



ESO Operational Transparency Forum

19th August 2020

nationalgrid**ESO**

Introduction

Please ask any questions via the Q&A section in Webex and we will pick them all up at the end of the session and answer those now which we can. We may have to take away some questions and provide feedback from our expert colleagues in these areas.

These slides, event recordings and further information about the webinars can be found at the following location:
data.nationalgrideso.com/plans-reports-analysis/covid-19-preparedness-materials

Key topics for this week:

- Business continuity
- Demand review and outlook
- ESO actions
- Dynamic Containment Update
- Trading Transparency
- Ofgem Spring-Summer Review

Questions from last week

Q: Is Power Available something which is optional for wind generators to provide to NGENSO, or mandatory?

A: The PA signal is mandatory for all connections covered under Grid Code. It was introduced by Grid Code modification GC0063 . For all PPMs with a Completion Date on or after 1st April 2016 and a BCA, BEGA or BELLA with NGENSO a Power Available signal is specified in the operational metering requirements.

Q: Is the Mandatory FR utilisation of wind published in the same way as conventional providers?

A: Yes, through our utilisation reports

Q: How will we receive the ABSVD in relation to ODFM instructions? Will it appear in the Credited Energy Volume calculation?

A: Yes, it will flow through as part of the new component in the calculation

Q: It's been asked before, but please do you have some update on ESO readiness for TERRE?

A: No update

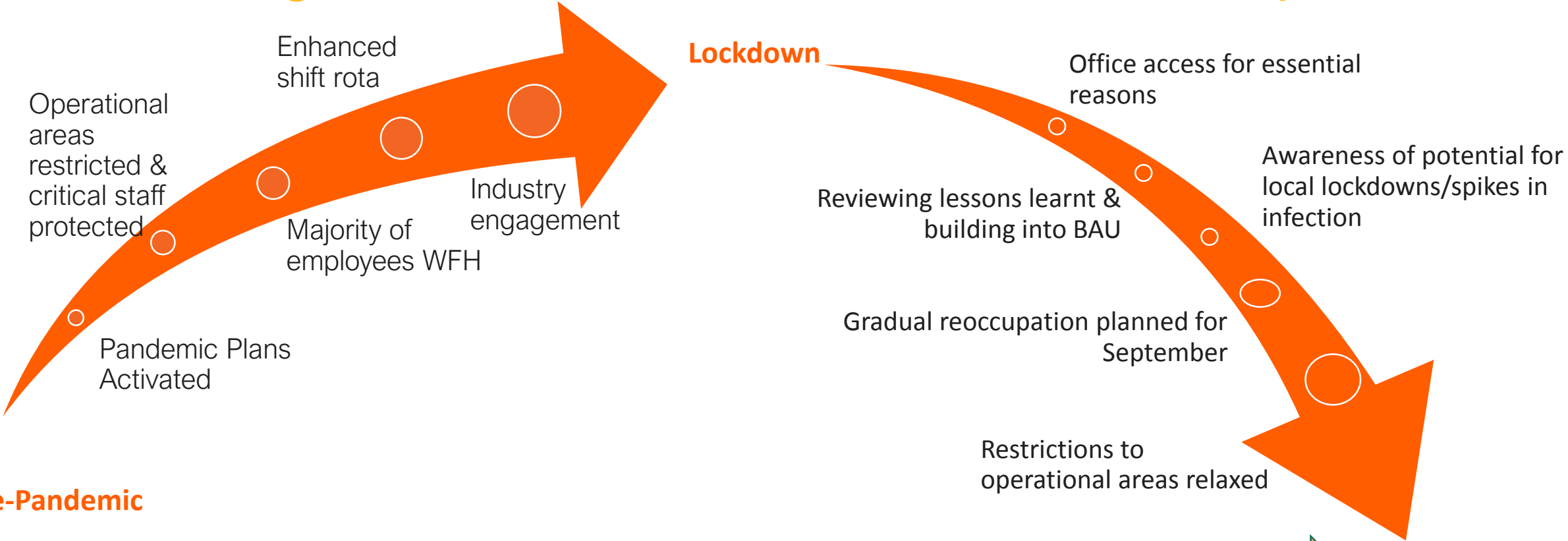
Q: Can you share any information into meter types/manufacturers that are compliant for 20Hz metering? Thanks

