

# Replacement of the Balancing Mechanism system

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**Phil Johnson**  
**Electricity Projects Transition Manager**

# Balancing Mechanism

## What is it?

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The key system used by National Grid for managing frequency and power flow on the transmission network in real time is the **BM system**



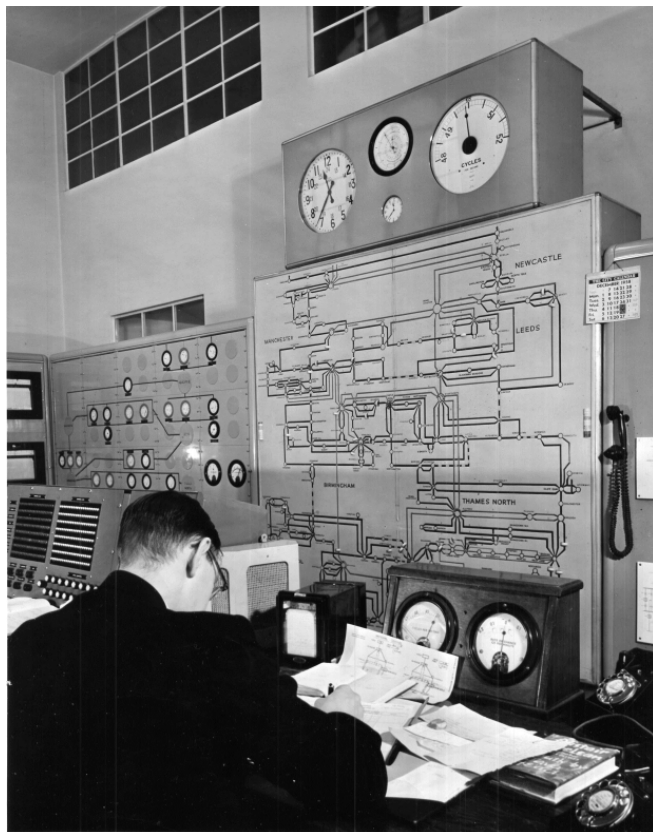
- It is used to receive Physical Notification, Parameter and Bid Offer data from Participants
- It calculates day ahead and intraday system margins by comparing Participant data with NG derived demand forecasts
- It is used to send out BOAs to control points to balance the system in real time
- It sends all Participant and BOA data to Elexon for settlement and calculation of the imbalance prices

# Balancing Mechanism

## What's being changed and why?

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**The BM system, originally developed by the CEGB, has now reached 'end-of-life' and requires replacement**



- It uses a 1960's operating system and is essentially a manual system originally developed to control a handful of coal units. It now has to handle 100s of balancing units

- A replacement EBS system based on modern architecture is replacing the BM system this Autumn, and the opportunity is being taken to modernise the despatch process

- A key implementation objective for the new system is not to change existing interfaces to industry participants



# Balancing Mechanism

## What's being changed and why?

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**The Electricity Balancing System (EBS) is commissioning this Autumn and the opportunity is being taken to introduce semi-automatic despatch**



**Operational Security:** The new system will enable frequency control to be achieved more economically

**Process Efficiency:** Manual balancing can become difficult during 'high wind'. Semi-automated despatch will provide significant improvement

**Resilience Improvement:** Removal of single point of hardware failure and rapid failover to standby system and far shorter planned downtime

**Future Platform:** The new architecture will allow complex market changes to be incorporated more easily (e.g. European Cross Border balancing)

