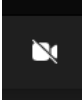
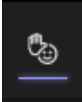



# Market Operator User Group

9<sup>th</sup> September 2021

# Housekeeping Rules

- Keep your video switched **off** 
- Raise your hand if you have a question 
- When asked to unmute your line 

*Thank you for your cooperation*

# Agenda

Item	Presenter
<b>Welcome</b>	<b>Anne Fitzgerald</b>
Release Program Update	Eamon Garrigan
Ex-Ante Markets	Nigel Thomson
Repricing Update	Dermot Campfield
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	Claire Breslin
Q&A	

# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	<b>Eamon Garrigan</b>
Ex-Ante Markets	Nigel Thomson
Repricing Update	Dermot Campfield
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	Claire Breslin
Q&A	

# Release H Program Update

Type	Release H Summary	Participant Effecting	Business Area	System
CR	CR-192: Submission of COD before effective date		Market Interface	MI
CR	CR-223: Technical Offer Data Submission		Market Interface	MI
CR	CR-247: Brexit VAT arrangements – ABB/MMS Settlement		Settlement	CSB
CR	CR-207: Correction of CR092: incorrect loss factors on QAB for interconnectors		Settlement	RTPIMB

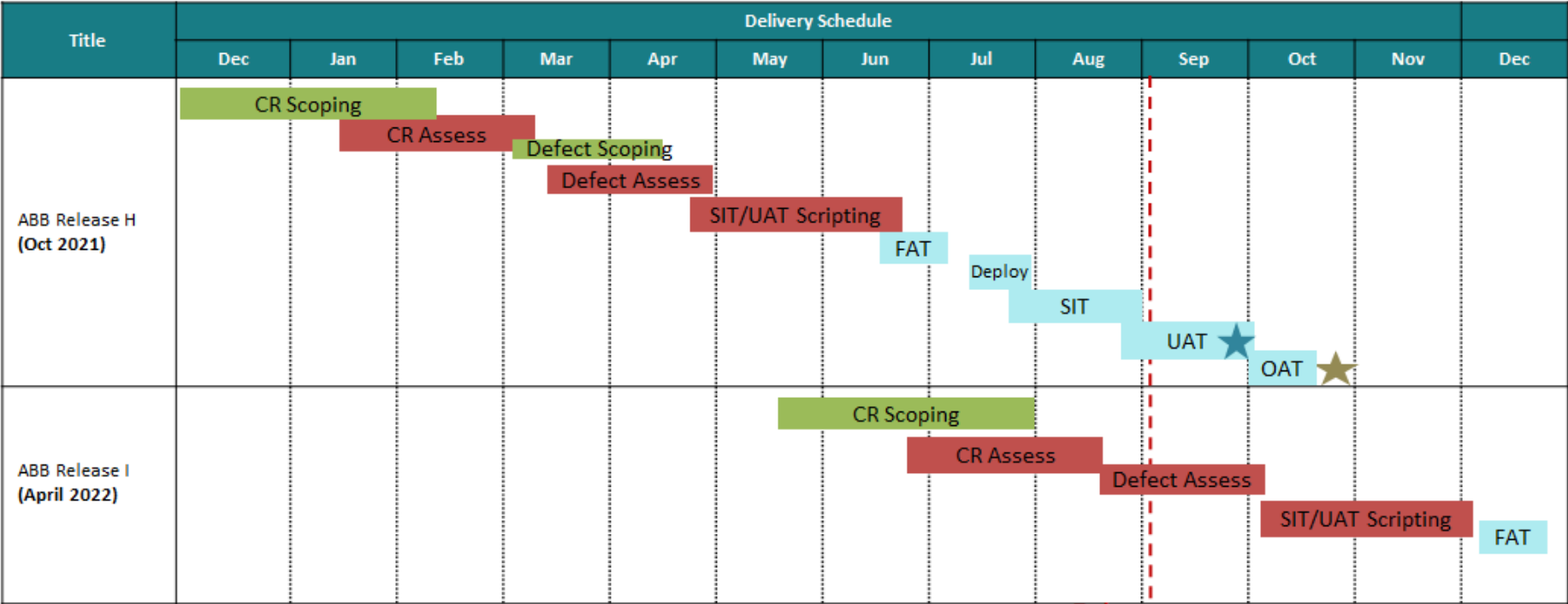


## Release H (Scheduled for Oct'21)

- 4 Participant effecting Change Requests
- 15 Defects ( final tbc)
- Items from Known Issues Report to be included ( updated closer to release)
- Release H High Level Impact Assessment published

# Priority Item Delivery Plan – MMS System Delivery 2021

This is an indicative plan highlighting key activities and anticipated timelines for MMS System Delivery in 2021

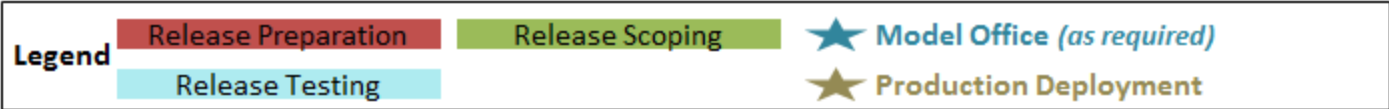
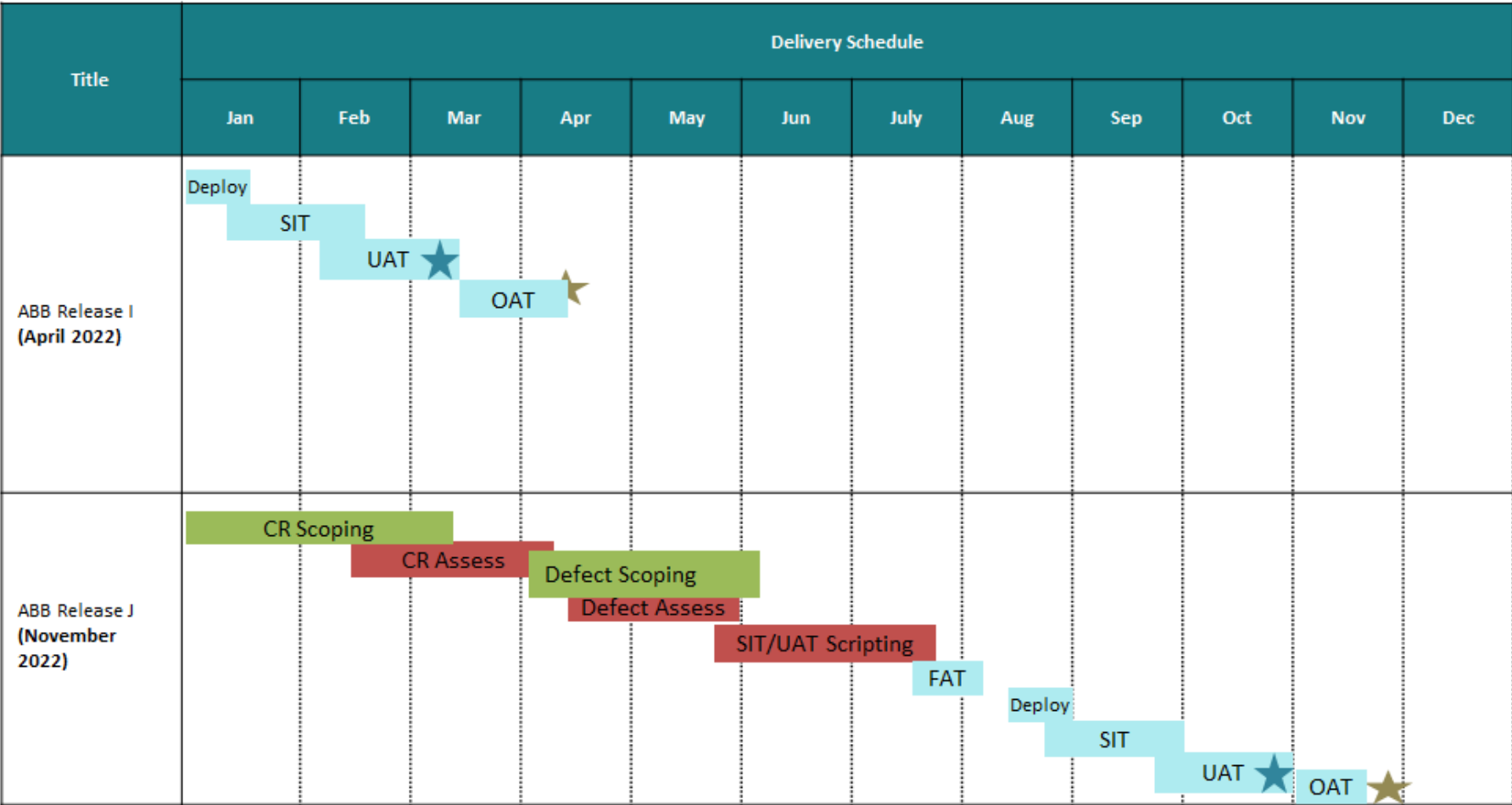


**Legend**

- Release Preparation
- Release Scoping
- Release Testing
- ★ Model Office (as required)
- ★ Production Deployment

# Priority Item Delivery Plan – MMS System Delivery 2022

This is an indicative plan highlighting key activities and anticipated timelines for MMS System Delivery in 2022



# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	Eamon Garrigan
Ex-Ante Markets	<b>Nigel Thomson</b>
Repricing Update	Dermot Campfield
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	Claire Breslin
Q&A	



