Markets Forum
28th September 2022

nationalgridESO

Welcome

Karen Thompson-Lilley
Commercial Codes Manager

Agenda

Time	Agenda
09:15-10:00	Arrival
10:00-10:05	Welcome
10.05-10.20	Introduction and welcome from Head of Markets
10:20-11:20	Short-term priorities: Approach to Winter 2022
11.20-11.35	Break
11:35-12:30	Medium-term priorities: Updates on new projects such as demand flexibility and upward firm regulating reserve
12:30-13:25	Lunch
13:25-14:10	Long-term priorities: Net Zero Market Reform
14.10-14.15	Close to online delegates.
14:25-16:00	Breakout Collaborative Sessions
16:15-16:45	Summary, Q&A and Close
17:00-18:30	Networking event

Introduction and Welcome

David Wildash
Head of Markets

Approach to Winter 2022

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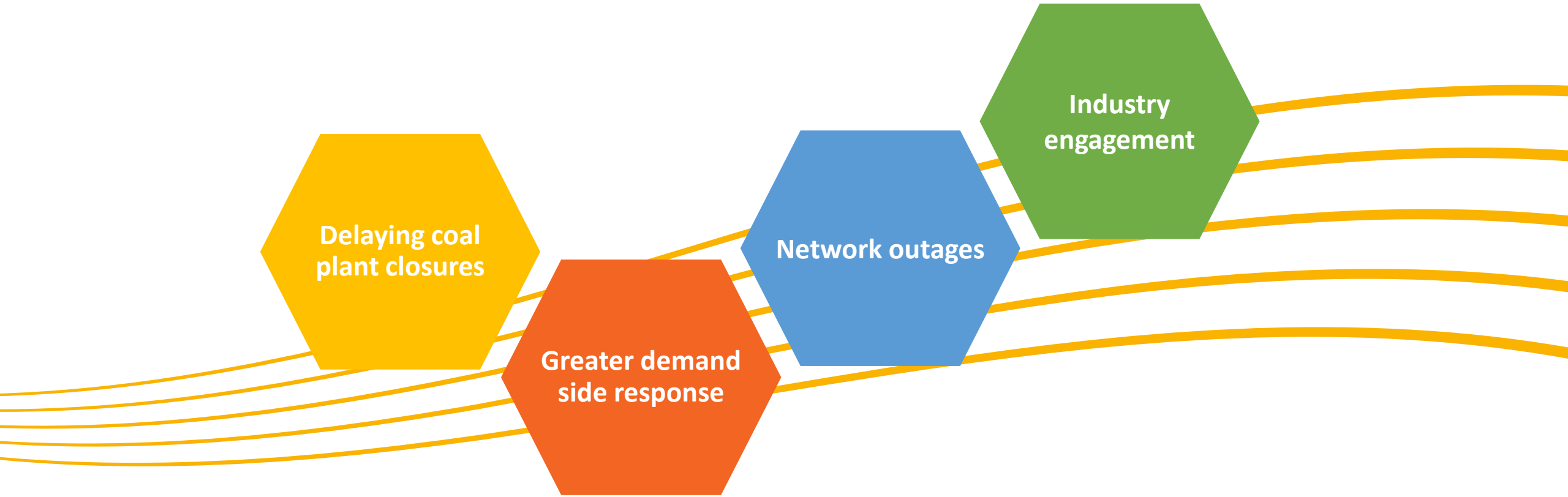
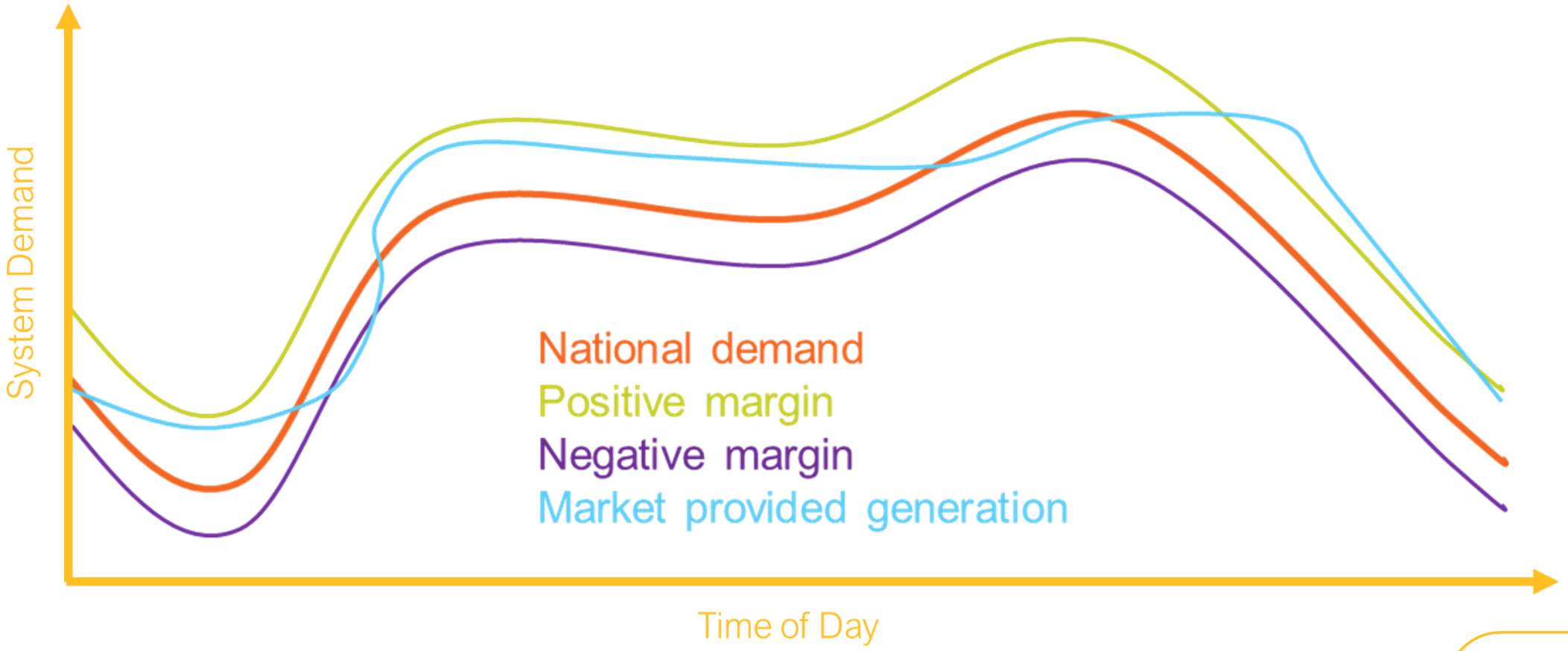
Short term outlook