A: We will follow this up through Dynamic Containment engagement

Q: When will you share information regarding the Arenko trial

A: We have published our latest findings of the reserve from BM storage trial

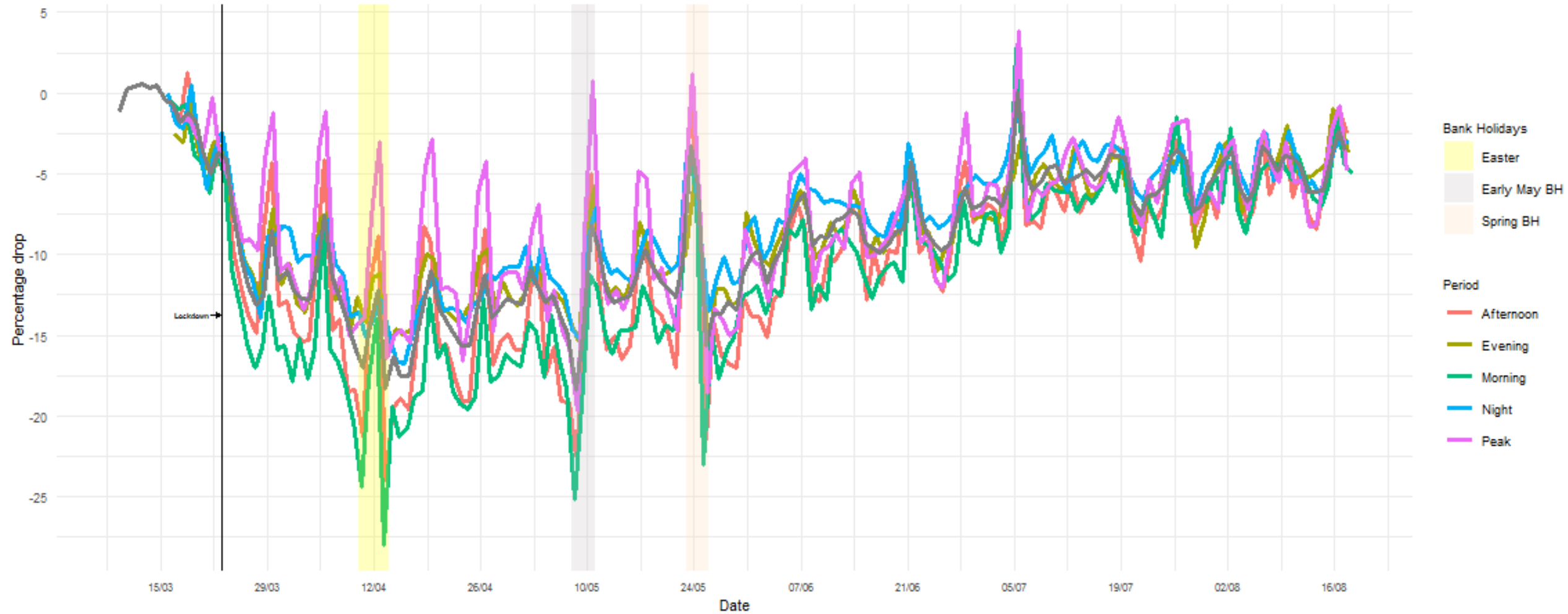
Protecting Critical Staff to maintain Critical Operations



Identify & respond to system operability challenges

ESO % change in demand relative to pre COVID

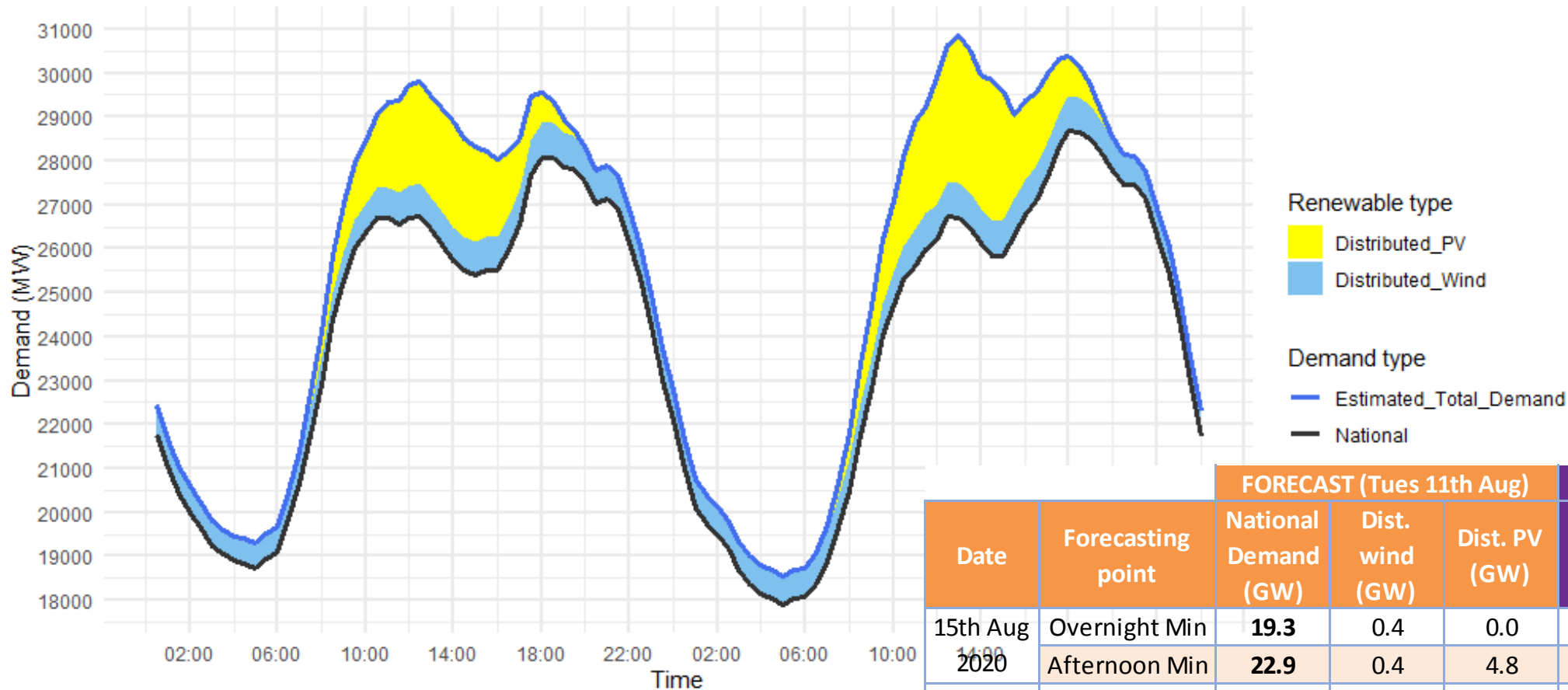
ESO % change in demand relative to pre-Covid expectation