# Increasing Prices Trend

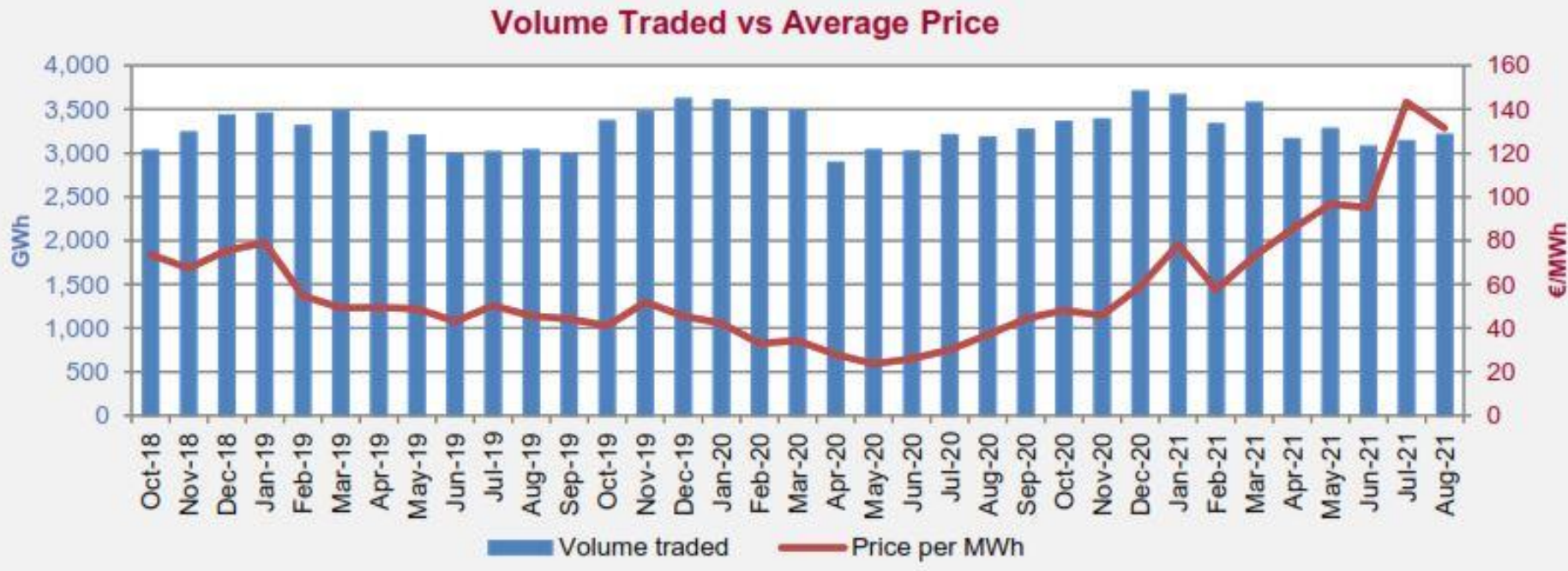
## Average Day-Ahead Market Prices

Region	2020	2021	Change
GB	€39.57	€94.72	139%
SEM	€37.59	€95.13	153%
Other EU	€22.04	€53.37	142%

## Observations

- Day-Ahead Prices across the GB, SEM and the rest of Europe have increased by a similar percentage between 2020 and 2021.
- Driven by factors such as fuel cost increases, plant availability, renewable generation output and increasing demand
- Good to keep this general trend of increasing prices in mind when looking at the following SEM trends.

# Day-Ahead Auction – Volumes and Prices



## Observations

- Volumes traded in the DAM post-Brexit continue to be similar to volumes pre-Brexit taking account of seasonality.
- The DAM average prices have increased significantly in 2021.
  - This can be attributed to the combination of increasing fuel costs, plant outages, limited wind generation and high demand in the SEM.

# Intraday Auctions – Volumes and Prices

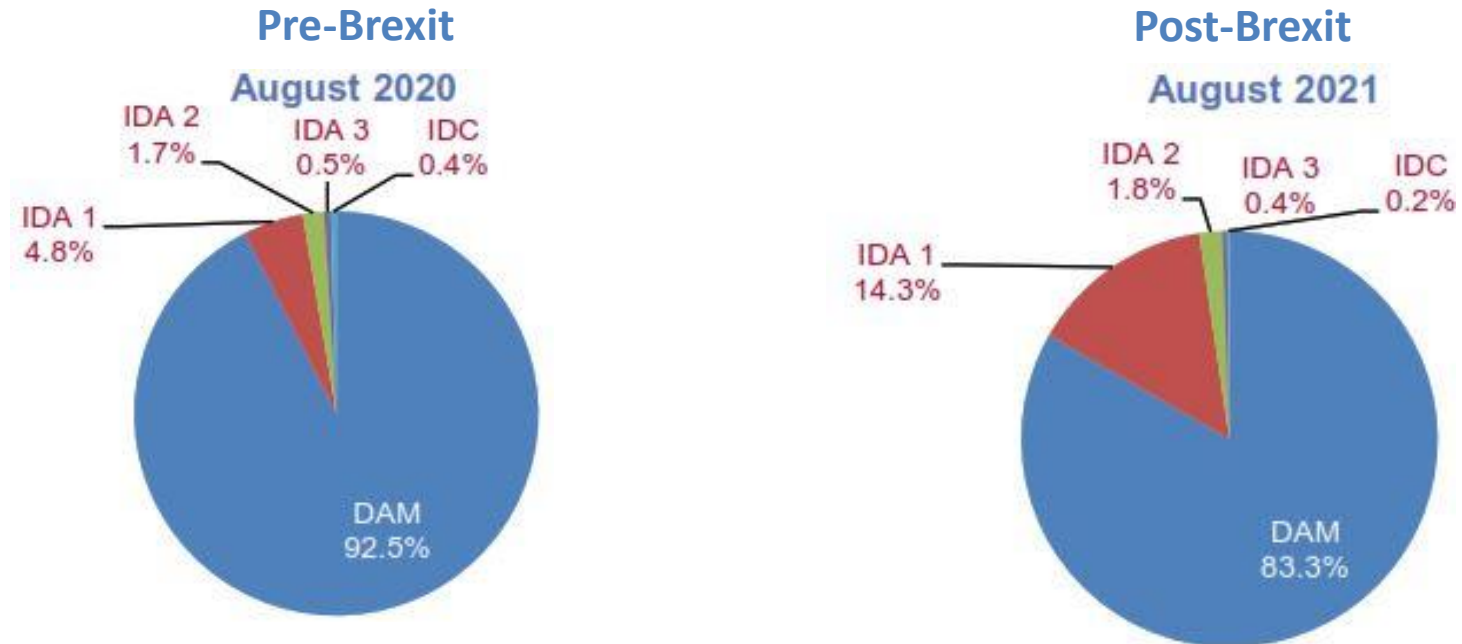
Volume Traded vs Average Price



## Observations

- Volumes traded in the IDAs post-Brexit are 2-3x higher than pre-Brexit averages due primarily to the additional interconnector capacity being made available in the IDAs as a result of the DAM now being a local only auction.
- The IDA average prices have increased significantly in 2021.
  - This is in line with DAM average prices, and can be attributed to the same market fundamentals impacting on DAM prices.

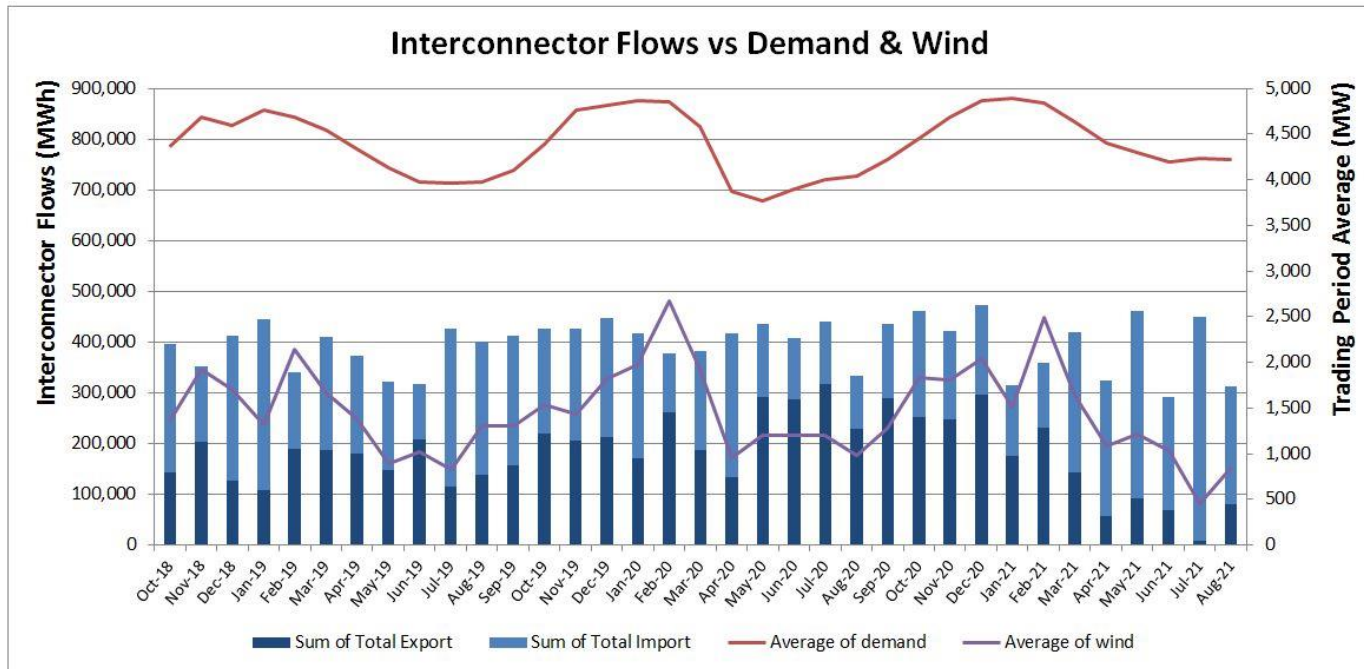
# Share of Trade Volumes by Auction (%)



## Observations

- August figures above show a typical change in monthly share of traded volumes by auction between Pre-Brexit and Post-Brexit.
- Post-Brexit the DAM continues to dominate the trading volumes although the percentage share of trade by auction has decreased for DAM and increased for IDA1. This is due to the DAM now being local only auction and all the interconnector capacity now being made available for the first time in the IDA1.
- Volumes in the IDA2, IDA3 and IDC markets remain similar to pre-Brexit levels.

