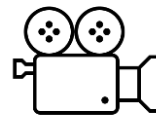


System Stress Event Webinar

This webinar is being recorded
19 October 2023



Agenda

| Timing | Topic | Presenter |
|---------------|--|---------------------------------------|
| 14:00 – 14:10 | Welcome & Introductions | Mitchell Bailey (NG ESO EMRDB) |
| 14:10 – 14:25 | System Stress Event (SSE) Overview, Timeline and Obligations and Relevant Balancing Services | Janet Coley (NG ESO EMRDB) |
| 14:25 – 14:40 | Differences between a Capacity Market Notice (CMN) and Electricity Margin Notice (EMN) | Richard Price (NG ESO) |
| 14:40 – 14:55 | Stress Event Approach & Testing Programme | Bir Virk (ESC) Ben Lathbury (EMRS) |
| 14:55 – 15:10 | Preparation for a System Stress Event - Calculations and Volume Reallocation | Craig Parker (EMRS) |
| 15:10 – 15:30 | Summary, Slido & Q&A | Mitchell Bailey (NG ESO EMRDB) |

Presenters



Caroline Wright
Capacity Market Delivery Manager
National Grid ESO



Mitchell Bailey
Capacity Market Delivery Manager
National Grid ESO



Janet Coley
EMR Senior Analyst
National Grid ESO



Richard Price
Senior Analyst - Short Term Operability
National Grid ESO



Ben Lathbury
Senior Business Analyst
EMR Settlements



Craig Parker
EMRS Operations Lead
EMR Settlements



Bir Virk
Lead Scheme Operations Manager
Low Carbon Contracts Company

Sli.do





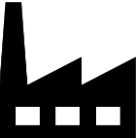
Please submit questions using Sli.do

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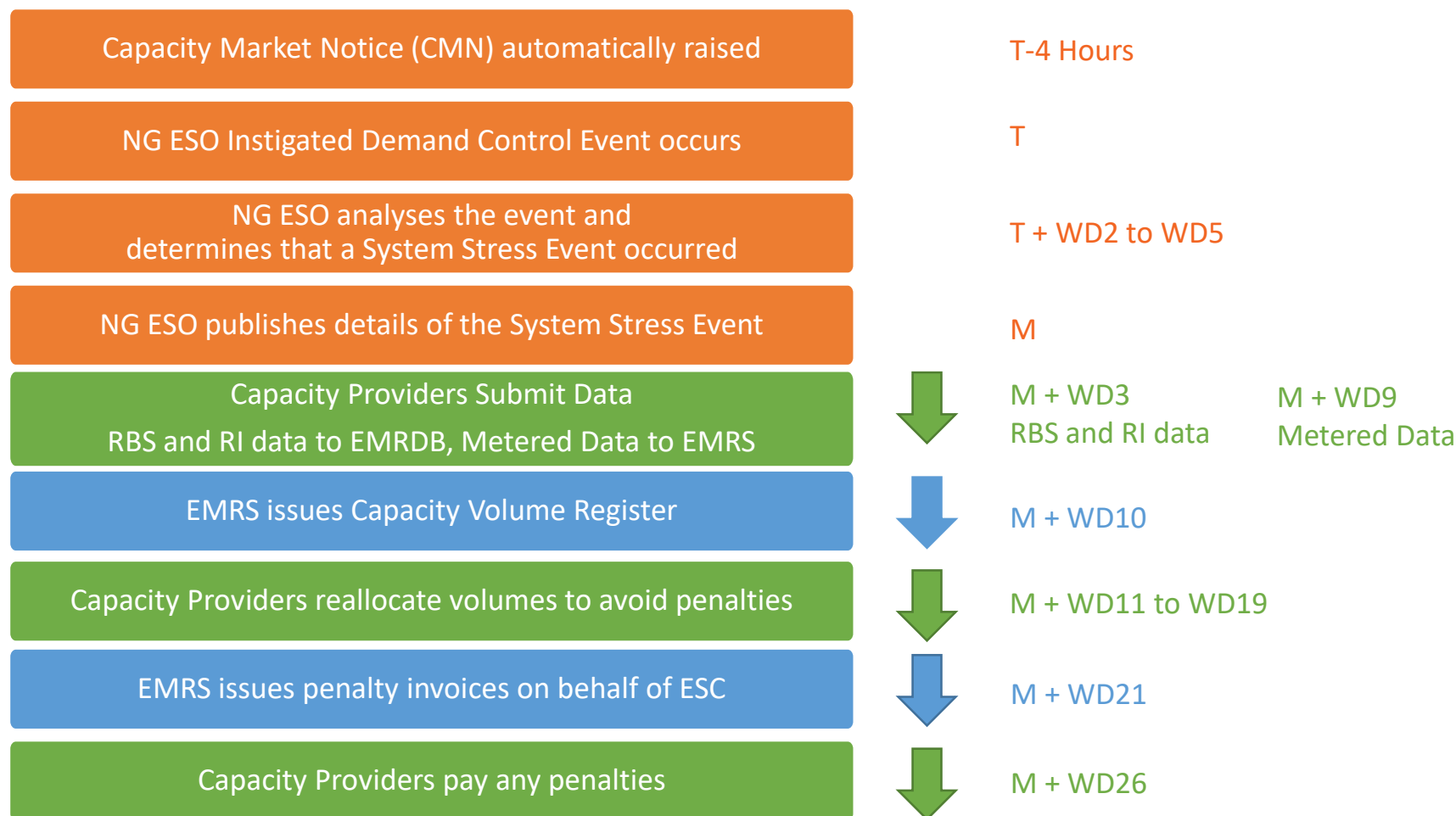
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Roles and Responsibilities in System Stress Event