In the **last 7 days**, average overall demand drop of **4.7%**

Demand | Last Weekend Outturn

ESO National Demand outturn 15th & 16th August 2020

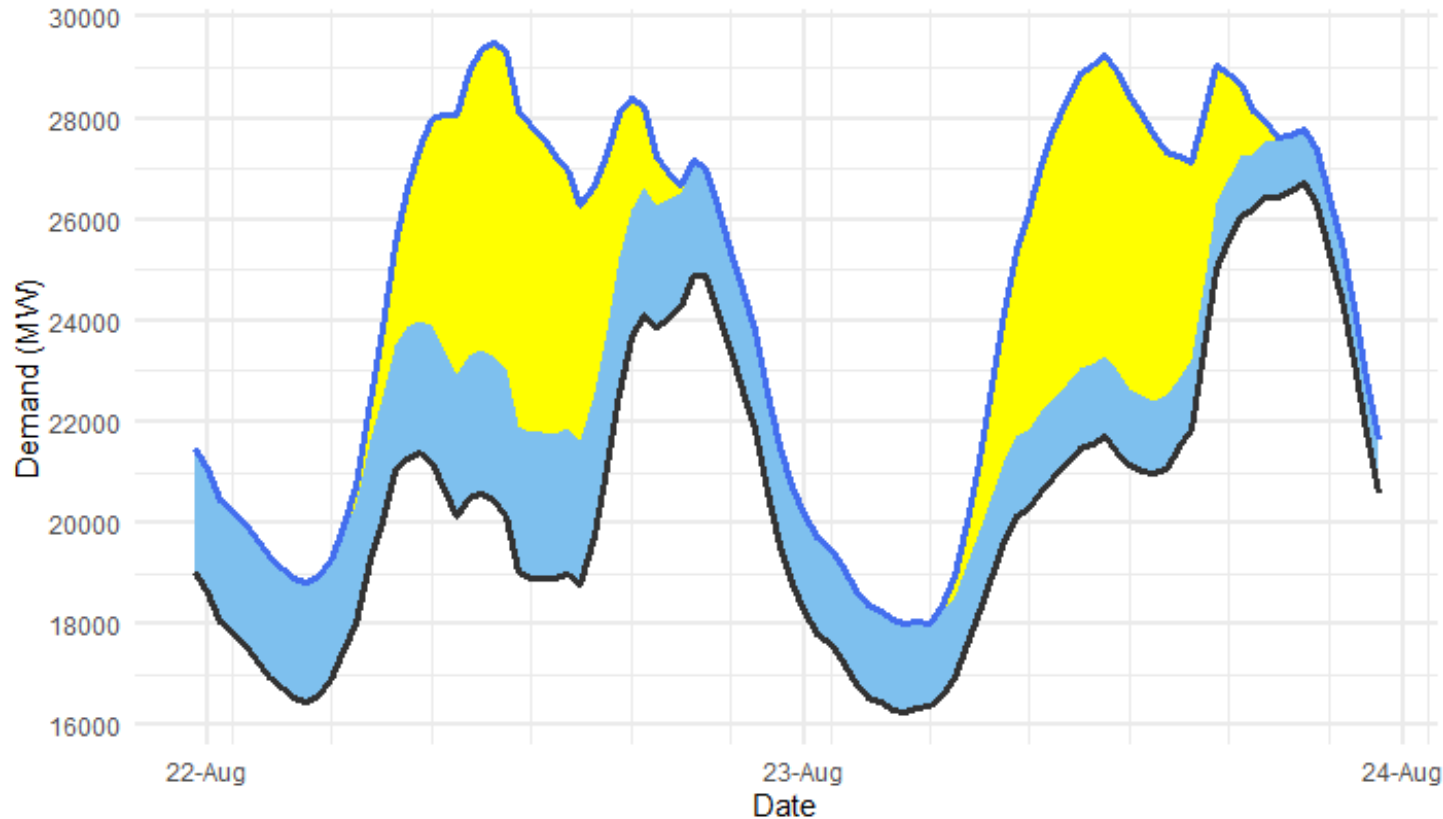


Date	Forecasting point	FORECAST (Tues 11th Aug)			OUTTURN		
		National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
15th Aug 2020	Overnight Min	19.3	0.4	0.0	18.7	0.6	0.0
	Afternoon Min	22.9	0.4	4.8	25.4	0.8	2.1
16th Aug 2020	Overnight Min	18.1	0.6	0.0	17.9	0.7	0.0
	Afternoon Min	22.3	0.8	5.5	25.8	0.8	3.2