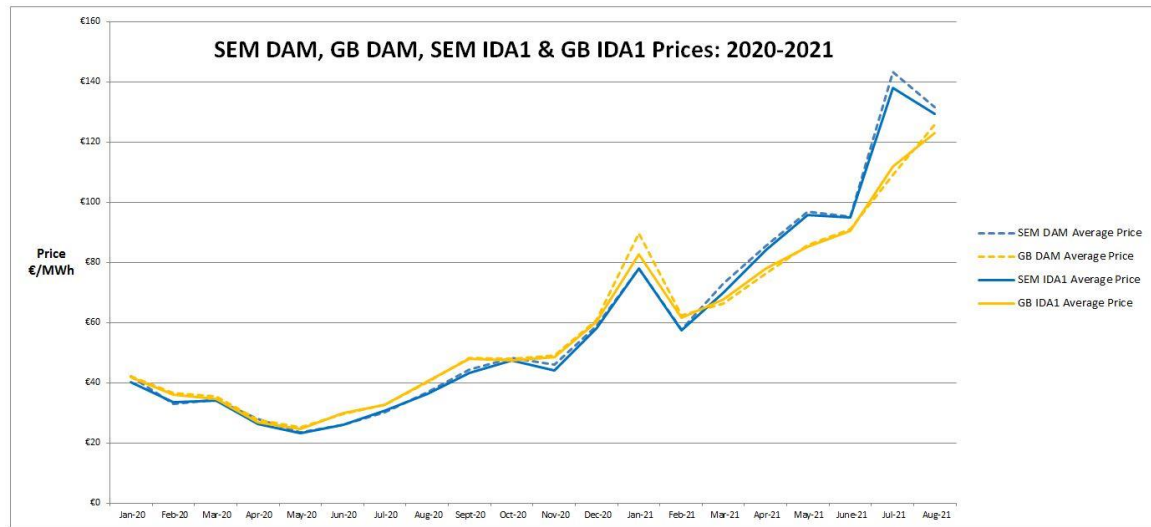
# Interconnector Utilisation



## Observations

- Interconnector utilisation continues to be within historical norms post-Brexit.
- There has been more variable monthly interconnector usage in 2021 but the primary drivers for this appear to be the market fundamentals in both SEM and GB which impact on prices in both jurisdictions. i.e. outage rates, wind generation output, demand, fuel prices and generation fleet composition.
- In the SEM, low wind, high outage rates, and increases in fuel cost for the generation fleet in 2021 has led to a general trend toward GB having lower prices than the SEM and hence imports dominating.
- Exports continue to generally follow wind generation output, although they are impacted by the other market fundamentals in both SEM and GB.

# SEM vs GB Prices: Pre/Post Brexit



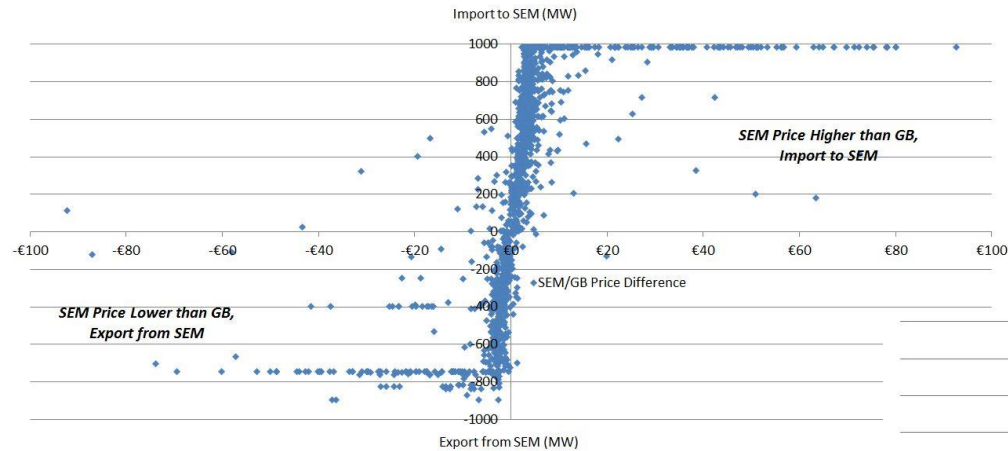
## Observations

- Generally SEM DAM and IDA1 average prices have correlated well, as have the GB DAM and IDA1 average prices.
- During January 2021 the GB system, and SEM system to some extent, was particularly stressed with outages combined with high demand.
- Both SEM and GB monthly average auction prices have increased significantly since the beginning of 2021.
  - These increases are generally explained by the market fundamentals of high outage rates, high demand, low wind, and high fuel prices.
  - Lack of coupling in the DAM does not appear to be a primary driver for the increasing prices.
- SEM monthly average prices have remained higher than GB prices in both the DAM and IDA1 since mid-February 2021.
  - The primary drivers for the price differences appear to be the market fundamentals in both SEM and GB which impact on prices in both jurisdictions. i.e. outage rates, wind generation output, demand, fuel prices and generation fleet composition.
- In 2021, even with full interconnector capacities available in the IDAs, there is still a lack of convergence in SEM/GB IDA1 auction prices. This indicates that demand for interconnection is higher than the capacity available and leads to the continued price divergence even in the coupled IDA1 auction.



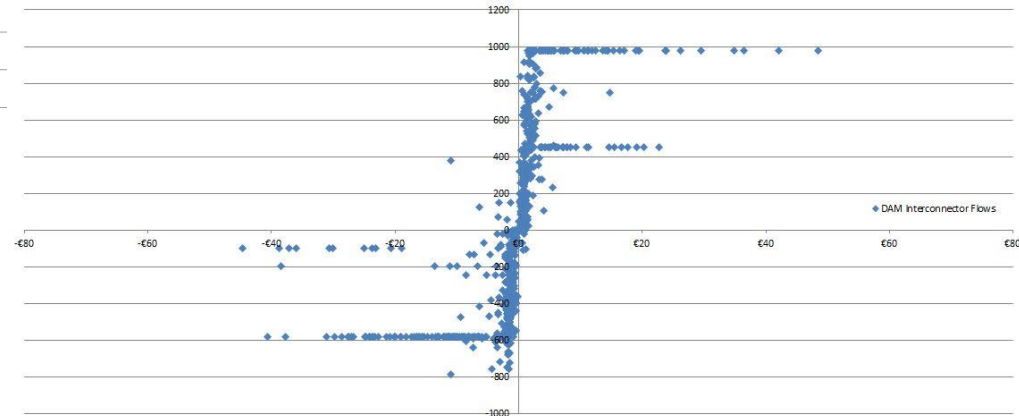
# Interconnector Scheduling

## Post-Brexit IDA1 (March 2021)



Note:  
IDA1 March 2021 contains ½ hr trading periods while the DAM March 2021 contains 1 hr trading periods, so the DAM graph has half the number of data points as the IDA1 graph.

## Pre-Brexit DAM (March 2020)



## Observations

- The graphs above provide typical examples of the “S” curves from pre and post-Brexit periods.
- The curves plot price difference between GB and SEM vs scheduled market interconnector flows. A perfectly efficient allocation of interconnector flows would result in a single line “S” curve with no scatter of points.
- Generally speaking, post-Brexit the interconnectors continue to schedule efficiently based on price spreads between SEM and GB and with flows scheduled in the economically correct direction.

# Summary

- **Operations of the ex-ante markets continues to be stable**
  - One auction cancellation (IDA2) on June 28<sup>th</sup>, but this was not Brexit related.
- **Majority of trade continues to be in the DAM (~85%)**
  - The drop from ~95% is due to the post-Brexit DAM being local only (not coupled) so additional interconnector capacity is being sold in the IDAs instead of the DAM.
- **IDAs have seen increase volumes traded compared to pre-Brexit.**
  - Typically 2-3x the volume of trade due to additional interconnected capacity now available in the IDAs
- **Interconnectors continue to be well utilised.**
  - Variations in interconnector utilisation each month generally seem to be based on market fundamentals
  - Imports have dominated in the SEM over the last number of months with average SEM prices generally higher than GB
- **SEM average auction prices increased significantly over the past number of months.**
  - Part of a pan-European and GB trend.
  - Market fundamentals of high outage rates, high demand, low wind, high fuel prices appear to be the main drivers for the increased prices.
  - Average DAM and IDA prices are similar which suggests that interconnection is not a significant contributor to the increased auction prices.
- **Interconnector Flows continue to scheduled in the economic direction**
  - Based on market fundamentals (demand, wind, outages) and relevant SEM and GB prices



# ETS Releases

Version	Content	Client	Impact	Timeline
V3.5.1	<ul style="list-style-type: none"> <li>• Changing the certificate handling in ETS (Enhancement on API)</li> <li>• Change in the handling of the cypher suite admission (Internal enhancement for API connections TSL)</li> </ul>	New client	Upgradable	Q4 2021
V3.6	<ul style="list-style-type: none"> <li>• Finalization of scoping in progress</li> <li>• Scalable Complex Orders</li> </ul>			Q2/Q3 2022
V3.7	<ul style="list-style-type: none"> <li>• TBC</li> </ul>			TBD

# ETS Maintenance Windows

Date & time	Impact	Reason	Communication
14/09/2021	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)
12/10/2021	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)
09/11/2021	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)
14/12/2021	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 2<sup>nd</sup> Tuesday of the Month.

# M7 Releases

Version	Content	Impact	Timeline
V6.12	Release notes / Impact to be sent.	No information yet	Q1 2022
V6.13	Release notes / Impact to be sent.	No information yet	Q4 2022

# M7 Maintenance Windows

Date & time	Impact	Reason	Communication
14/09/2021	Maintenance	Update on ECC Systems <i>(Post maintenance 6.11 will be mandatory)</i>	M7 chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
12/10/2021	Maintenance		M7 chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
09/11/2021	Maintenance		M7 chat message (1 hour before the maintenance) + OMM message (email sent a week in advance and on the same morning)
14/12/2021	Maintenance		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 2<sup>nd</sup> Tuesday of the Month.

# Reminder: Change to Operational Timings

## Changes to Operational Timings – went live on 17<sup>th</sup> June 2021

Normal Process	Current Timing	Proposed Timing (as of 17/06/21)
Results Publication	11:42	11:45
Final Results Publication	ASAP after 11:55	ASAP after 11:57

Fall Back Process	Current Timing	Proposed Timing (as of 17/06/21)
Full Decoupling Deadline (FD1)	12:50	13:00
Partial Decoupling Deadline (PD 1)	10:45	10:30
Partial Decoupling Deadline (PD 2)	11:40	11:45

Fall Back Process Communications	Current Timing	Proposed Timing (as of 17/06/21)
Deadline of informing about risk of Partial Decoupling (PD 2) Message ExC_03a	11:18	11:25
Deadline of declaring of Partial Decoupling (PD 2) Message ExC_04a	11:40	11:45
Deadline of informing about risk of Full Decoupling (FD1) Message ExC_03b	12:18	12:28
Deadline of declaring of Full Decoupling (FD1) Message ExC_04b	12:50	13:00

# General SEMOpx Updates

- SEMOpx Market Messages and Auction Timings – document update
  - Messages ExC\_03a (Risk of Partial Decoupling) / ExC\_04a (PD – Reopening of the OBKs / ExC\_03b (Further Delay of the Market Coupling Session / ExC\_04b (Full Decoupling)

Includes “This issue does not impact on SEMOpx auction trading, except in the potential for a delay in the publication of the SEM final DAM auction results.”  
when issue isn't impacting SEMOpx directly

- Aggregate Bid/Ask Curve Auction File – available via static report API (target date 10<sup>th</sup> September 2021)
  - No longer accessed via the document library section of the SEMOpx website

# Scalable Complex Order Project

Introduction of the new Scalable Complex Order project (for go-live Nov '22) retiring the current Complex Order Product.