| Organisation | CM Stress Event Responsibilities | Activities during CM Stress Event | Activities after CM Stress Event |
|--|---|---|---|
|  nationalgridESO Electricity Market Reform Delivery Body | <ul style="list-style-type: none"> Deliver the Capacity Market in line with Rules and Regulations | | <ul style="list-style-type: none"> Collation of RBS and RI data from Capacity Providers |
|  nationalgridESO | <ul style="list-style-type: none"> Issues Capacity Market Notices | <ul style="list-style-type: none"> Balances the System | <ul style="list-style-type: none"> Confirms that a Capacity Market Stress Event has Occurred |
|  EMR SETTLEMENT LIMITED | <ul style="list-style-type: none"> Supports ESC in managing meter changes and tests under the Metering Agent Contract Maintains and validates Aggregation Rules | | <ul style="list-style-type: none"> Publishes the Capacity Market Volume Register Operates the settlement system Issues data default notice |
|  Electricity Settlements Company | | | <ul style="list-style-type: none"> Oversees settlement of payments |
| Capacity Provider  | <ul style="list-style-type: none"> Track communications from relevant parties Ensures Authorised Persons are up-to date Engage in Physical Transfers of Capacity Obligations Ensure metering pathways have been setup and are functioning correctly | <ul style="list-style-type: none"> Ensure CMU is generating at least its Adjusted Load Following Capacity Obligation (ALFCO) | <ul style="list-style-type: none"> Submit data Take part in Volume Reallocation |
| ELEXON | | | <ul style="list-style-type: none"> Provides data to support the settlement process |
| Half-Hourly Data Aggregator | | | <ul style="list-style-type: none"> Provides metering data on behalf of CMUs registered with the Supplier Volume |

High level Capacity Stress Event Timeline



Please note if a System Stress Event occurs at the end of the month, DESNZ have published a [letter of comfort](#) confirming that timings for issuing Penalty invoices will be later than M+WD 21. This is due to data needing to be validated to ensure the invoices are accurate.

What is a System Stress Event?

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A System Stress Event is when a Settlement Period in which a System Operator Instigated Demand Control Event occurs where such event lasts at least 15 continuous minutes.

Where the event falls across multiple consecutive Settlement Periods, each of those Settlement Periods will be a System Stress Event.

System Operator Instigated Demand Control Events:

- Demand Reduction Instruction and/or an Emergency Manual Disconnection Instruction*
- Automatic Low Frequency Demand Disconnection*

*Subject to exceptions stated in [CM Rules 8.4.2](#)



What are 'Relevant Balancing Services' (RBS)?

The ESO procures a number of Balancing Services, many of which are 'Relevant Balancing Services'. For example, frequency response (DC, DM, DR) and reserve services (STOR) are classed as RBS. The full list can be found in the [RBS Guidelines](#).

- Current CM rule 8.5.4 states that the Capacity Provider must notify the ESO of any Balancing Services contract(s) they hold whilst also participating in the Capacity Market.
- However, many of our Balancing Services are procured at day ahead or very short durations and in the event of a system stress event, the EMR team now have a process in place to identify any Reserve or Response (day ahead procured) contracts applicable on any given day.

For further information, please contact Steve Miller, Contracts Team Manager at steve.k.miller@nationalgrideso.com

Capacity Providers preparations for a System Stress Event

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ESO | Electricity Market Reform
Delivery Body

Electricity
Settlements
Company

EMR
SETTLEMENT
LIMITED

Capacity Market Stress Event Guide

nationalgridESO

Notifications

FAQs

Useful Links

Electricity Capacity Market Notice Cancelled

Posted by National Grid Electricity System Operator at 2:04pm on Monday 28th November 2022

The Capacity Market Notice originally active from 6:00pm on Monday 28th November 2022 has been cancelled from 6:00pm on Monday 28th November 2022

Electricity Capacity Market Notice Currently Active

Posted by National Grid Electricity System Operator at 1:33pm on Monday 28th November 2022

| | |
|---|--|
| Commencement time of notice | 6:00pm on Monday 28th November 2022 |
| Circumstances that triggered notice | Margin below threshold set out in Capacity Market Rules |
| Transmission Demand and Operating Margin (MW) | 38,338 |
| Aggregate Capacity of BM Units expected (MW) | 38,784 |
| Additional Capacity (MW) | No definitive information regarding additional capacity is currently available to the Electricity System Operator. |

Capacity Market participants are advised to review the System Warnings page on [BMRB](#) for potential additional operational warnings from the Electricity System Operator. This notice is published pursuant to Rule 8.4.6 / 11.3.5 of the [Capacity Market Rules](#)

Participants are also advised to pay close attention to [De-rated Margin](#) (DRM) information on the BMRB website that will be updated 3 times (4 hour, 2 hour and 1 hour ahead) in advance of the "commencement time" of this Capacity Market Notice.

Preparations before a System Stress Event:

- ☐ Capacity Obligated CMU details are correct within EMRDB and EMRS systems (i.e. metering details, contact details).
- ☐ Capacity Obligated CMU is ready to deliver its Adjusted Load Following Capacity Obligation (ALFCO) (see Section 4.1 of the [Capacity Market Stress Event Guide](#)).

If you become aware of any reason why the Capacity Obligated CMU is unable to deliver its ALFCO before a System Stress Event, then please inform [EMRDB](#).

- ☐ Subscribe to receive emails / SMS for any Capacity Market Notices issued by NGESO, via dedicated [website](#).