Maintain safe and secure operation of the electricity system through Winter



Operational risk to manage

There is a risk that the gap between Market Provided generation and Positive margin is unable to be filled using our current suite of tools.



Order of Action (as presented 17 August OTF)

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Everyday Actions	Order	Comments
All deliverable Offer action on all available BM participants	#1 based on Cost	Scheduled at Day Ahead, action taken in real time – some offers may not be available due to network congestion
Issue warming instructions to cold BM participants	#1 based on Cost	Scheduled at Day Ahead, action taken in real time
Buy energy from the continental Europe	#1 based on Cost	Scheduled at Day Ahead, action taken from Day Ahead to 4hrs ahead of time by ESO Traders
Reconfigure CCGTs to increase available energy (e.g. sync additional GTs)	#1 based on Cost	Scheduled at Day Ahead, managed within the control timescales within day
SO-SO trade in cost order	#1 based on Cost	SO to SO trade with other SO in Europe/Ireland
Reconfigure Transmission Network to reduce network congestion, including: Change substation running arrangements, Tap Quad Boosters, to control flow of energy and Making use of enhanced ratings	Normal operating practice – no cost	Changing daily operating conditions can result in different network configurations to reduce congestion

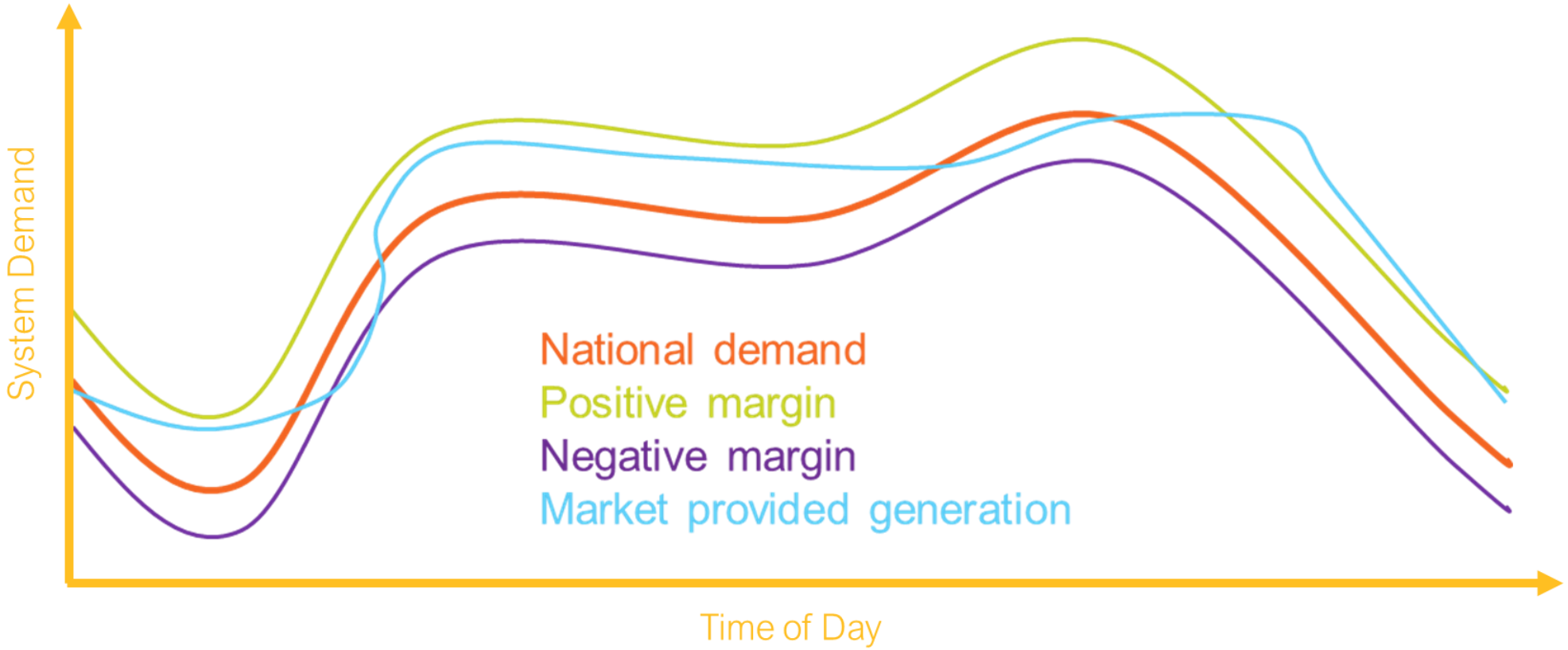
Enhanced Actions (if everyday actions are insufficient)	Order	Comments
Recall TO assets from outage to increase network availability and increase available capacity	#2	Anytime through to control room timescales, depending on ERTS (Emergency Return to Service) time
Issue an Electricity Margin Notice (EMN)	#3	Request to market to increase available energy or reduce demand. Likely to be issued at Day Ahead. Updated regularly
Taking additional actions obtained through EMN	#4	Managed in real time
A Capacity Market Notice (CMN) is automatically triggered to alert CM participants	#5	Driven by calculation of Market data at 4 hours ahead of real time