Communications to date	
Kick-off meeting	7 <sup>th</sup> July 2021
Project Initiation Document	21 <sup>st</sup> July 2021
Results of Data Conversion 1	27 <sup>th</sup> July 2021
1 <sup>st</sup> Monthly Member Meeting	13 <sup>th</sup> August
Questionnaire on Conversion 1 Results [Feedback requested]	3 <sup>rd</sup> September

**Questionnaire** issued to assist members in efficiently providing focused feedback.

- **Initial responses by Friday 10th September** ahead of the next SCO Project meeting.
- **Final responses will then be accepted until the 24th September.** These will then be used as the final input into the Conversion 2 methodology.

**Next SCO Project Monthly Meeting is taking place on 17<sup>th</sup> September** (Final Conclusion on Conversion 1 results, questionnaire clarifications and update on Conversion 2)

“Save the Date” notification issued highlighting the next 5 monthly meeting dates

If you have not been receiving communications and want to be part of the working group contact [info@semopx.com](mailto:info@semopx.com)

# Upcoming Training Sessions

- Decoupling Member-Test

SDAC Decoupling member-test (DAM)	SEM-GB Decoupling member-test (IDAs)
3 <sup>rd</sup> November	30 <sup>th</sup> September

*Details to be provided in advance of both sessions outlining the registration process, reasoning and expectations of each session.*

***Can participants provide any feedback or proposals on any potential changes to approach regarding these sessions?***



# Submission on Behalf of Trading Tool

- Submission on Behalf Trading (SOBT) tool is used where connection issues mean all members are impacted and an alternative web link is used for manual submission of order books.
- Improved technical infrastructure and redundancy means that the SOBT tool is no longer required. This is being applied to all EU markets using ETS.
- Technical infrastructure for ETS now has failover servers that automatically switch to a back-up servers in the case of an unplanned outage on the main servers, allowing continuation of submissions.
- **Benefits to Participants:**
  - More reliable technical order submission infrastructure.
  - No requirement for members to maintain an internal SOBT process.
- Trading on Behalf (TOB) process not impacted. TOB is used to allow submission of individual sets of orders where submission issues occur with an individual member.
- Official communication has been issued via market message with change **effective from 14<sup>th</sup> September 2021**

# M7 API Load Management

## The Issue:

- M7 system is currently vulnerable to excessive orders being entered via API connections
- Increased API activity can create excessive loads on the application and can lead to market suspensions
- The SEM M7 system has infrastructure related to other jurisdiction so may be impacted by excessive order scenarios in other jurisdictions.
- The current processes to manage transaction loads are manual

## The Solution:

- A new API load management solution for all M7 instances will allow the automatic control of the numbers of orders submitted by a member
- The solution is being rolled out to all regions using M7, not just SEM.
- The volumes of transactions will be monitored over two rolling periods (Transactions per 24hr and Transactions per second)
- Members will received notifications when Soft and Hard limits are reached.
  - Soft Limits - a warning only, if a user breaches pre-defined transaction limits.
  - Hard Limits - will result in rejected orders, and in extreme cases suspension of the user.
- Orders can still be entered via Comtrader even if the limits have been reached for the API

*Current SEMOpx member activity is not sufficiently large enough to be impacted by the limits. However the limits will help to ensure the SEM M7 instance maintains high availability.*

Further communications will be provide as details and timelines (potentially Q1 2022) are confirmed.

# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	Eamon Garrigan
Ex-Ante Markets	Nigel Thomson
Repricing Update	<b>Dermot Campfield</b>
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	Claire Breslin
Q&A	

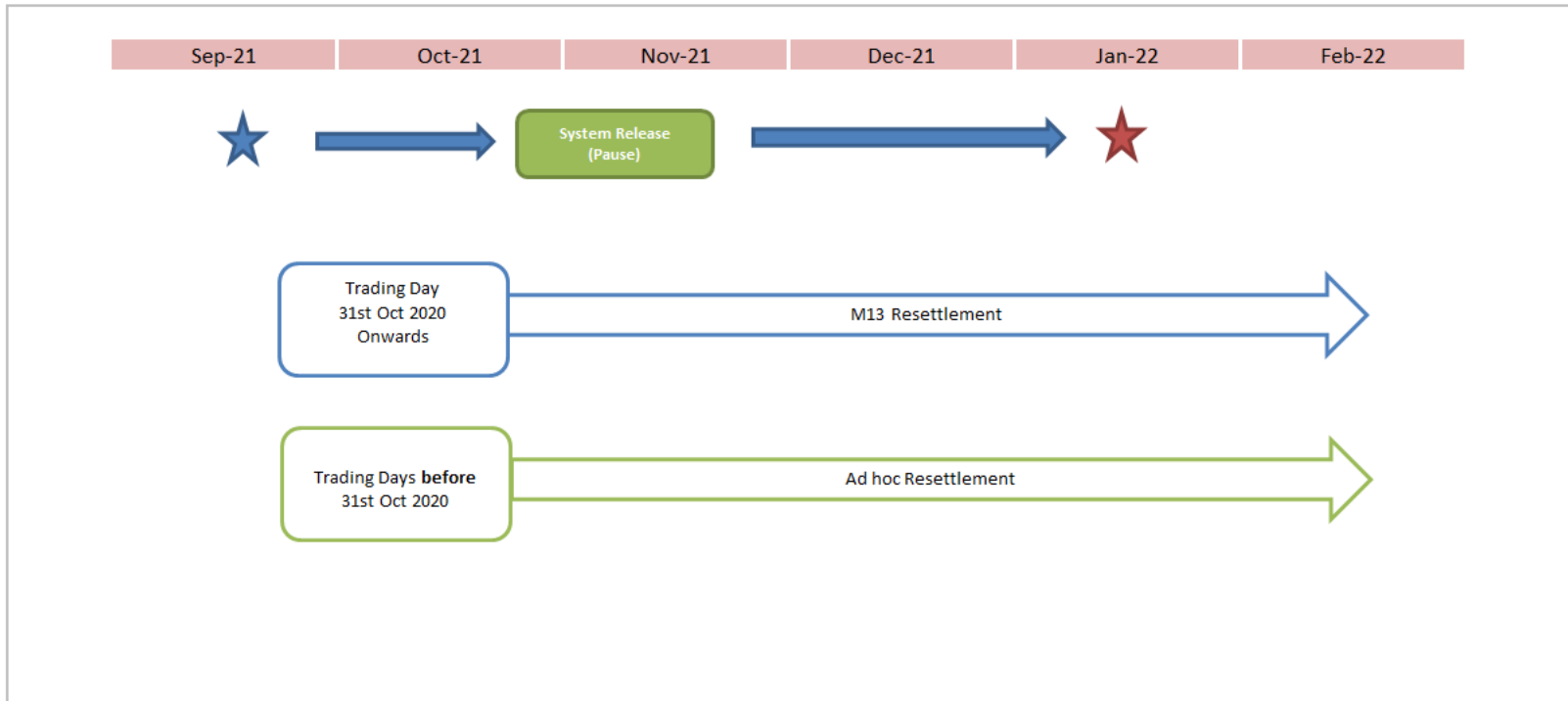
# Repricing Update

## Progress Summary

Summary Changes	To be Completed	Completion Status (May 2021)	Completion Status (Sept 2021)
Total Days to be Repriced	104	59	84
Total Imbalance Settlement Periods	1633	984	1,133
Total 5 Minute Periods	9798	5,904	6,798
Material periods to Date	NA	38%	40%

- ❑ One additional manifest error declared by the Market Operator since last MOUG (27/05/2021)
  1. Impacted dates - 19<sup>th</sup> to 21<sup>st</sup> June 2021
  2. Incorrect wind dispatch instructions input into Imbalance Pricing
  
- ❑ One Pricing Dispute submitted for Trading Day 11<sup>th</sup> August 2021.
  1. Any impacted periods will be communicated formally to the wider market via market message.

# Repricing Update



Repricing restarting; 1st materiality assessment 16/09/2021 & first publication of reports on 23/09/2021.



The current repricing schedule will finish middle of January 2022. Any subsequent repricing post this date will be scheduled ad hoc.

# Repricing Update

Trading Day	Imbalance Settlement Period(s)	Billing Period End Date	Manifest Error ID	Materiality Assessment Publication Date	Repricing Publication Date	Resettlement Publication Date
11/08/2019	07:00 to 23:00	17/08/2019 (Week 32)	RPC4	16/09/2021	23/09/2021	Ad hoc
12/08/2019	23:00 to 23:00	17/08/2019 (Week 32)	RPC4	23/09/2021	30/09/2021	Ad hoc
13/08/2019	23:00 to 23:00	17/08/2019 (Week 32)	RPC4	23/09/2021	30/09/2021	Ad hoc
14/08/2019	23:00 to 23:00	17/08/2019 (Week 32)	RPC4	30/09/2021	07/10/2021	Ad hoc
15/08/2019	11:00 to 14:30	17/08/2019 (Week 32)	RPC3	30/09/2021	07/10/2021	Ad hoc
15/08/2019	23:00 to 22:00	17/08/2019 (Week 32)	RPC4	30/09/2021	07/10/2021	Ad hoc
12/05/2020	01:00 to 08:00	16/05/2020 (Week 19)	RPC3	07/10/2021	14/10/2021	Ad hoc
13/08/2020	15:00 to 15:30	15/08/2020 (Week 32)	TBC	07/10/2021	14/10/2021	Ad hoc
11/09/2020	12:00 to 18:00	12/09/2020 (Week 36)	RPC4	14/10/2021	21/10/2021	Ad hoc
31/10/2020	12:00 to 20:00	31/10/2020 (Week 43)	RPC5	14/10/2021	21/10/2021	M13
20/11/2020	03:30 to 17:00	21/11/2020 (Week 46)	RPC4	21/10/2021	28/10/2021	M13
Pause for System Release						
15/02/2021	05:30 to 19:00	20/02/2021 (Week 7)	RPC4	18/11/2021	25/11/2021	M13
23/02/2021	13:00 to 15:30	27/02/2021 (Week 8)	RPC4	25/11/2021	02/12/2021	M13
25/02/2021	16:00 to 18:30	27/02/2021 (Week 8)	RPC4	25/11/2021	02/12/2021	M13
01/03/2021	11:00 to 12:30	06/03/2021 (Week 9)	RPC4	25/11/2021	02/12/2021	M13
04/04/2021	13:00 to 16:00	10/04/2021 (Week 15)	RPC4	02/12/2021	09/12/2021	M13
19/06/2021	08:00 to 23:00	26/06/2021 (Week 26)	RPC4	02/12/2021	09/12/2021	M13
20/06/2021	23:00 to 23:00	26/06/2021 (Week 26)	RPC4	09/12/2021	16/12/2021	M13
21/06/2021	23:00 to 17:30	26/06/2021 (Week 26)	RPC4	13/01/2022	20/01/2022	M13

# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	Eamon Garrigan
Ex-Ante Markets	Nigel Thomson
Repricing Update	Dermot Campfield
Settlements Update	<b>Sean O'Rourke</b>
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	Claire Breslin
Q&A	

# Settlement publications & timelines : May '2021 – Aug '2021

## Settlements publications: Indicative, Initial, Resettlement (RS) and Credit reports



### May 2021

- **183** settlement publications on time
- **7** delayed indicatives due to a mixture of DA/IDT data import issues (3), late MDP data (3) and backlog impact (1)
- 1 Initial and 1 Credit Report same day delay

### June 2021

- **184** settlement publications on time
- **5** delayed indicatives: CIM Load impact (1), IP data push issue (1), late MDP Data (1), DA/IDT Data (1) and backlog impact (1)
- 1 Credit Report same day delay

### July 2021

- **207** settlement publications on time
- **5** delayed indicatives due to a mixture of DA/IDT data import issues (4) – post bank holiday and data processing issue (1)
- 2 Initials delayed and 1 Credit Report same day delay

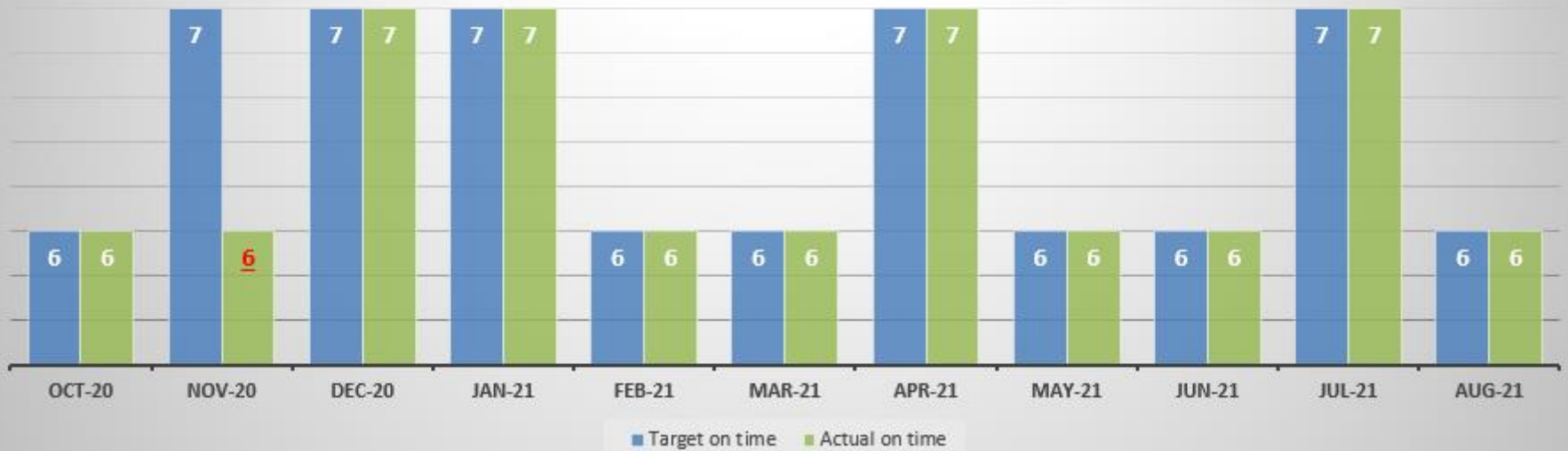
### August 2021

- **181** settlement publications on time
- 1 delayed indicative & initial due to system outage
- 1 within day Credit Report not published due to settlements systems access issue



## Settlement Documents publications & timelines : May '2021 – Aug '2021

Settlement Documents : Oct '20 - Aug '21 (BALIMB,Capacity and MO Invoicing)



### Settlement Document updates:

- **70** Settlement Documents published on time between Oct 2020 and August 2021 (includes BALIMB, Capacity and MO Invoices)
- **1** delayed Settlement Document publication between Oct 2020 and August 2021
- Settlement Document “number of billing periods” issue resolved with **Release G** (deployed June 2021). One “BALIMB/CRM” Settlement Document now published per week
- MO Invoices continue to be published the 2<sup>nd</sup> Tuesday of each month as per process update provided at the MOUG 27<sup>th</sup> May

# Ad hoc resettlement : Status update August 2021

## Scheduled Ad hoc resettlement completed to date :

Calendar Month	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
M+4 Month (s)	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21
M+13 Month	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20
Adhoc Month	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19

## Ad hoc summary :

Mar-21 to Aug-21

- AH up to 16/03/2019 (**24** weeks / billing periods published)
- Two** billing periods pushed out to the following week due to systems processing issues

## Scheduled Ad hoc resettlement to continue with :

Calendar Month	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22
M+4 Month (s)	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22
M+13 Month	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
Adhoc Month	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20 & May-20

## Ad hoc resettlement updates:

- 3.5 to 4.5** workdays/systems time required per adhoc billing period (data preparation /processing & analysis & exception handling/re-runs)
- Target to process one additional week of AH resettlement per calendar month from September 2021 onwards
- Additional adhoc schedule acceleration options continue to be assessed. Requirement for instruction profiling to be run for each M4/M13 resettlement is under review which will potentially free up significant systems access time to allocate to adhoc resettlement processing (around Oct/Nov 2021 timelines)
- Formal resettlement queries raised and upheld on adhoc resettlement completed to date will also need to be considered for future adhoc resettlement runs

# Settlement Documents to issue, Sep 10<sup>th</sup>

Settlement Document :
INITIAL BALIMB -(29/08/21-04/09/21) – Week 35 2021
M4 BALIMB - (09/05/21 -15/05/21) – Week 19 2021
M13 BALIMB - (09/08/20 -15/08/20) – Week 32 2020
AH BALIMB - (17/03/19-23/03/19) – Week 11 2019
Initial CRM Aug 21

2021-2022 Settlement Calendar is now updated;  
<https://www.sem-o.com/market-data/settlement-calendar/>

# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	Eamon Garrigan
Ex-Ante Markets	Nigel Thomson
Repricing Update	Dermot Campfield
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	<b>Mark O'Sullivan</b>
Market Interface Update	Claire Breslin
Q&A	

**Market Operator User Group  
Presentation**

# **Ramping Margin Tool**

**Mark O'Sullivan**

**Readiness Team**

**System Operations - Operation Office**

**09<sup>th</sup> September 2021**



# Agenda

- 1) DS3 (Delivering a Secure, Sustainable Electricity System) Control Centre Tools
- 2) Why is the Ramping Margin Tool (RMT) needed?
- 3) Calculations performed by RMT
- 4) RMT's Interaction with the Long Term Schedule (LTS) Run
- 5) When will RMT be needed?
- 6) System Operation - Before RMT Vs After RMT.



# DS3 Control Centre Tools

## Ramping Margin Tool – 1 of 3 DS3 Control Centre Tools

### 1) Ramping Margin Tool (RMT)

- **Ramping Margin Tool (RMT):** Determines additional ramping system service requirements with increased levels of variable generation to ensure that uncertainties in projected variable generation are managed.

### 2) Look Ahead Security Assessment Tool (LSAT)

- **Look-ahead Security Assessment Tool (LSAT):** Assesses the stability of system now and into the near future for changing wind and solar demand and proposes corrective actions to maintain stability where required.

### 3) Voltage Trajectory Tool (VTT)

- **Voltage Trajectory Tool (VTT):** Determines changes in overall voltage profiles with changing wind and solar demand and ensures that sufficient voltage control support is scheduled and optimised.

**Decision Support Tools:** To aid in the operation of the power system with increased levels of variable generation (wind and solar)

# DS3 Control Centre Tools

## Why deliver DS3 Control Centre

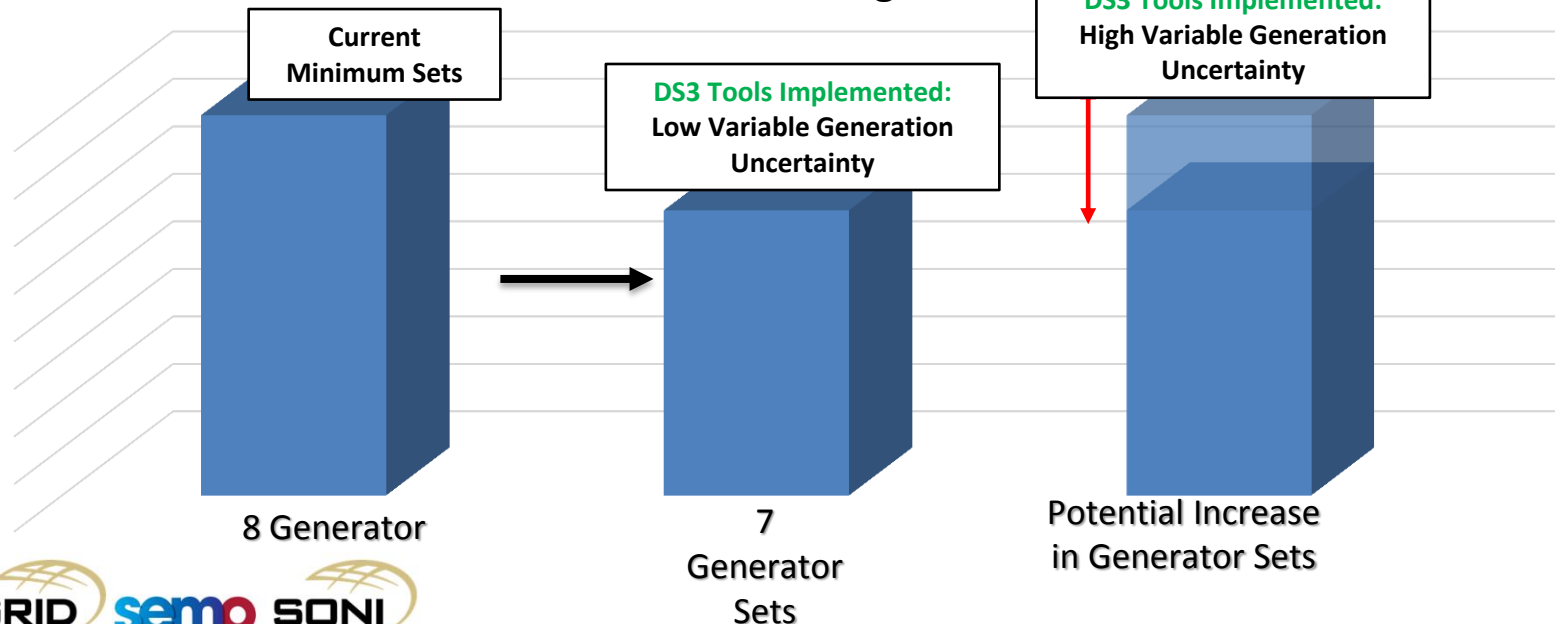
### Tools?