Post-Event:

- ☐ Understanding of the data provision required after a System Stress Event (e.g. submit RBS and RI data to EMRDB, volume reallocation; see Capacity Market Stress Event Guide).

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Delivery Body

nationalgridESO

Delivery Body Q&A

Please submit questions using Sli.do

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What is a Capacity Market Notice (CMN)?

The Capacity Market Notice (CMN) process commenced on 01 October 2016.

A CMN is a signal four hours in advance that demand may exceed generation on the electricity transmission system, or that a system stress event has occurred for which a CMN was not in place.

CMNs are published automatically on a dedicated website, with email and text alerts issued to subscribers.

(<https://gbcmn.nationalgrideso.co.uk>)

A CMN is not a dispatch tool for Capacity Market participants to take specific action.

Intended to be an indication to Capacity Providers that the risk of a System Stress Event is higher than under normal circumstances.



How is a Capacity Market Notice triggered?

Triggers for a CMN:

- NGESO Instigated Demand Control Event Occurs where a CMN is not already in force*
- Inadequate System Margin forecasted

Inadequate System Margin is triggered where:

forecast generation is less than
forecast demand +
operating margin +
500MW

Contents of Capacity Market Notice:

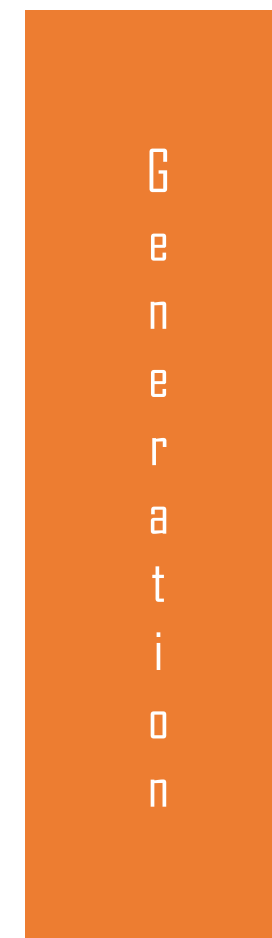
Electricity Capacity Market Notice Currently Active

Posted by National Grid (System Operator) at 12:06pm on Monday 7th November 2016

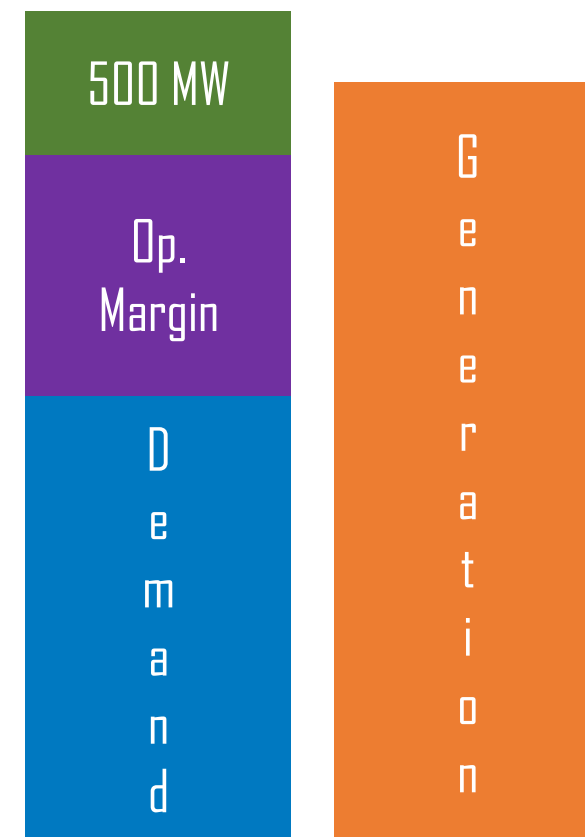
| | |
|---|--|
| Commencement time of notice | 4:30pm on Monday 7th November 2016 |
| Circumstances that triggered notice | Margin below threshold set out in Capacity Market Rules |
| Transmission Demand and Operating Margin (MW) | 48,265 |
| Aggregate Capacity of BM Units expected (MW) | 48,178 |
| Additional Capacity (MW) | No definitive information regarding additional capacity is currently available to the System Operator. |

Capacity Market participants are advised to review the System Warnings page on [BMRS](#) for potential additional operational warnings from the System Operator. This notice is published pursuant to Rule 11.3.5 of the [Capacity Market Rules](#)

No CMN Triggered



CMN Triggered



*Other than where the action has a system management flag attached - CM Rules 8.4.2 (iii)

What is an Electricity Margin Notice (EMN) and how is it triggered?

If we can see that our normal safety margin for operating the system is not as big as we'd like, and we can't address it through the normal mechanisms, then we, as NGESO, would consider issuing an Electricity Margin Notice (EMN).