Demand | Forecast for this Weekend

ESO Demand forecast weekend 22nd & 23rd Aug 2020

based on the current government policies in relation to the pandemic and on the latest weather forecast



Renewable type

- Distributed_PV
- Distributed_Wind

Demand type

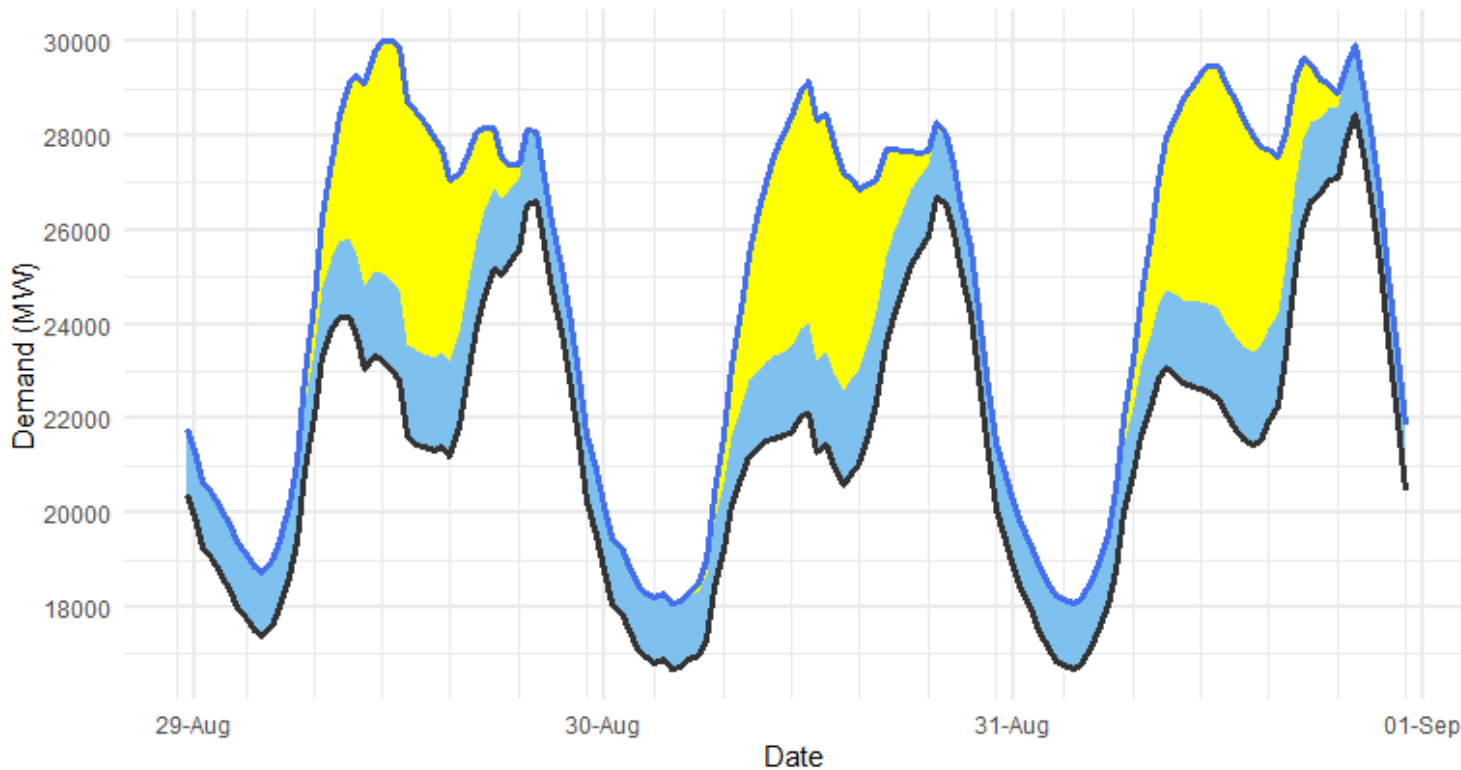
- Estimated_Total_Demand
- National

		FORECAST (Tues 18th Aug)		
Date	Forecasting point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
22 August 2020	Overnight Min	16.5	2.4	0.0
	Afternoon Min	18.8	2.8	4.7
23 August 2020	Overnight Min	16.3	1.7	0.0
	Afternoon Min	21.0	1.4	5.2

Demand | August Bank Holiday weekend

ESO Demand forecast Aug Bank Holiday weekend 29 to 31 Aug 2020

based on the current government policies in relation to the pandemic and on the latest weather forecast



FORECAST (Tue 18th Aug)

Date	Forecasting point	National Demand (GW)	Dist. wind (GW)	Dist. PV (GW)
29th Aug 2020	Overnight Min	17.4	1.4	0.0
	Afternoon Min	21.2	2.0	3.9
30th Aug 2020	Overnight Min	16.7	1.4	0.0
	Afternoon Min	20.6	2.0	4.6
31st Aug 2020	Overnight Min	16.7	1.4	0.0
	Afternoon Min	21.4	2.0	4.6

Renewable type

- Distributed_PV
- Distributed_Wind

Demand type

- Estimated_Total_Demand
- National

Transparency | Why do we need Dynamic Containment?