KMT, alongside LSAT and VTT, is needed going forward to securely operate the power system as complexity and uncertainty increases due to increased variable generation on the system.

- Provide more accurate real time information and monitoring facilities to Grid Controllers – essential to SNSP targets.
- Reduction in Generator sets and curtailment available in market

Resulting in lower cost generation

Resulting in cheaper bills

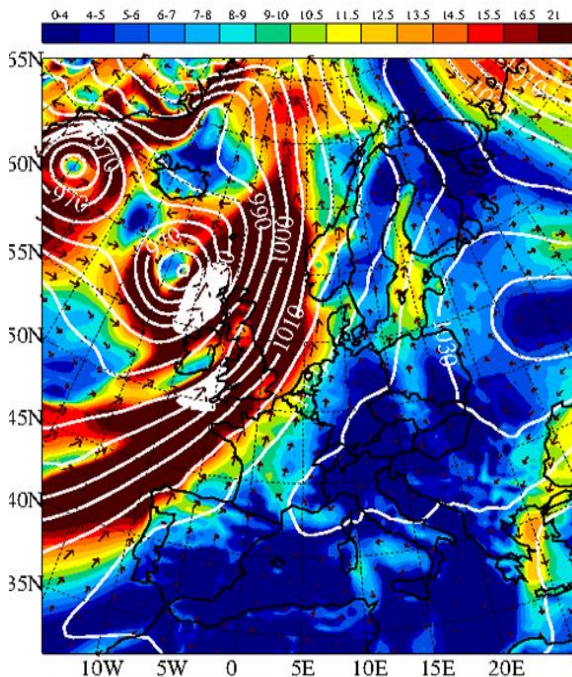




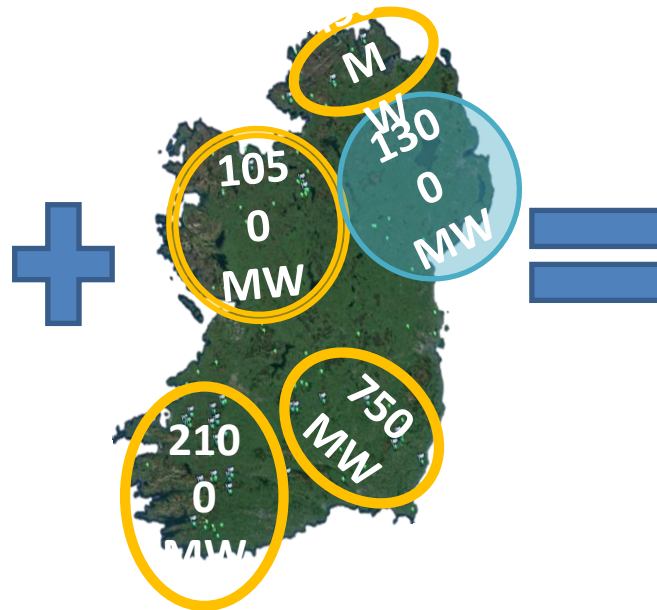
# Ramping Margin Tool – Why is it needed?

The Control Room's ability to manage and control generation will continue to become more challenging as variable generation increases in Ireland.

Ireland's Location –  
Atlantic Weather System Uncertainty



Wind Farm Clusters –  
Uneven Distribution



- Potential for variable generation forecasting errors and rapid drop off of variable generation.
- Very difficult for Control Centre to manage variable generation uncertainty and ramping reserve.<sup>41</sup>

# Calculations performed by RMT

## RMT's role in the DS3 Control Centre

### Tools?

- As the level of variable generation (wind and solar) increases on the system so too does level of generation uncertainty due to forecasting uncertainties - **RMT will help to quantify this uncertainty and ensure sufficient contingency reserve is in place to manage the uncertainty.**
- RMT will ensure there is enough ramping capability on days of high variable generation uncertainty, that in the event of unlikely variable generation drop off, the system is in a secure position to bring on additional sets at short notice.

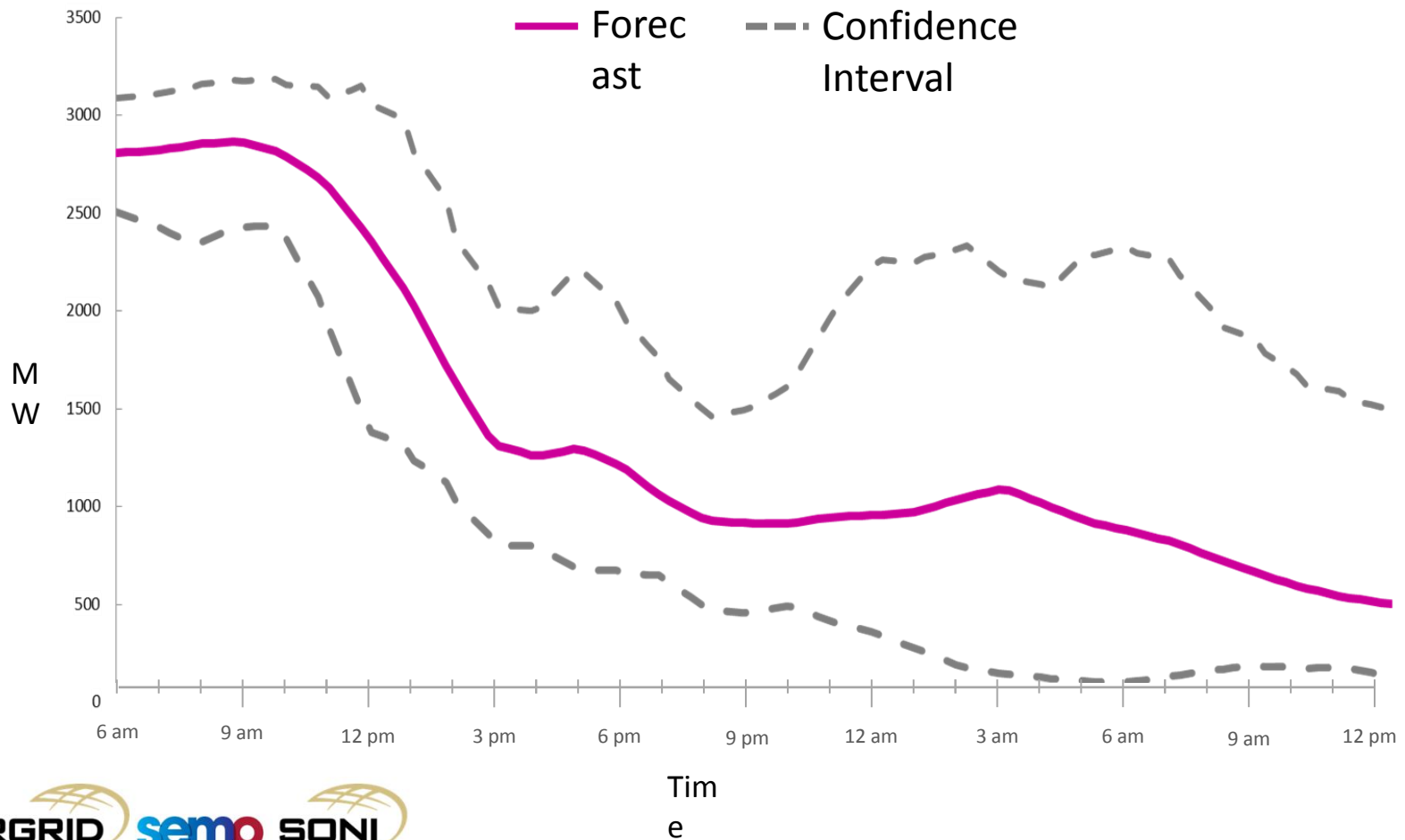
## RMT Overview

RMT will perform the following two functions:

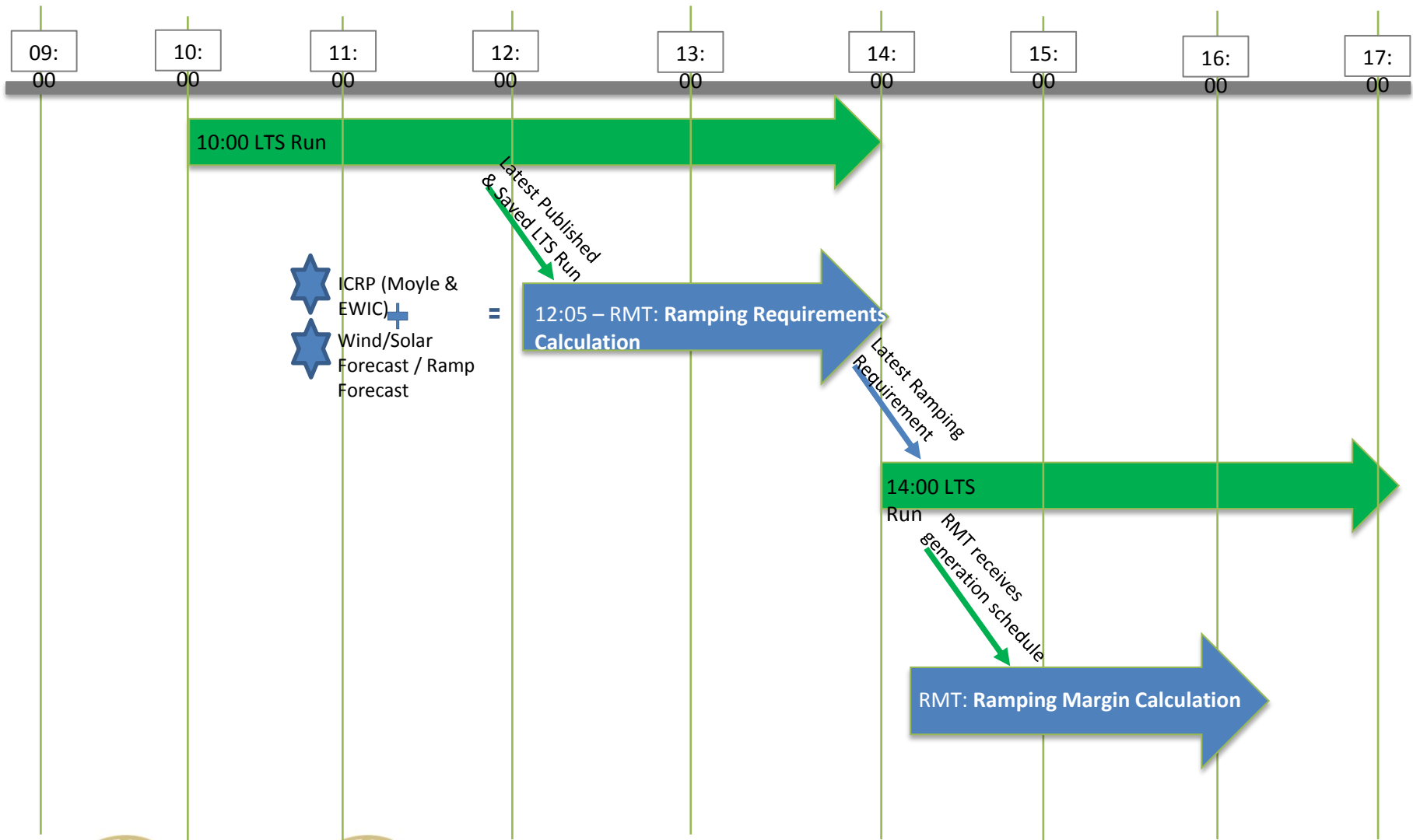
- 1) Ramping Requirements:** Calculate the additional ramping requirements at specific time horizons to ensure that uncertainties in projected variable generation are managed.
- 2) Ramping Margin:** Determine what conventional units can meet these additional ramping requirements at specific time horizons based on the units status and

# Calculations performed by RMT

Sample wind forecast provided by wind forecast vendor

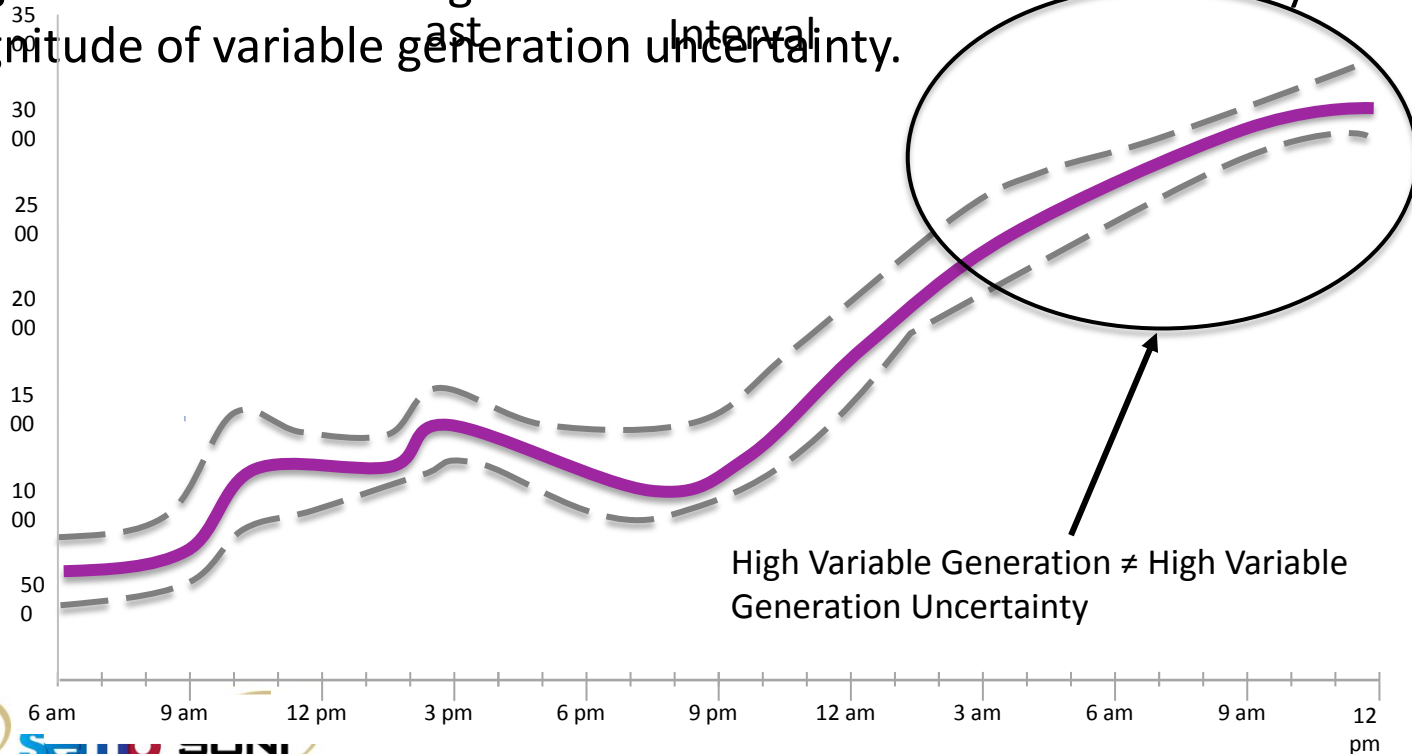


# RMT's Interaction with the Long Term Schedule run



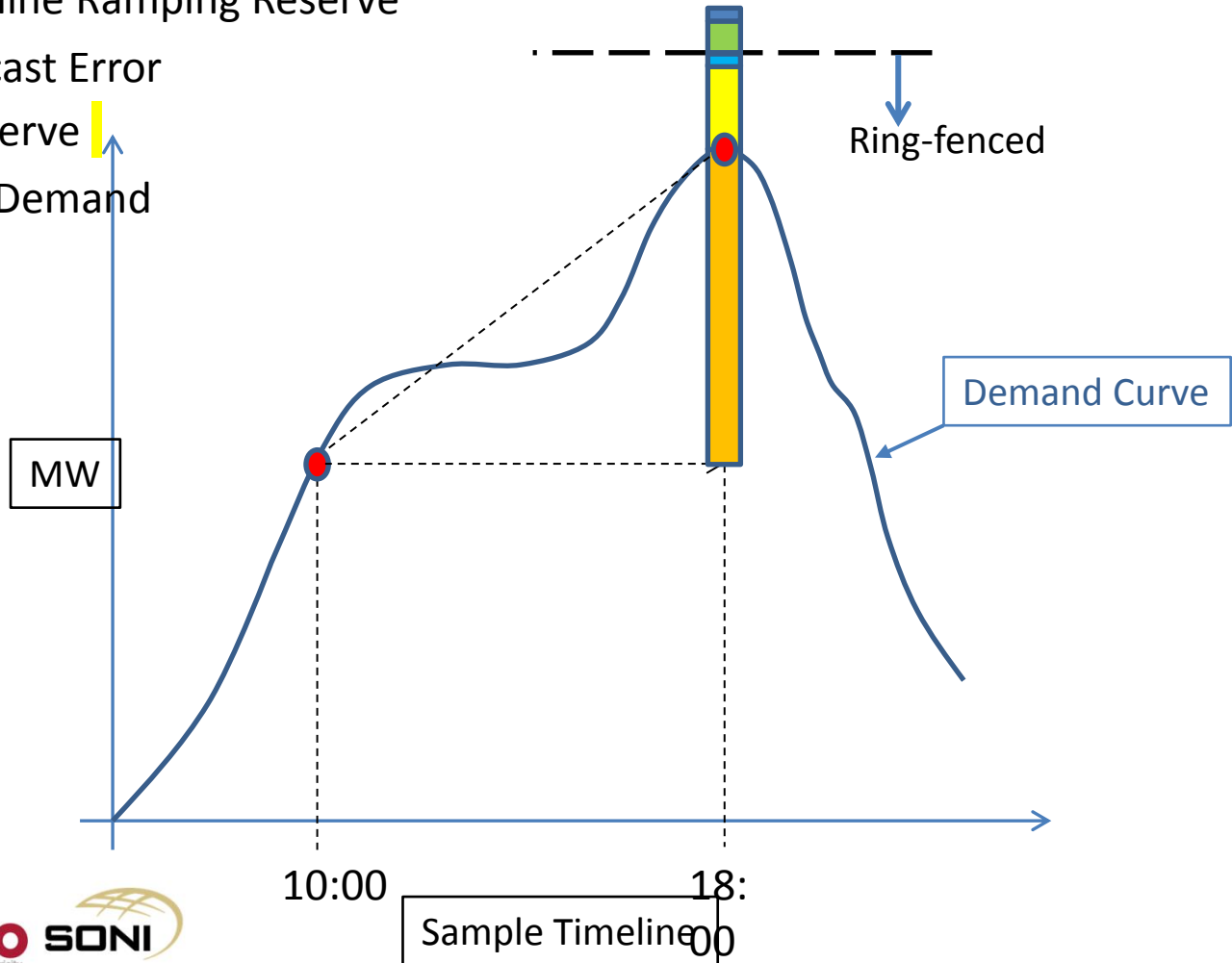
# Ramping Margin Tool – When will it be needed?

- The importance of RMT will truly come into effect on days of **High Variable Generation Uncertainty**.
- Days of High Variable Generation Uncertainty will occur approximately **10-15 times per year**.
- Magnitude of variable generation forecast does not directly correlate to magnitude of variable generation uncertainty.