**Real-time continuous operation of the balancing mechanism is essential to the secure operation of the power network**



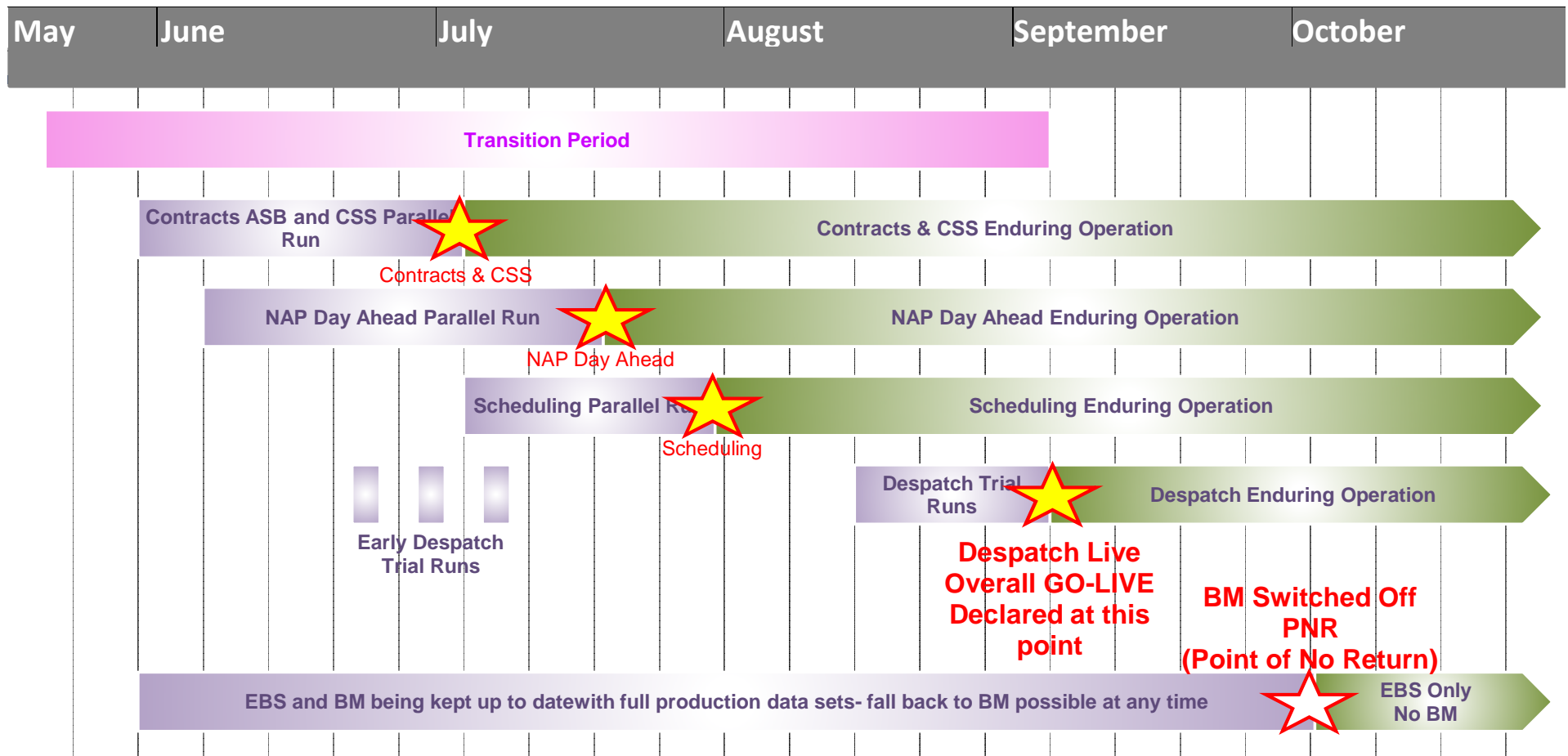
- National Grid is planning a staged approach to transferring control from the existing BM system to the new EBS system

- Day ahead, Intraday and Real time despatch facilities will be transitioned over separately

# EBS Staged Go-Live Approach



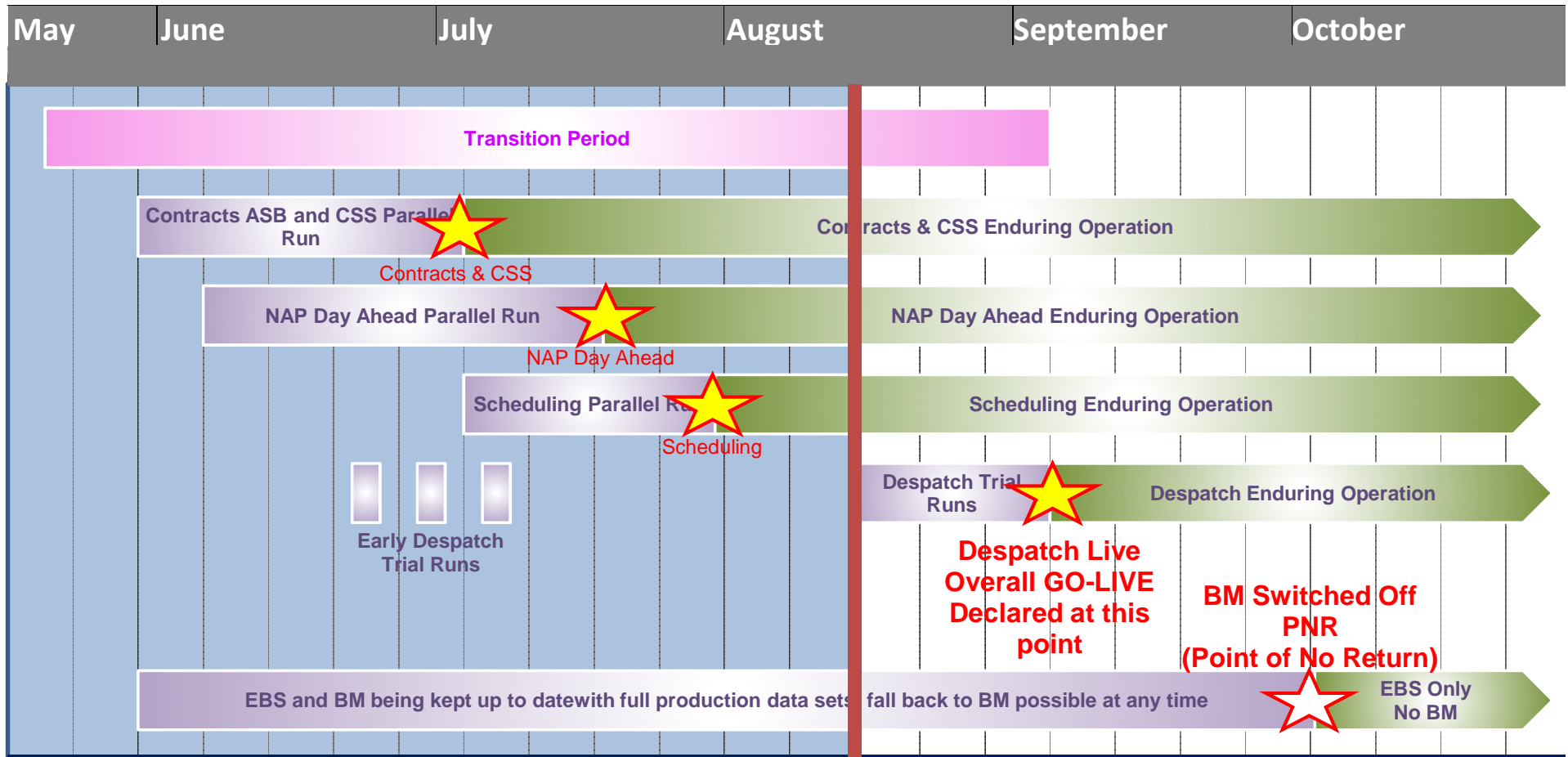
Indicative Timeline – dates subject to revision