Current system operability needs

Currently, the electricity system is experiencing lower inertia and larger, more numerous losses than ever before.

Faster acting frequency response products are needed because system frequency is moving away from 50Hz more rapidly as a consequence of imbalances. This is evident in the rate of change of frequency (RoCoF) and illustrated by the interaction of size of imbalance and inertia as show below:

$$\text{RoCoF}\left(\frac{\text{Hz}}{\text{s}}\right) = \frac{50}{2} \times \frac{\text{Imbalance (MW)}}{\text{Inertia (MVA.s)}}$$

As a system operator we need to manage both the absolute change in frequency and the RoCoF.

The variables we can control in the RoCoF equation are the size of imbalance (or losses) and the level of inertia.

- Managing low inertia is a key element of our 2025 zero carbon ambition. Our Stability pathfinder work is looking to create markets for inertia.
- The number of significant losses and their absolute size will increase as we welcome new interconnection and offshore wind onto our system.

Want to find out more?

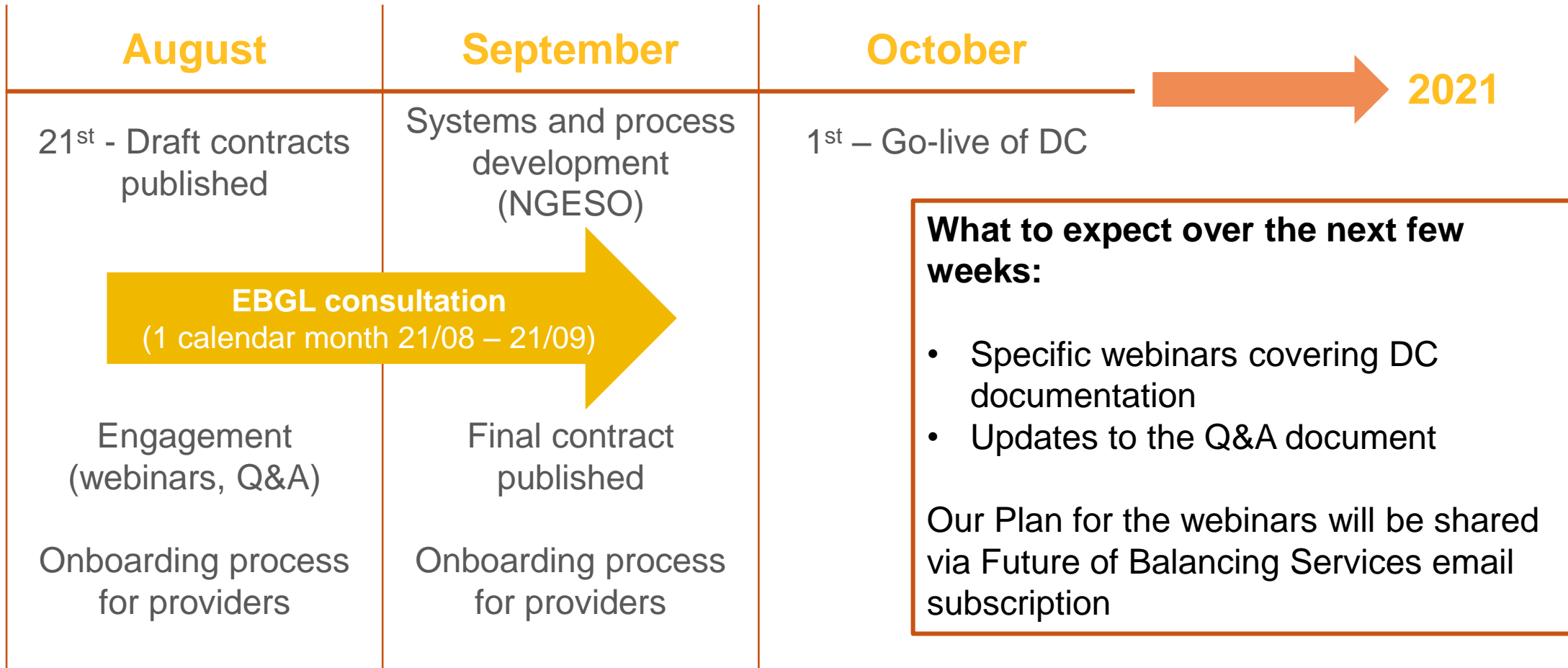
<https://www.nationalgrideso.com/industry-information/balancing-services/frequency-response-services/dynamic-containment>