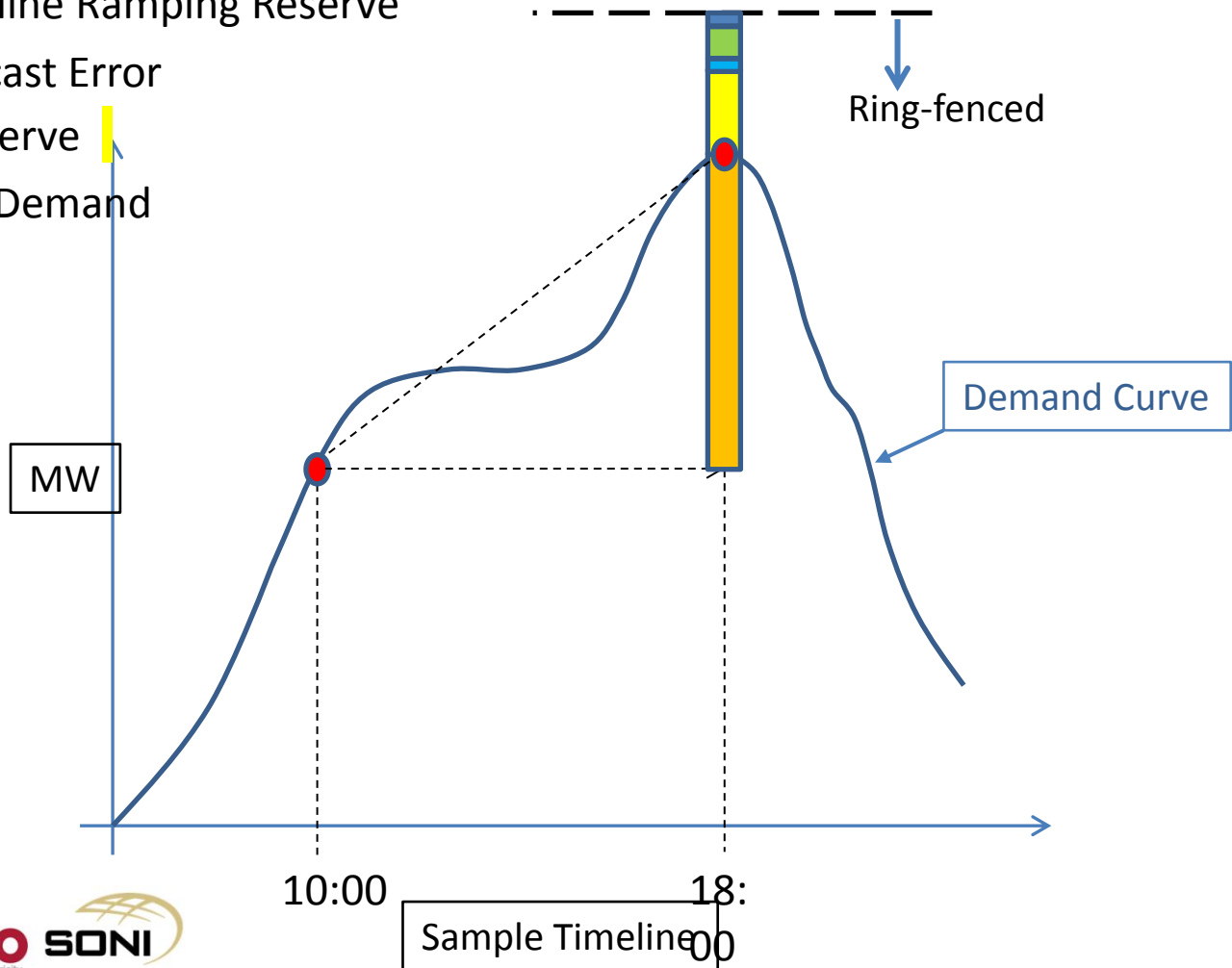
# Reserve Projections – Before RMT

- Interconnector Uncertainty
- Online/Offline Ramping Reserve
- Load Forecast Error
- Online Reserve
- Change in Demand



# Future Reserve Projections – After RMT

- Interconnector Uncertainty
- Online/Offline Ramping Reserve
- Load Forecast Error
- Online Reserve
- Change in Demand







Questions?





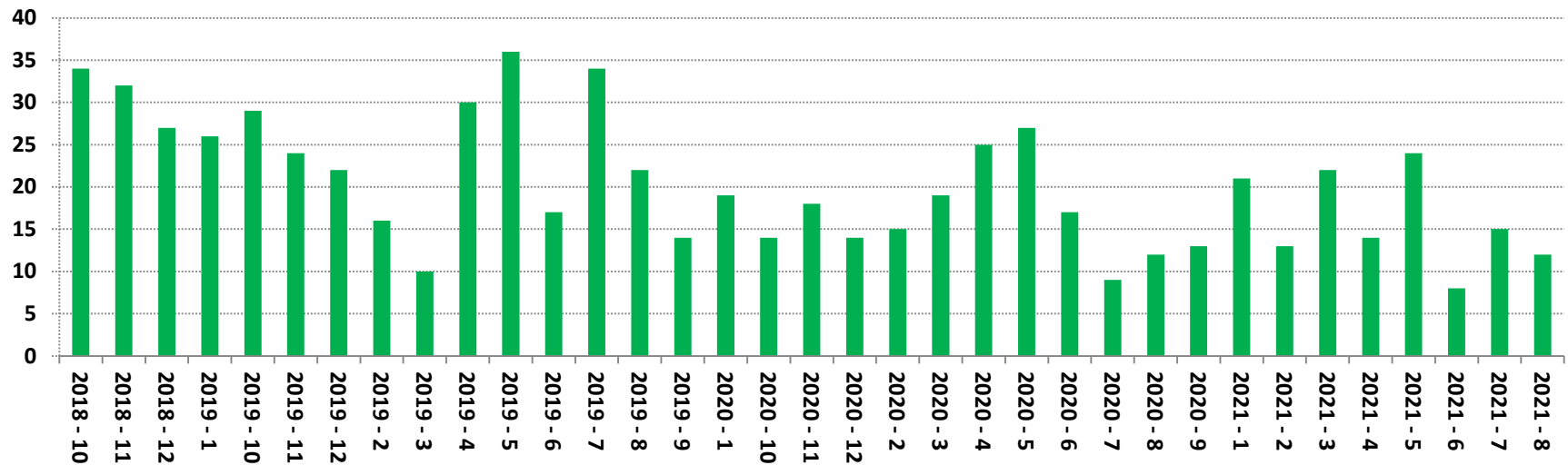
# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	Mark Needham (TBC)
Ex-Ante Markets	TBC
Repricing Update	Nigel Thompson
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	<b>Claire Breslin</b>
Q&A	

## Formal Queries \ Disputes - From the 27<sup>th</sup> of May to 07<sup>th</sup> of September

Formal Queries 37 were raised – 29 answered, 8 are in progress.  
One Pricing Dispute received still in progress.

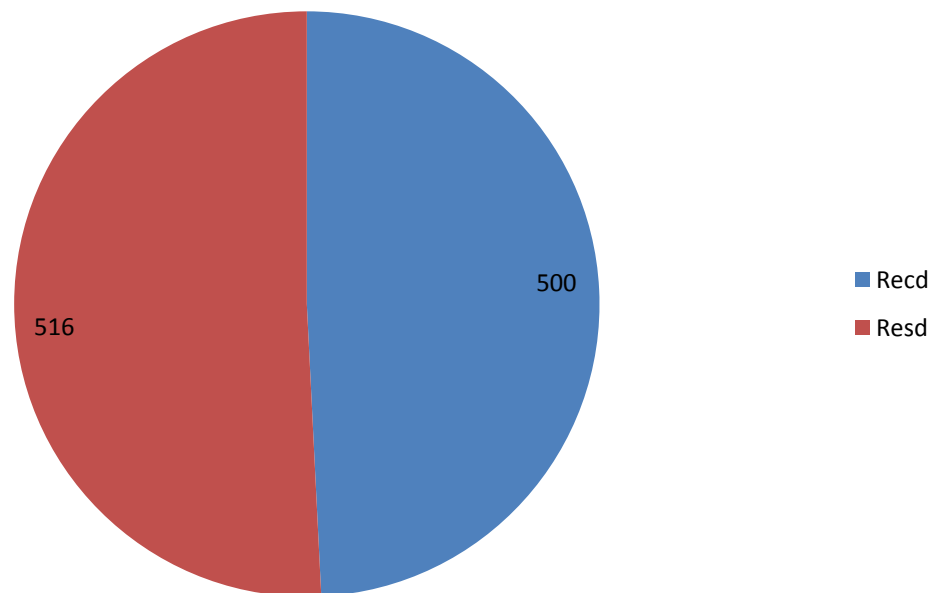
### Formal Settlement Queries Received



SEMO Decision	
Upheld	77%
Not Upheld	21%
Rejected	2%

SEMO Decision	
High Materiality	23%
Low Materiality	77%

# General Queries - From the 27<sup>th</sup> of May to 07<sup>th</sup> of September



**Next Participant Call: 16<sup>th</sup> Sept 2021**

**Next MOUG: 14<sup>th</sup> October 2021**

# Upcoming Capacity Auction Timetable

Key Dates	T-1 2022/23	T-3 2024/25	T-4 2025/26
Initial Auction Information Pack	13/04/2021	03/08/2021	01/10/2021
Qualification Application	11/05/2021	10/09/2021	26/10/2021
Provisional Qualification Decisions	19/07/2021	14/10/2021	09/12/2021
Final Qualification Decisions	16/09/2021	16/12/2021	17/02/2022
Final Auction Information Pack Published	07/10/2021	16/12/2021	01/03/2022
Capacity Auction Commencement	21/10/2021	20/01/2022	15/03/2022
Provisional Auction Results	03/11/2021	04/02/2022	28/03/2022
Final Auction Results	10/12/2021	04/03/2022	03/05/2022

# Notes

- All Capacity Auction Timetables are published on the semo website <https://www.sem-o.com/markets/capacity-market-overview/>
- Details on historical auction results can also be found on the SEMO website.
  - Minimum volumes needed can be found in Final Auction Information Packs
  - Information on MW volumes and prices can be found in Capacity Auction Results Reports

# Agenda

Item	Presenter
<b>Welcome</b>	Anne Fitzgerald
Release Program Update	Eamon Garrigan
Ex-Ante Markets	Nigel Thomson
Repricing Update	Dermot Campfield
Settlements Update	Sean O'Rourke
An overview of the new Ramping Margin Tool	Mark O'Sullivan
Market Interface Update	Claire Breslin
<b>Q&amp;A</b>	

# Close

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

***Thank you for your attendance.***