# EBS Staged Go-Live Approach

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Indicative Timeline – dates subject to revision



**National Grid will manage the introduction of the EBS system so as to minimise impact on the operation of the Balancing Mechanism**

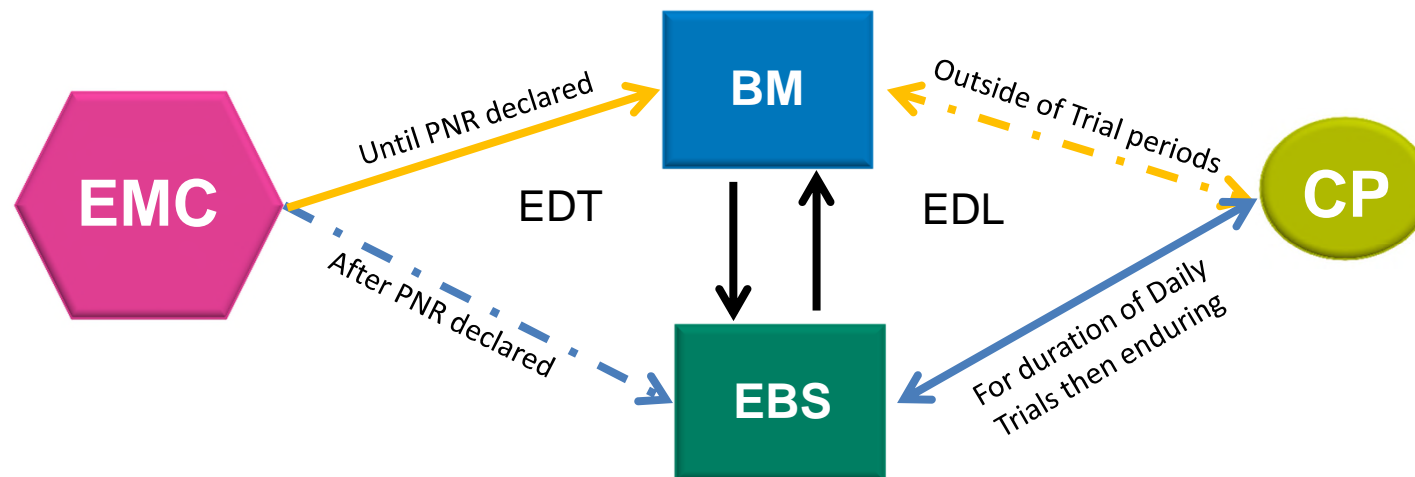


- **Day Ahead and Intraday scheduling**, you may see:
  - More refined Reserve Margins away from shoulder periods
  - Variations to Balancing Units required for energy and constraint management reasons
- **Real-time Despatch**, you may see:
  - More frequent but smaller sized BOAs issued by the automated process
  - More BOAs simultaneously issued to wind units that may share the same control point



# Electronic Data transfer connections

As per discussions at EBSIT forums, during commissioning there will be short interruptions on the electronic data transfer connections



- During the daily despatch trials EDL links used for sending BOAs to control points will be switched over from BM to EBS
- Once the EBS system is established and, after the bedding in period, the EDT links providing PN data will be switched over from BM to EBS

**National Grid will be replacing the existing BM system with the new EBS system this Autumn because it is at end of life**



- EBS system will be introduced in a phased approach in August and September
- Short interruptions to the EDL system used to issue BOAs will occur during trials but National Grid will ensure interruptions are minimised
- After Go-Live National Grid will be carefully manage the introduction of the EBS system to minimise the impact on the operation of the Balancing

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# Q&A

**[philip.johnson@nationalgrid.com](mailto:philip.johnson@nationalgrid.com)**