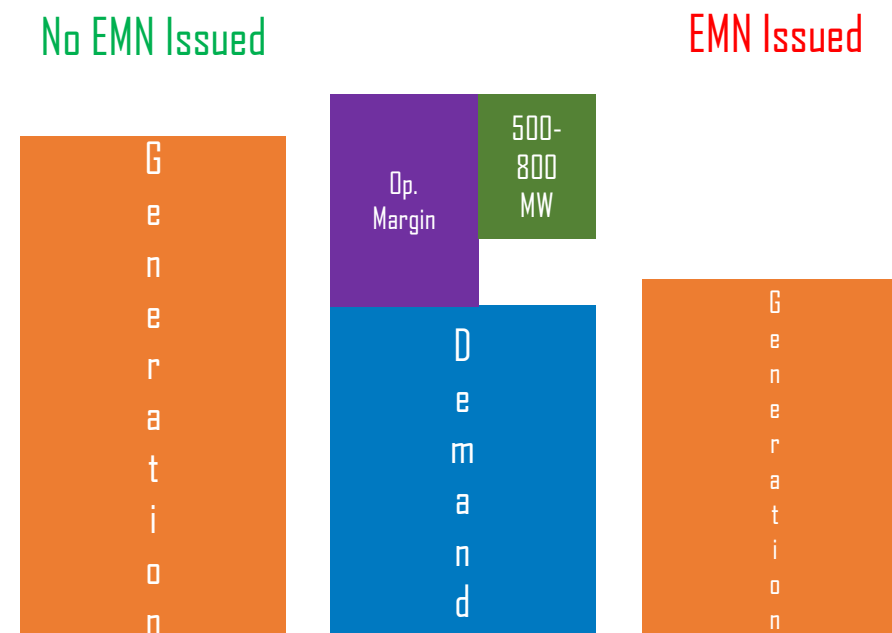
This doesn't mean we don't have enough electricity to meet demand; it just means we'd like a larger cushion of spare capacity, and we want the market to provide it.

EMNs are issued by our control room using operational and engineering judgements, and are based on our experts' experience, skill and knowledge of managing the electricity system (and taking account of a range of factors they have a live view of in the control room).

An EMN may be issued when:

forecast generation is less than
forecast demand +
operating margin -
500-800MW

Depending on operational and engineering judgement.

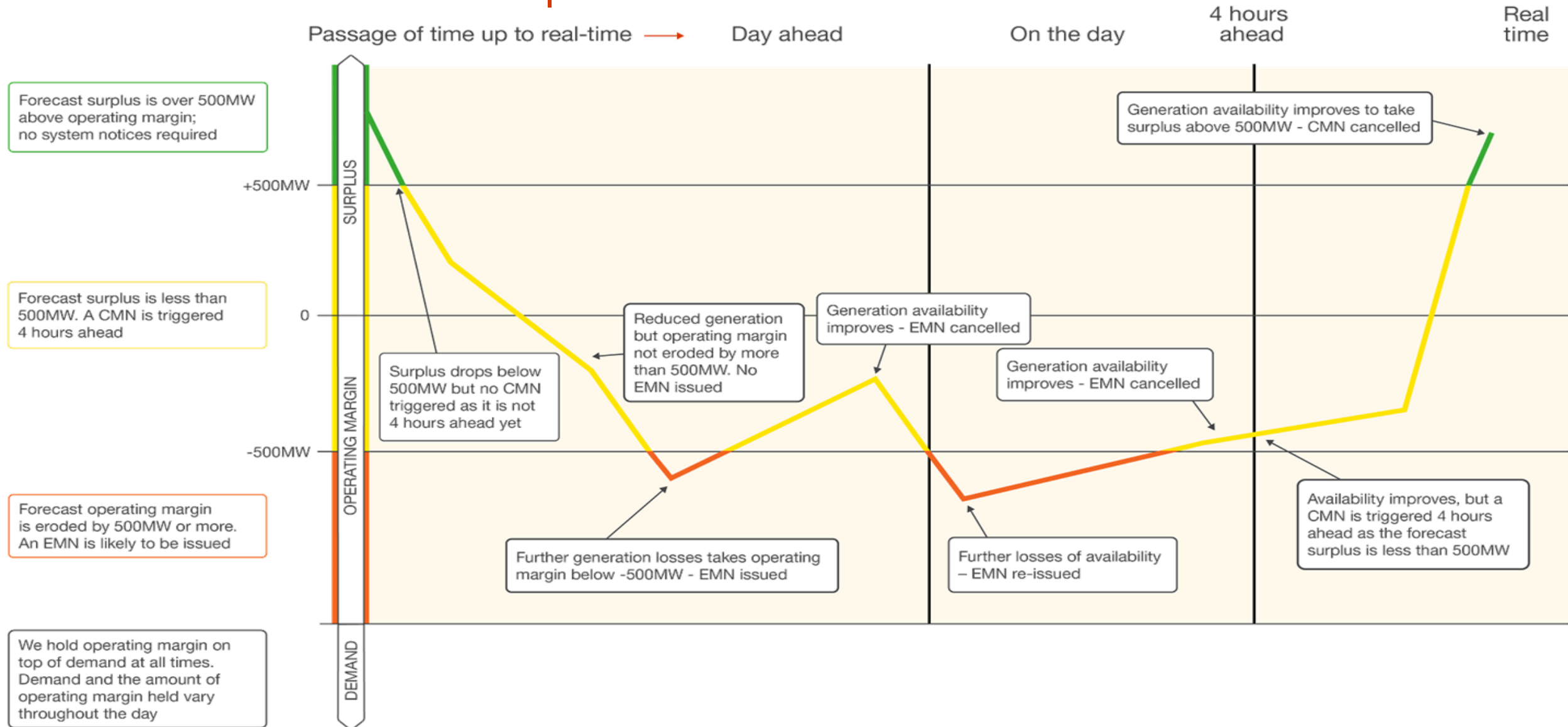


Comparison of Capacity Market Notice (CMN) and Electricity Margin Notice (EMN)

| CMN | vs | EMN |
|---|-------------------|---|
| Automated | Trigger | Manual |
| 500MW above margin requirement | Threshold | 500-800MW below margin requirement |
| Not included | Constraints | Included |
| 4 hours out (for initial alert) | Lead time | Flexible |
| CM Agreement holders put on notice that risk of System Stress Event is elevated | Expected response | Provision of additional energy where possible |
| Capacity Market Notices Website | Publication | Balancing Mechanism Reporting Service |
| Aimed at CM agreement holders | Focus | Operationally focused |

