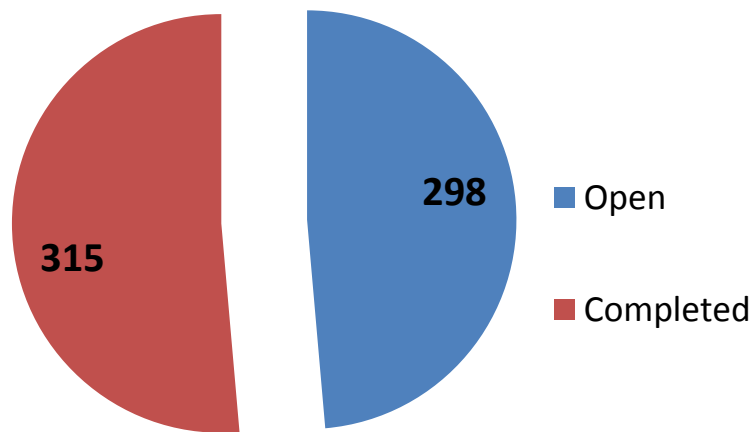
- 2023/2024 T-4 Capacity Auction
 - Auction Results are now published and available for download from SEMO website
 - In the last 6 months we have received 1 Qualification Dispute

T-4 23/24 Auction



T-4 24/25 Auction

General Queries Overview 29th April 2020 – 9th June 2020



- 298 < 7 Queries received*
- 315 > 127 queries closed*
- Queries closed within an average of 7 working days *

**Change from last MOUG update*

Formal Queries and Disputes-29th Apr– 9th June

Formal Settlement Queries:

Completed: 27

In progress: 17

Rejected: 0

Total: 44

Disputes:

Completed: 1

In progress: 0

Rejected: 0

Total: 1

Agenda

Item	Presenter
Welcome	Anne Fitzgerald
Release Program Update	Mark Needham
Market Development Roadmap	Mark Needham
Ex-Ante Markets	Liam McAllister, Michael Atcheson
Repricing Update	Michael Atcheson
Settlements Update	Sean O'Rourke
SO insights since the last MOUG	John Ging
Front Office Update	Anne Fitzgerald, Lynda Fitzpatrick, Aisling O'Donnell, Claire Breslin
Q&A	

Close

- SEMO Website: <http://www.sem-o.com/>
- Semopx Website: <http://www.semopx.com/>
- Queries: Info@sem-o.com; Info@semopx.com
- Capacity Market: CapacityMarket@sem-o.com

Thank you for your attendance.