Transparency | Dynamic Containment

	Soft launch (autumn)	Full delivery (2021 – date TBC)
Platform	Manual process	TBC
Procurement	Day ahead	Day ahead
Products	LF	HF + LF procured separately
Period	24-hour contract	EFA block (potentially settlement period)
Volume	Up to 500MW of LF	up to 1000MW of both HF and LF
Allow stacking?	Not with existing response/reserve products	Yes – with the new suite of frequency response products, timescales TBC

Transparency | Dynamic Containment

Delivery plan

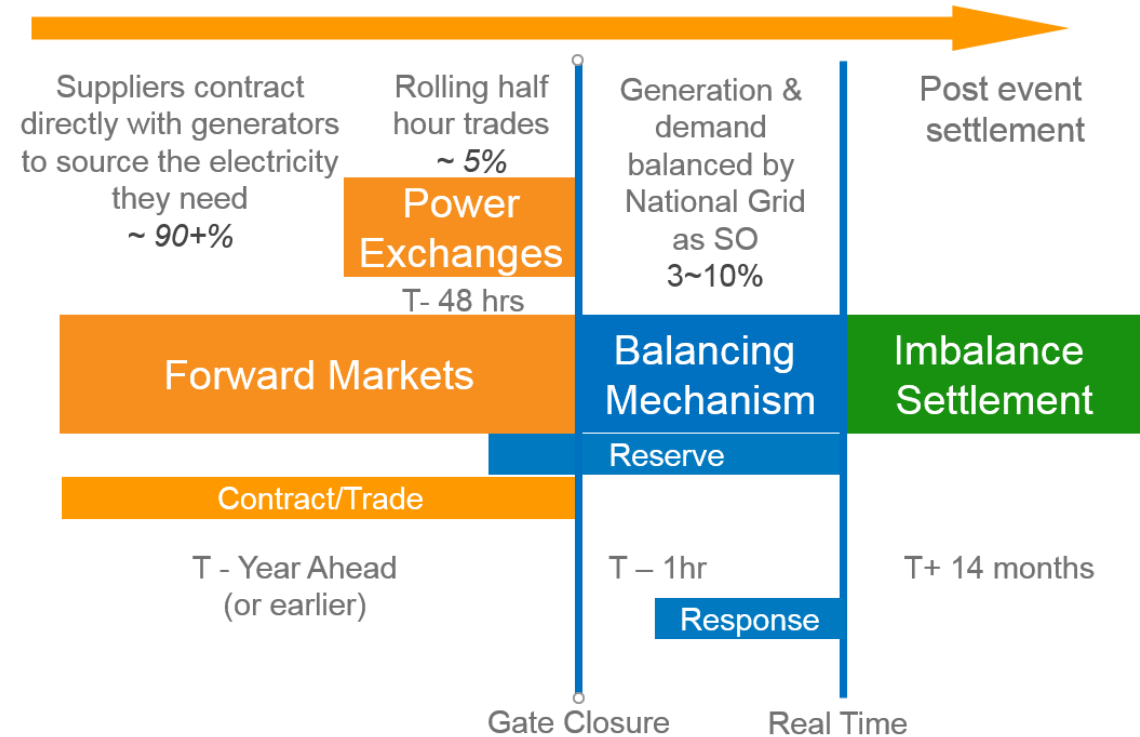


Website: <https://www.nationalgrideso.com/industry-information/balancing-services/frequency-response-services/dynamic-containment>