Separate and not sequential

CMN / EMN Timeline Example



NG ESO Q&A

Please submit questions using Sli.do

The code to participate is:

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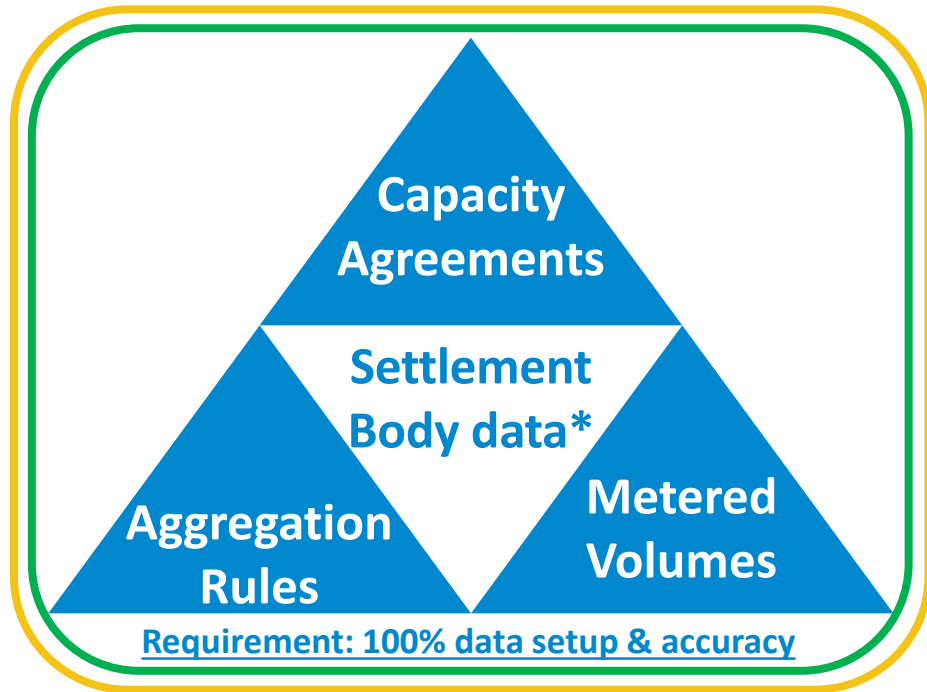


Stress Event Approach & Testing Programme

At ESC we have been focusing on data to de-risk settlement,
improve processes and deliver operational benefit

Stress Event Approach

We will use our settlement data* to aid the settlement of a potential Stress Event



SPD/EP testing

Stress Event settlement

Exceptions where Capacity Providers need to send data:

- ✓ Relevant Balancing Services or Interruptible data – to the EMR DB
- ✓ Self-submission sites – to EMRS
- ✓ This data is not already contained within our existing processes



CPs will have more time to validate what we send rather than submitting data



Reminder: Any CMU set up errors will mean penalties – there are no reconciliations

Stress Event Testing Programme aligned with our ESC data focus

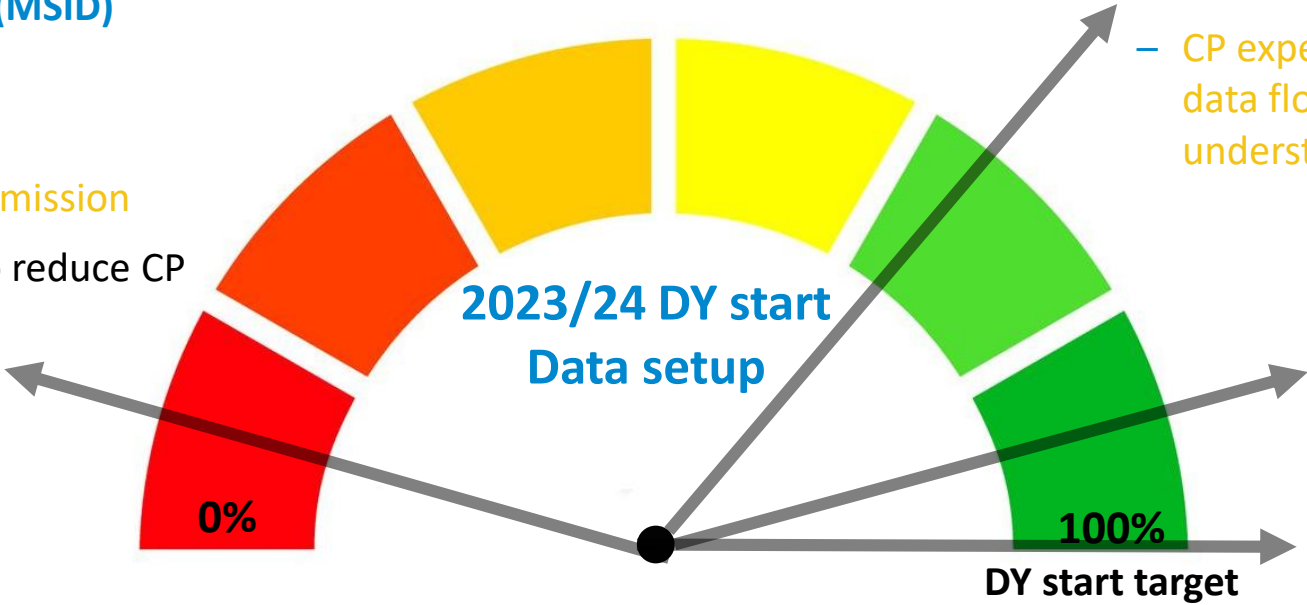
Agenda:

- 1) **Data Quality:** Continued focus and progression of initiatives
- 2) **Process Improvements:** Explore further automation and embed new processes
 - Process Improvement 1: SPD/EPT Pass Reporting – *Complete, improvements BAU*
 - Process Improvement 2: Mock Stress Event 2.0 – *Embed process for this DY*
- 3) **Processes and System Enhancement:** Support automation to reduce:
 - CP administration, and
 - Settlement Risks

1. Data Quality: Status 2023/24 DY Start

Metered Data – Self-Submission (MSID) flow setup: 16%

- Focus area for improvement
- Inconsistency exists in data submission
- ESC exploring improvements to reduce CP administrative burden
- Policy discussions in progress



Metered Data – MPAN flow setup: 82%

- Improved setup compared to previous Delivery Years
- CP experiencing issues in setting up MPAN data flows. Settlement Body is engaging to understand and assist

Aggregation Rules: 98% Initiative operating effectively

Metered Data – BMU flow setup: 100%

Existing initiatives progress

Data Quality Initiative 1 – Aggregation rules submission – **MAINTAIN**

Data Quality Initiative 2 – Metered Data & Registration – **MAINTAIN & UNDERSTAND DATA SETUP ISSUES**

Data setup critical for accurate settlement and increased automation
If any data setup issues are experienced, please contact EMRS or ESC

2. Process Improvements

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2023/24 DY Mock Stress Event Reporting

2022/23 DY Mock Stress Event reporting exercise focusing on Data Quality carried out, SB issued:

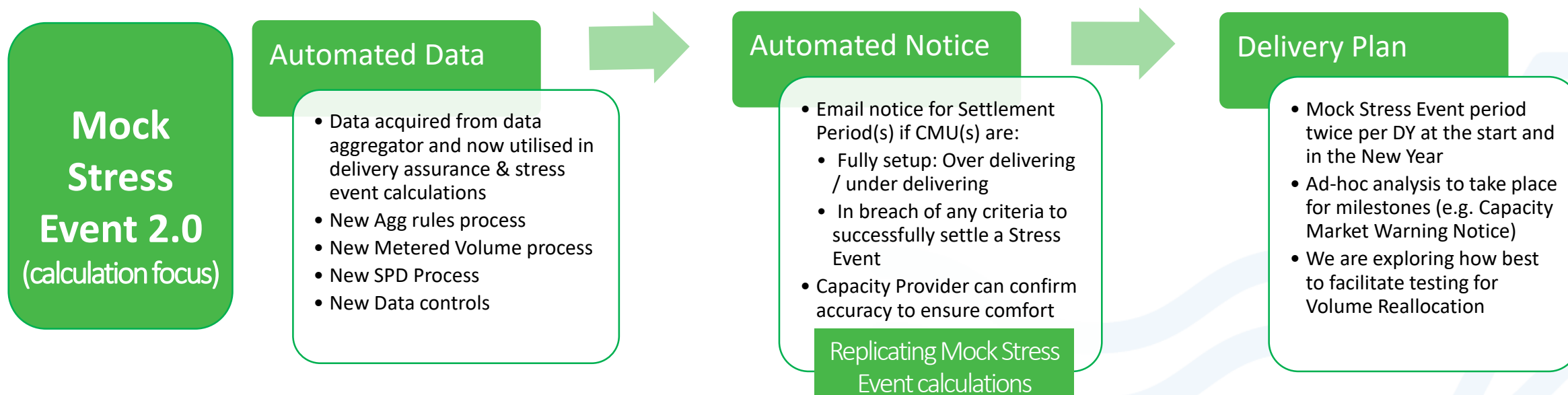
June 2023: Email alerts issued to Capacity Provider

July 2023: Webinar held to explain New process with stakeholder Question & Answer session

[Mock System Stress Event Reporting Webinar: 4 July 2023](#)
[Recording available on YouTube](#)

2023/24 DY reports to be issued to Capacity Providers in mid-November 2023

No prior CP action required – reporting on Data Quality to support the Output and Penalty Calculations



Capacity Providers will have two weeks to send in any queries to the EMRS Service Desk

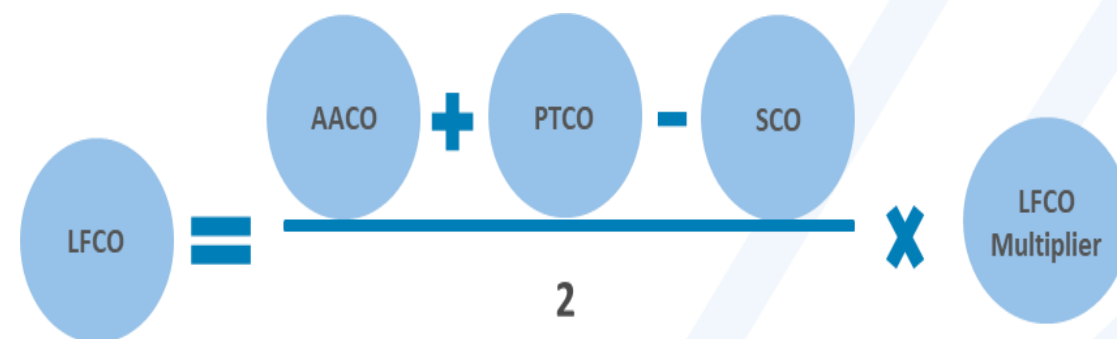
Aim: Enhance knowledge and awareness of Stress Event calculations and flag data inconsistencies

Adjusted Load Following Capacity Obligation (ALFCO)

