



**Interactive webinar:
How can we empower consumers to
participate in a flexible energy system?**

The session will start at **10:32**.

Please turn your camera **off** and **mute**
your microphone.

The plenary session will be **recorded**.

Please post questions on **sli.do** using
code **#ESOconsumer**

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Welcome

Laura Parkes

Consumer Strategy Manager

Welcome & Agenda

Focus areas to empower consumers in flexible energy system

Getting to 2035

Net Zero Market Reform

Consumer Flexibility

Facilitating Distributed Flexibility

Breakout

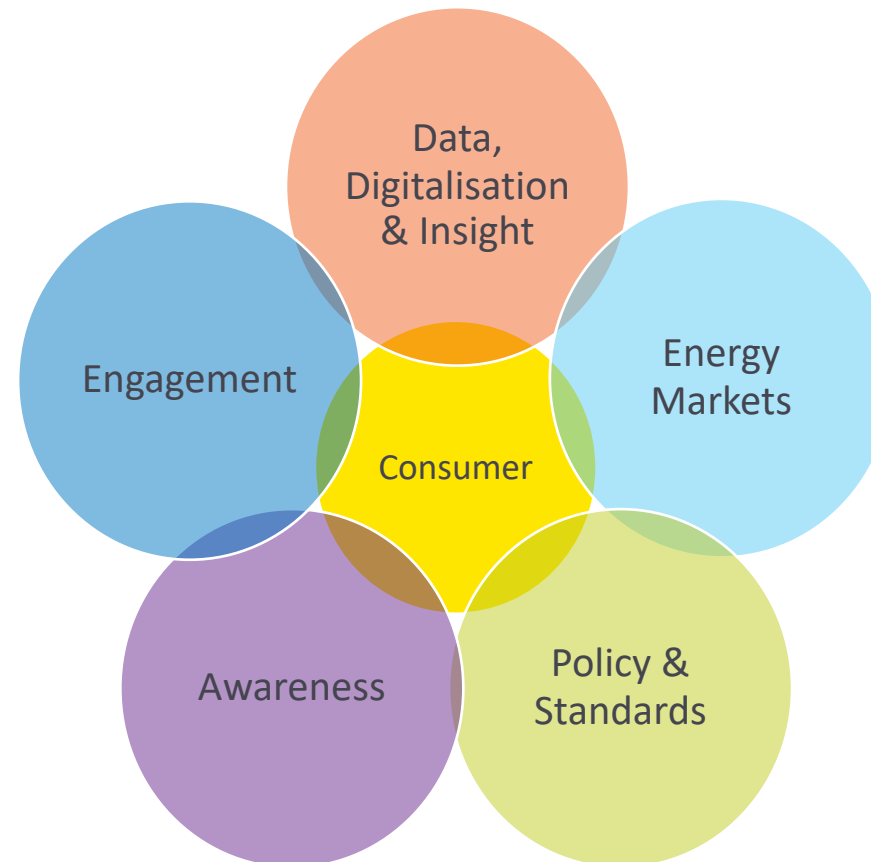
Questions

Wrap up & next steps

Five focus areas for the energy ecosystem to empower consumers to participate in a flexible energy system