Emergency Actions	Order	Comments
Issue a High Risk of Demand Reduction (HRDR) system warning	#6	Warning network operators of high likelihood of demand control. Further request to market to increase available energy or reduce demand. Closer to real-time than ENM
Emergency Assistance (EA) request to other SO	#7	Real-time action. Only applicable if capacity is available on interconnectors
Emergency Instruction (EI) to other SO	#8	
Issue Demand Control Imminent (DCI) system warning	#9	If possible, this system warning will be issued 30 minutes prior to demand control. Warning to network operators
OC6 demand control instructions to DNOs	#10	This could be via voltage control or demand control (disconnecting customers)

Sometimes operational circumstances and rapidly evolving scenarios will mean that we take options out of this order

Mitigating the risk

Use Winter Contingency Contracts and Demand Flexibility Service to fill the gap between the Market Provided Generation and Positive Margin



Combined these contingency measures represent over 3GW of generation and demand reduction

Mitigating the risk: Winter Contingency Contracts

Name	Volume	Date
West Burton A	2 x 400MW	1 Oct 2022 – 31 Mar 2023
Drax	2 x 570MW	1 Oct 2022 – 31 Mar 2023
Ratcliffe	1 x 480MW	Nov 2022 – 31 Mar 2023

£340m to £395m subject to the procurement and use of the coal

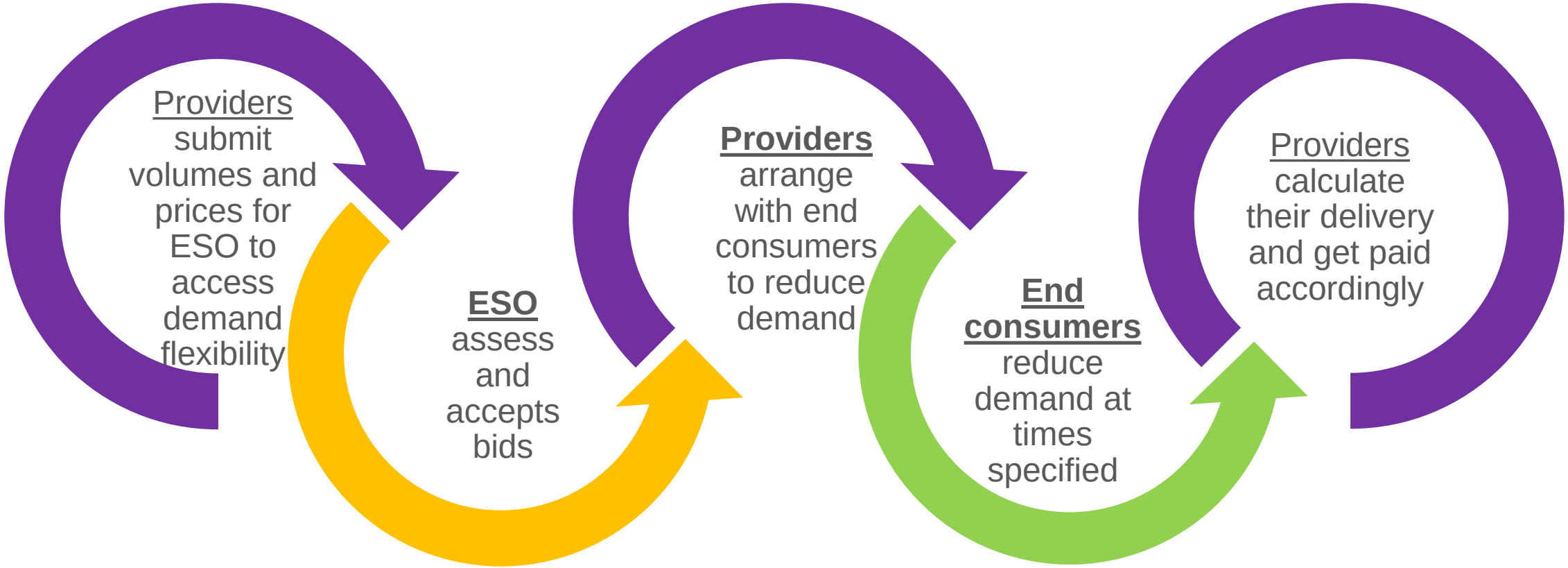
Cost recovered through BSUoS between 01/10/22 and 31/03/23 with cost spread equally between these days