- Capacity Provider must deliver their “Adjusted Load Following Capacity Obligation” (ALFCO) during a Capacity Market Stress Event.
- ALFCO for each CMU is calculated after a System Stress Event has occurred and publishes the Capacity Volume Register (CVR).
- At a high-level a CMU’s indicative ALFCO is calculated as:



- Capacity committed to balancing services means the volume the CMU provides for the relevant balancing services. This is not included in the Mock Stress Event Reporting.
- The Mock Stress Event Reporting can be used to validate this calculation:



3. Processes and System Enhancement: Metering Process Transfer

Improving Settlement Body data to reduce settlement and Stress Event Risk

Recommending a transfer of roles and responsibilities from the EMR DB to the Settlement Body:

Metering Aggregation | Metering Assessment | Metering Test | DSR Component reallocation

High-level benefits: Opportunity to make processes less complex to benefit Capacity Providers



Knowledge and expertise: Data validation by subject matter expert in the correct system

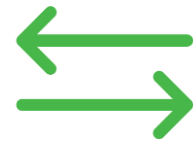
Settlement processes: Metering data being used for processes stored in the same system



Improved customer experience: Clarity on Delivery Partner accountability & metering process ownership



Data submission simplified: Metering obligations to be submitted post agreement simplifying obligation and customer risk at prequalification



Quicker efficient data access: No data transfer interface required for settlement

Reduced operational cost: Removal of manual workarounds to fix issues



Reduced settlement / Stress Event risk: No settlement delay risk as data correction and manual workaround reduced.

Status: CM Rules Change Proposal Report for **CP373 'Process Transfer from DB to SB** issued to Ofgem, with a CM Advisory Group (CMAG) recommendation that it should be implemented, subject to Statutory Consultation. [CP373: Process Transfer from DB to SB - Elexon CMAG](#)

Engagement Critical: Feedback required on this process enhancement & further areas to prioritise improvement

Thank you!



Preparation for a System Stress Event

EMRS Stress Event Calculations

As a Capacity Provider, please ensure:

- Read the [Capacity Market Stress Event Guide](#) and review:
 - **Adjusted Load Following Capacity Obligation (ALFCO Section 4.1)** is what Capacity Providers are required to deliver during a Stress Event
 - **Penalty invoice calculation (Section 8)** how penalties are calculated if you do not deliver
 - **Volume Reallocation (Section 7)** reallocate volumes for any Settlement Period that forms part of a Stress Event from an over-delivering CMU to an under-delivering CMU.
- **Relevant Balancing Services (RBS) or Interruptible data** should still be submitted if:
 - There is a balancing action conflicting with a Stress Event (as per the rules).
 - Send to EMR Delivery Body who will internally validate and send to EMRS

My EMRS: Registration and Volume Reallocation



Dashboard

Registration

Party Details

Party Data

CP Metered Data

CMVRN

- Please ensure your registration details are up to date
- Please submit and monitor Capacity Market Volume Reallocation Notifications (CMVRNs)
- EMRS is responsible for validating and matching them to their counterparts and notifying the Capacity Providers of the outcome
- EMRS publish the Capacity Volume Register (CVR) daily during the Volume Reallocation window



Window opens at 8.30 on the 11th working day and closes at 4.30 on the 19th working day after the end of the month in which the Capacity Market Stress Event occurs



CMVRN must be sent by both the transferor and the transferee

New

My EMRS / Cutup / Dashboard / Volume Reallocation Windows / 1

Volume Reallocation Window

A Guide to Volume Reallocation Windows

Trading Windows will run from 11th to 19th working days (inclusive) in the month following the Stress Event.

Volume can be traded for multiple stress events in the same trading window.

Volume Reallocation Window Details

| | |
|-------------------------------------|---------------|
| Delivery Year | 2021/22 |
| Start of Volume Reallocation Window | 11 March 2022 |
| End of Volume Reallocation Window | 19 March 2022 |

Stress Event Details

| | |
|-------------------------|-------------|
| Start Date | 11 Feb 2022 |
| Start Settlement Period | 5 |
| End Date | 11 Feb 2022 |
| End Settlement Period | 7 |

Capacity Volume Register (CVR)