Email: box.futureofbalancingservices@nationalgrideso.com

Transparency | Trading in NGENSO

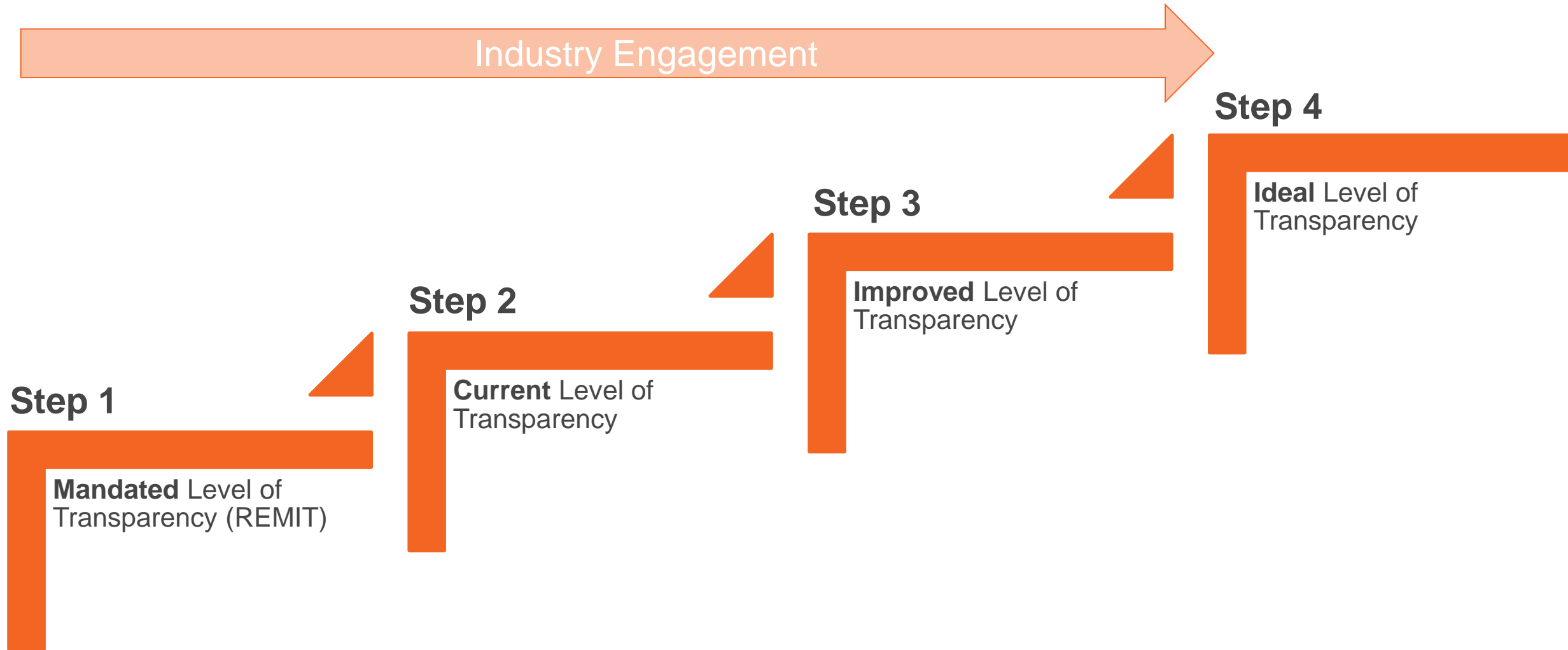
- Work closely with Control room to identify system and energy requirements
- Trading Team operate in forward market only and do not take actions within the BM
- Trade usually between 4 hours and 24 hours ahead of BM
- Conduct bilateral 'schedule 7 trades' with market counterparties
- Also enact option contracts alongside trades
- Reasons for trading:
 - Access to units not available in BM
 - Displace BM units to reduce operation costs
 - Increase competition and options to resolve system constraints



Transparency | Current Trading Visibility

What?	When?	Where?
Schedule 7A Trades <ul style="list-style-type: none"> • Volume • Date and Settlement Periods • Price and Cost • SO Flagged 	Within 10 minutes upon trade entry (99.9% reliability)	https://trades.nationalgrid.co.uk/ Extranet BMRS <i>Data Portal will also be similar to Trading Website</i>
Some contracts <ul style="list-style-type: none"> • Volume • Date and Settlement Periods 	Before 11am day-ahead market outturn	https://www.nationalgrideso.com/industry-information/balancing-data/data-finder-and-explorer
SEL Reduction Contracts (backdated to 01/07/2020)	Immediately upon contract agreement	Data Portal: https://data.nationalgrideso.com/ancillary-services/super-stable-export-limit-contract-enactment
Trading requirements	Approx. 4-12 hours before delivery	Via e-mail/phone directly to those who can meet the locational requirement

Transparency | NGENSO and Trading Roadmap



Transparency | What is most valuable to you?

More Detail

Present the current trades but in greater detail

- Include name of Counterparty
- Include name of BMU
- Include system reason (thermal/voltage/margin)

Better Presentation

Improve the presentation of the current data

- Have list of trades with start and end times, instead of Volume-by-SP
- Have historic trades downloads available
- Have data available in different formats
- In Universal Time format