The units contracted will not be available to the open market and will only be dispatched at the request of ESO

- Dispatch via Balancing Mechanism (BM) or trade with a price of £0/MWh and system flagged.
- Post event, ESO will withdraw BOA and replace through BSAD with price of £99,999/MWh

Market will be informed of warming and dispatch instructions through normal channels

Mitigating the risk: Demand flexibility service



Join the demand flexibility service breakout this afternoon to find out more

Order of Action: Winter 22

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Everyday Actions	Order	Comments
Reconfigure Transmission Network to reduce network congestion, including: Change substation running arrangements, Tap Quad Boosters, to control flow of energy and Making use of enhanced ratings	Normal operating practice – no cost	Changing daily operating conditions can result in different network configurations to reduce congestion
Review and refine reserve requirement within day dependent on system conditions	Normal operating practice – no cost	Changing system conditions can relieve requirements for reserve or increase requirements. This canchange at any time as the conditions change.
All deliverable Offer action on all available BM participants	#1 based on Cost	Scheduled from Day Ahead, action taken in real time – some offers may not be available due to networkcongestion
Issue warming instructions to cold BM participants	#1 based on Cost	Scheduled from Day Ahead, action taken in real time
Buy energy from continental Europe	#1 based on Cost	Scheduled from Day Ahead, action taken from Day Ahead to 4hrs ahead of time by ESO Traders
Reconfigure CCGTs to increase available energy (e.g.sync additional GTs)	#1 based on Cost	Scheduled from Day Ahead, managed within the control timescales within day
SO-SO trade in cost order	#1 based on Cost	SO to SO trade with other SO in Europe/ Ireland

Enhanced Actions (if everyday actions are insufficient)	Order	Comments
Recall TO assets from outage to increase network availability and increase available capacity	#2	Anytime through to control room timescales, depending on ERTS (Emergency Return to Service) time
Plan use of Emergency Assistance (EA) from other SO	#3	Enacted close to real-time. Only applicable if capacity is available on interconnectors. EA can be withdrawn at any time
Instruct Demand Flexibility product	**#4**	**Decision made at timescales as determined by product created (instruction at 24 hours)**
Instruct Winter Contingency Units	**#5**	**Decision made at timescales as determined by dynamic parameters (warming at 12-48hrs)**

Emergency Actions (if enhanced actions are insufficient)	Order	Comments
Emergency Instruction (EI) to other SO	#6	
OC6 demand control instructions to DNOs	#7	This could be via voltage control or demand control (disconnecting customers)
Recommend to BEIS to implement ESEC	#8	Ongoing conversations prior to this so all parties would be aware of risk