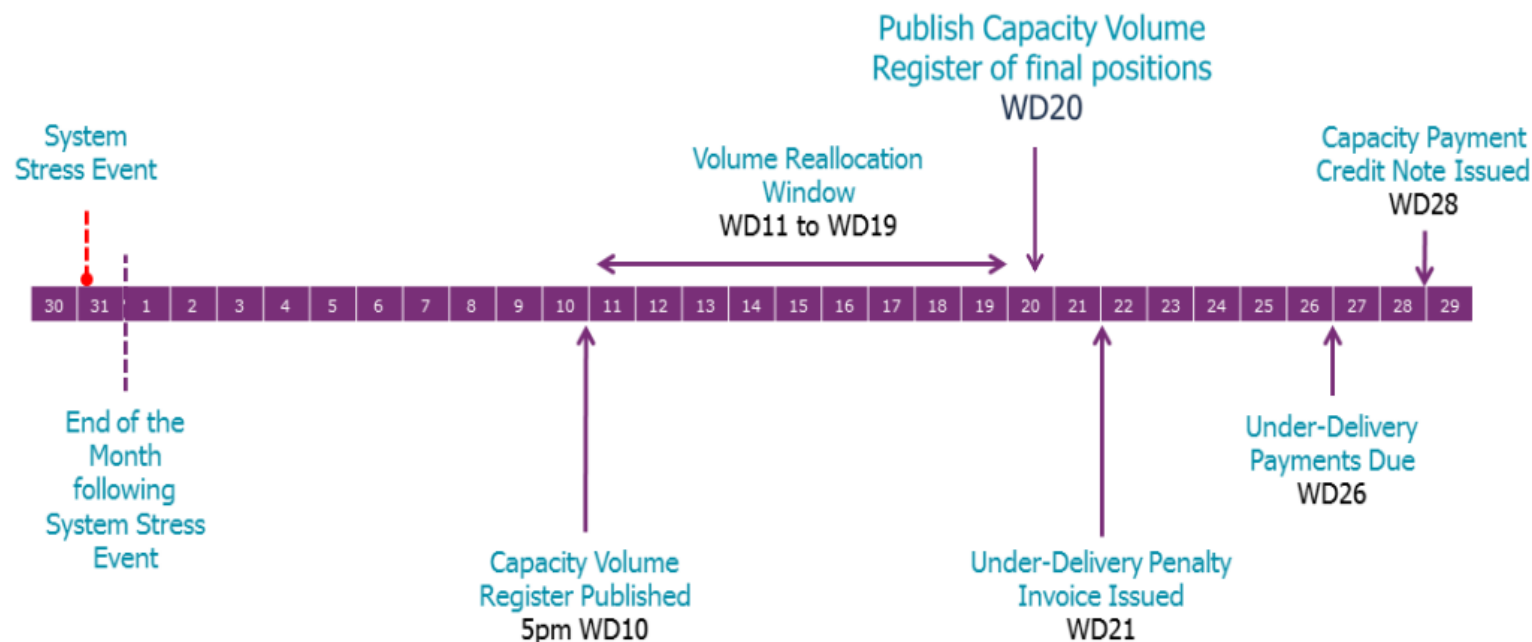
- The Capacity Volume Register (CVR) is published to provide information on each CMU's performance in relation to its obligation following a Capacity Market Stress Event and is used to support Volume Reallocation.
- It will be published every day between the 10th and 19th Working Day (inclusive) after the end of the month in which a Capacity Market Stress Event occurs. The CVR will show all Capacity Providers' final positions at the closure of the volume reallocation window on WD19.
- The new T070 'CM Stress Event Position' backing data file supports the CVR and provides all the data items that have gone into the calculation of each figure.

CVR Example -

| Settlement Date | Settlement Period | CMU Id | AACO | PTCO | SCO | RfR | ILR | LCFO Multiplier | LFCO | E | ALFCO | IOD | IUD | ACMV | AE |
|-----------------|-------------------|--------|--------|--------|-----|-----|-----|-----------------|------|--------|-------|--------|--------|------|--------|
| dd/mm/yyyy | Xx | abc_12 | xx.xxx | xx.xxx | x | xxx | x | x.xxx | | xx.xxx | x.xxx | xx.xxx | xx.xxx | x | xx.xxx |

Volume Reallocation Window

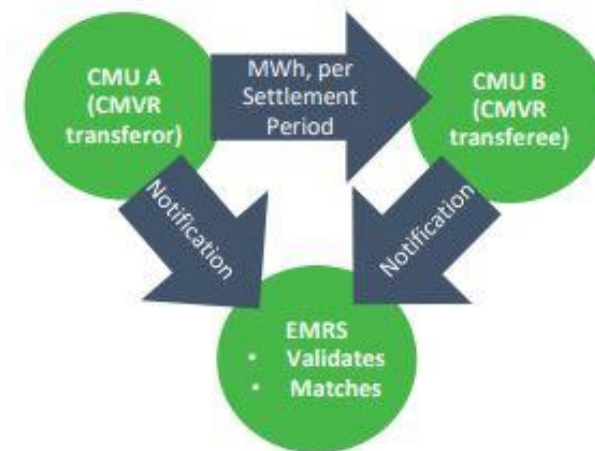
Timeline for Volume Reallocation



EMRS will calculate and issue Credit Notes for Over-Delivery as soon as practicably possible after the end of the Delivery Year

Registration for volume reallocation must be complete prior to a stress event on the DB portal against the CMU, see guidance on [EMR DB portal](#).

Volume Reallocation and Secondary Trading
Both Volume Reallocation and Secondary Trading are methods of reducing penalties for under delivery should a Capacity Market Stress Event occur. However, they are different in that Secondary Trading must be done before a Capacity Market Stress Event occurs (ex-ante), whereas Volume Reallocation can only be done between the 10th and 19th working day after the final working day of the month a Capacity Market Stress Event occurs (ex-post).



Q&A

Please submit questions using Sli.do

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Useful Information

G18 - Capacity Market Stress Event Guide -

<https://www.emrsettlement.co.uk/document/guidance/g18-capacity-market-stress-event-guide/>

NGESO website for Capacity Notifications -

<https://gbcmn.nationalgrideso.com/>

System Stress Event Template -

<https://www.emrdeliverybody.com/CM/System-Stress-Event.aspx>

System Stress Event FAQs - <https://gbcmn.nationalgrideso.com/faq>

Continuing the conversation

If you have any further questions on any of the above, please contact the below, referencing 'System Stress Event Webinar':

EMR Delivery Body

E: emr@nationalgrideso.com

T: 01926 655300

Opening hours:

9:00 – 17:00 Monday – Thursday,

9:00 – 16:00 Friday

EMR Settlement

E: contact@emrsettlement.co.uk

T: 020 7380 4333

Opening hours:

8:30 – 17:30 Monday – Friday

Electricity Settlements Company

E: info@electricitysettlementscompany.uk

Thank you for listening

Please complete feedback of the Webinar via Sli.do

Q&A

Please submit questions using Sli.do

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