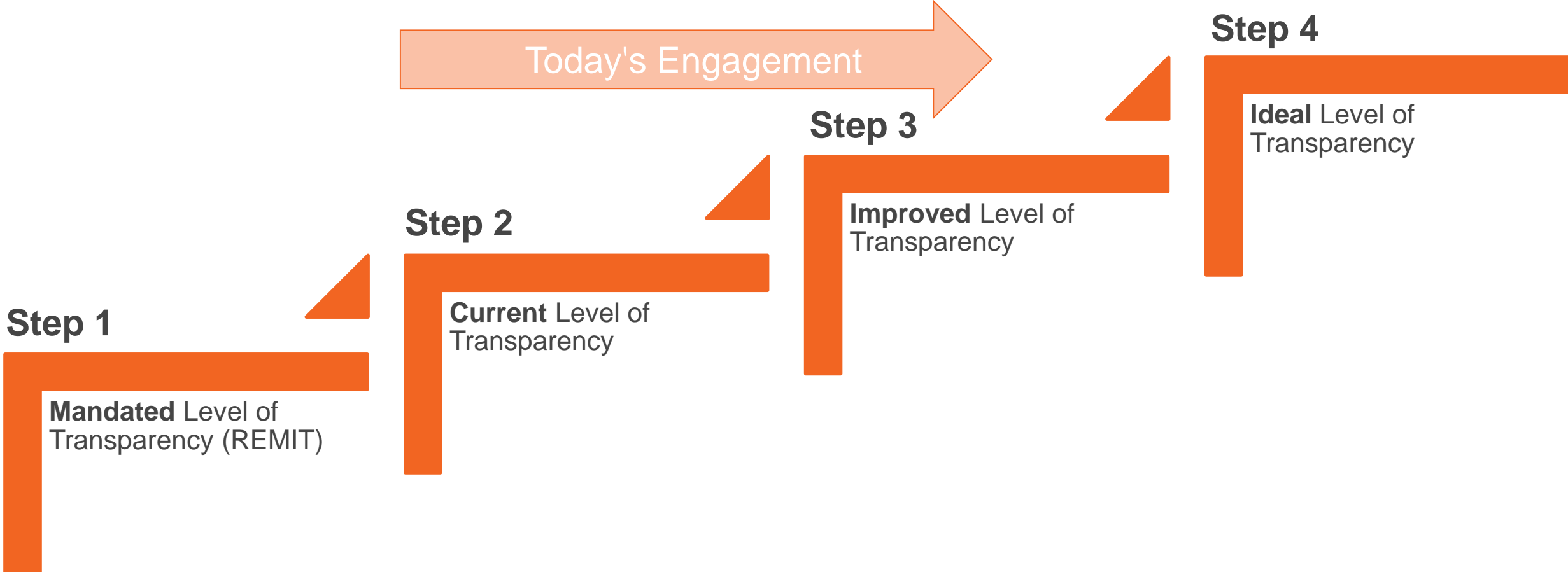
More information

Publish more of the actions taken by Trading

- Include balancing service contracts (used for solving thermal/voltage constraints)
- Include SO-SO actions
- Include SEL reduction contracts (super SEL)
- Include upcoming requirements

Transparency | Prioritising our efforts

- What should we concentrate on first?



Transparency | Example of Improved Visibility of Current Trades

CP	NG Buys/Sells	MW	BMU	Delivery Start Time	Delivery End Time	Price (£)	System/Energy	Trade Reason 1	Trade Reason 2	Total Cost (£)	Total Volume (MWh)
Counterparty A	Buy	250	ABCD-1	08/08/2020 23:00	09/08/2020 08:00	45.00	System	Voltage	N/A	£101,250	1,170
CP	NG Buys/Sells	MW	BMU	Delivery Start Time	Delivery End Time	Price (£)	System/Energy	Trade Reason 1	Trade Reason 2	Total Cost (£)	Total Volume (MWh)
Counterparty B	Contract	220	EFGH-1	08/08/2020 23:00	09/08/2020 08:00	£40.00	System	Voltage	N/A	£79,200	1,980


*Suggestions to change in visual format

Screenshots of ESO Trading Data in current format






Outcome system services
Find out about contracted and reactive energy volumes and data.

- Reactive energy volumes and data (5)
- Contracted energy volumes and data (33)
- Fixed price and index-linked contract volumes (86)**
- Fixed price and index-linked contract volumes (past) (37)

Fixed price and index-linked contract volumes

Search by name 

Published Name

24 Jul 2020	 24 Jul 2020 Contract Volume
20 Jul 2020	 20-07-2020_ContractVolume
5 Oct 2019	 05/10/2019 Contract Volume
27 Sep 2019	 27 Sep 2019 Contract Volume
25 Sep 2019	 25 Sep 2019 ContractVolume

Upcoming Trades

Updated: 12:50 23/02/2020 GMT

Settlement Date	Settlement Period	ID	Cost	Volume	Price	SO Flag
23/02/2020	29	1	-£630	-75	8.4	T
23/02/2020	29	2	-£203.25	-25	8.13	T
23/02/2020	29	3	-£628	-50	12.56	T

Thank you for listening

Please take the time to fill out our feedback survey sent after this presentation

Trading Transparency survey:

https://nationalgrideso.fra1.qualtrics.com/jfe/form/SV_d0epwvZTTsXxXHT

nationalgrideso.com

National Grid ESO, Faraday House, Warwick Technology Park,
Gallows Hill, Warwick, CV346DA

nationalgridESO

Transparency | Ofgem Open Letter

Ofgem on 17 August 2020 published an Open letter - [here](#)

"The GB electricity system has seen an increase in balancing costs this spring and summer 2020, coinciding with the onset of the COVID-19 pandemic. Specifically, the period from March to July 2020 has seen balancing costs of £718 million, which is 39% higher than the ESO expected costs would look like in this period. These costs increased at the same time as nationwide lockdowns changed consumer electricity consumption behaviour and reduced industrial activity. Moreover, some of this period saw high level of renewables output, which required the ESO to take a large number of actions to balance the system and ensure system operability.

This letter sets out our intention to evaluate the high balancing costs on the GB electricity system this spring and summer and identify lessons that need to be explored further in order to reduce costs to consumers going forward. This letter also describes how we intend to engage with stakeholders in this process."

Three main areas of focus

1. Long term preparedness
2. Crisis management and response
3. Lessons for the future

Ofgem will be seeking evidence from the ESO during August before running virtual round tables in early September before finishing the review in October.

To participate please review the letter and contact Ofgem on esoperformance@ofgem.gov.uk

Q&A

After the webinar, you will receive a link to a survey. We welcome feedback to understand what we are doing well and how we can improve the event ongoing.

Please ask any questions via the Q&A section in Webex and we will try to answer as many as possible now

Please continue to use your normal communication channels with ESO

If you have any questions after the event, please contact the following email address:

box.NC.Customer@nationalgrideso.com