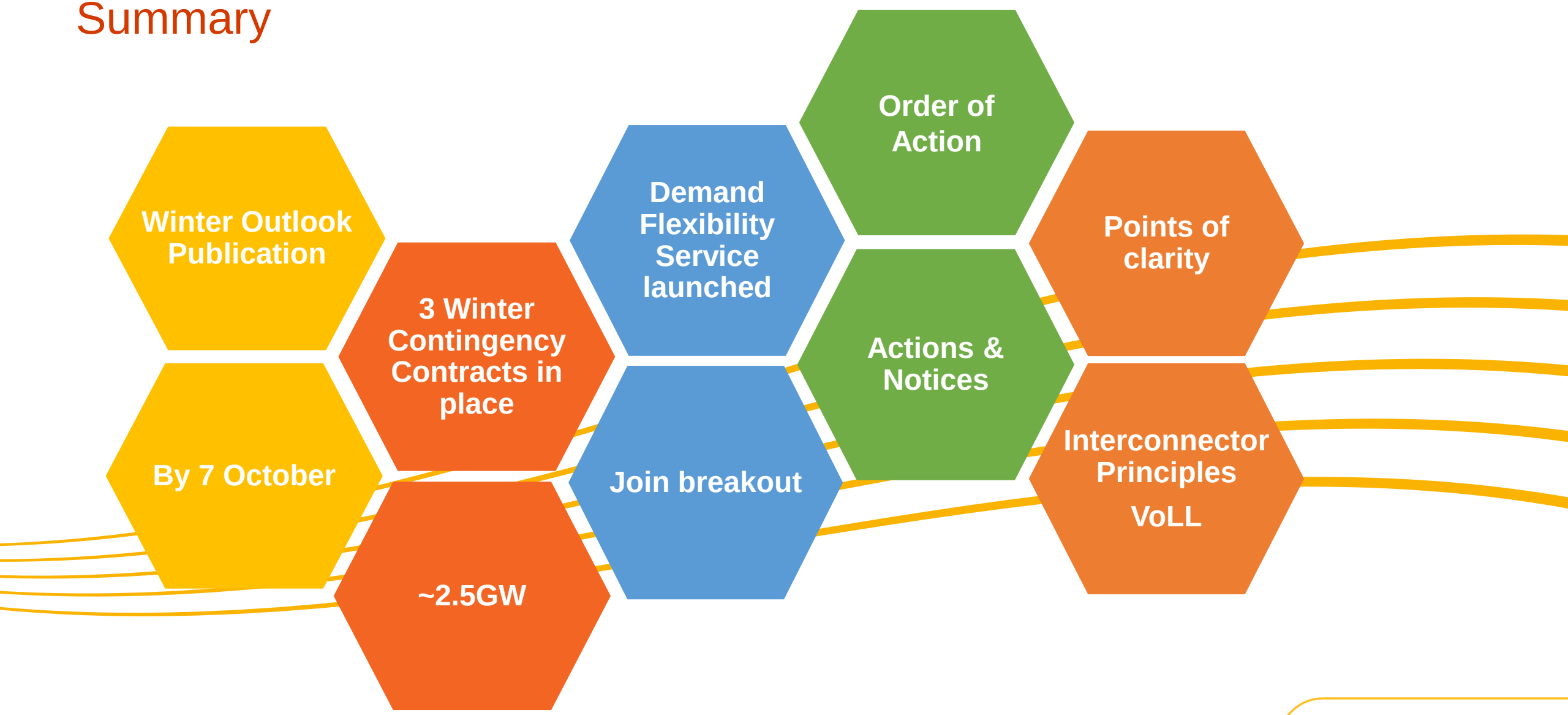
Notices are issued at any time as required	Comment
Issue Electricity Margin Notice (EMN)	Request to market to increase available energy or reduce demand. Likely to be issued at Day Ahead. Updated regularly
Issue a High Risk of Demand Reduction (HRDR) system warning	Warning network operators of high likelihood of demand control. Further request to market to increase available energy or reduce demand. Closer to real-time than ENM
Issue Demand Control Imminent (DCI) system warning	If possible, this system warning will be issued 30 minutes prior to demand control. Warning to network operators
AUTOMATICALLY TRIGGERED: A Capacity Market Notice (CMN) is automatically triggered to alert CM participants	Driven by calculation of Market data at 4 hours ahead of real time

Points of clarification

Interconnector Principles

Value of Lost Load (VoLL)

Summary


Winter Outlook Publication
By 7 October
3 Winter Contingency Contracts in place
~2.5GW
Demand Flexibility Service launched
Join breakout
Order of Action
Actions & Notices
Points of clarity
Interconnector Principles
VoLL

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Q&A

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Break
11.20-11.35