Consumers are fundamental to the energy transition

Build understanding how we can work together to drive change



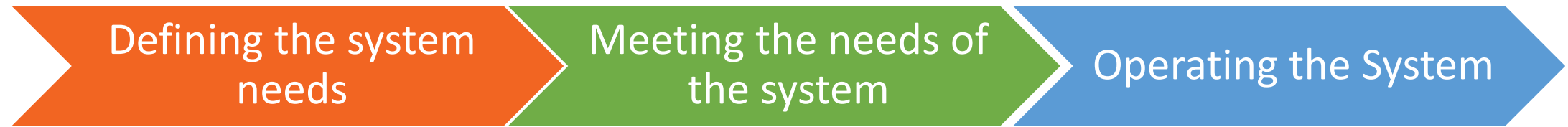


Getting to 2035

Matt Magill

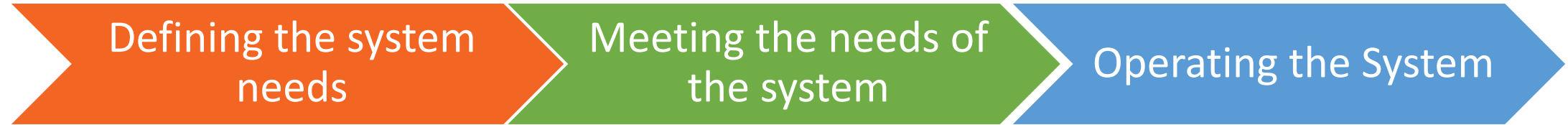
*Zero Carbon Operation Senior
Manager*

Getting to 2035

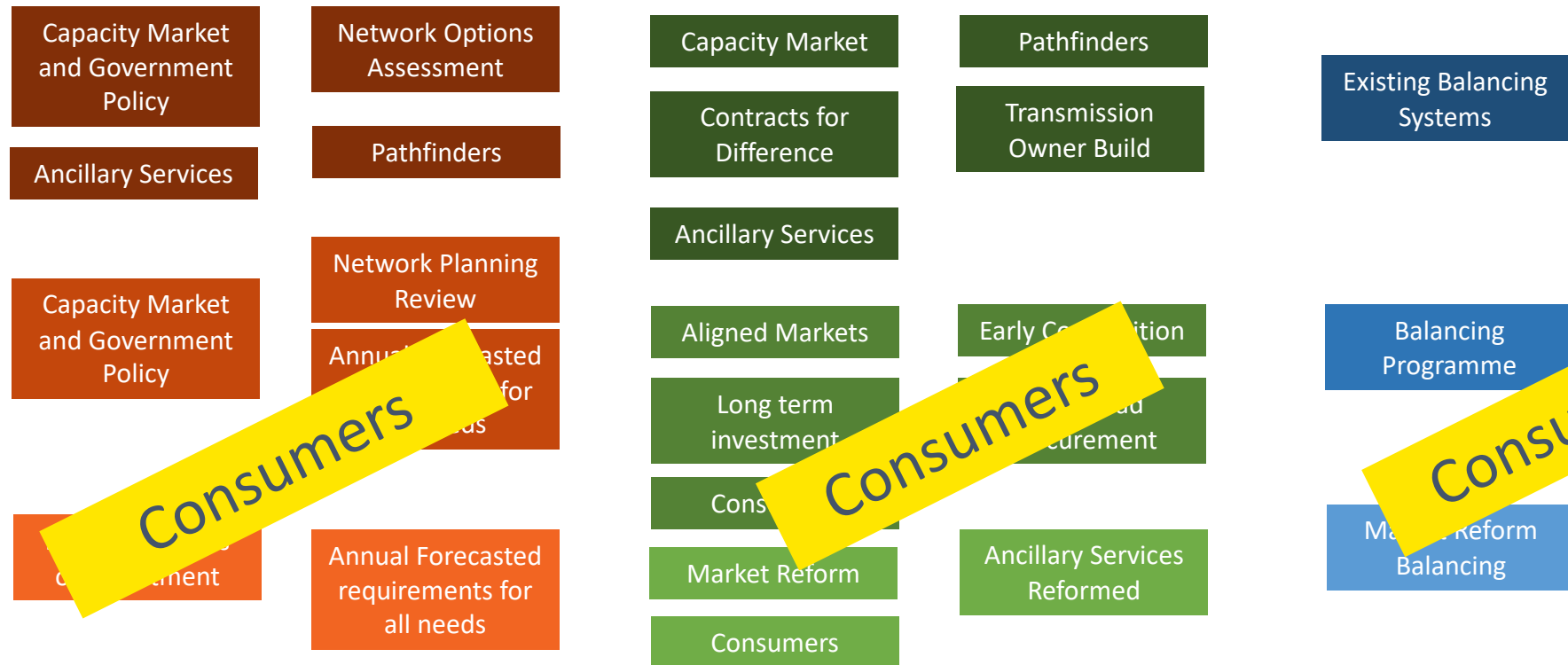


Period	Defining the system needs	Meeting the needs of the system	Operating the System		
2020 – 2025	<ul style="list-style-type: none"> Capacity Market and Government Policy Ancillary Services 	<ul style="list-style-type: none"> Network Options Assessment Pathfinders 	<ul style="list-style-type: none"> Capacity Market Contracts for Difference Ancillary Services Pathfinders Transmission Owner Build 	<ul style="list-style-type: none"> Existing Balancing Systems 	
2025 – 2030	<ul style="list-style-type: none"> Capacity Market and Government Policy 	<ul style="list-style-type: none"> Network Planning Review Annual Forecasted requirements for all needs 	<ul style="list-style-type: none"> Aligned Markets Long term investment Consumers 	<ul style="list-style-type: none"> Early Competition Day Ahead procurement 	<ul style="list-style-type: none"> Balancing Programme
2030 – 2035	<ul style="list-style-type: none"> Market Reforms on investment 	<ul style="list-style-type: none"> Annual Forecasted requirements for all needs 	<ul style="list-style-type: none"> Market Reform Consumers 	<ul style="list-style-type: none"> Ancillary Services Reformed 	<ul style="list-style-type: none"> Market Reform Balancing

Getting to 2035



2020 – 2025
2025 – 2030
2030 – 2035



Consumers



Net Zero Market Reform

Simon Targett

Market Strategy Lead

Net Zero Market Reform

ESO's Net Zero Market Reform programme is exploring holistically the changes to current GB electricity market design that will be required to achieve net zero

Jan-21

Nov-21

May-22

Phases 1-2
Scoping, Case for Change and Market Design Options Assessment Framework

Phase 3:
Operation: Detailed Assessment and Conclusions

Phase 4 onwards and into BP2 time horizon:
Planning in progress

Case for Change: The Key Challenges

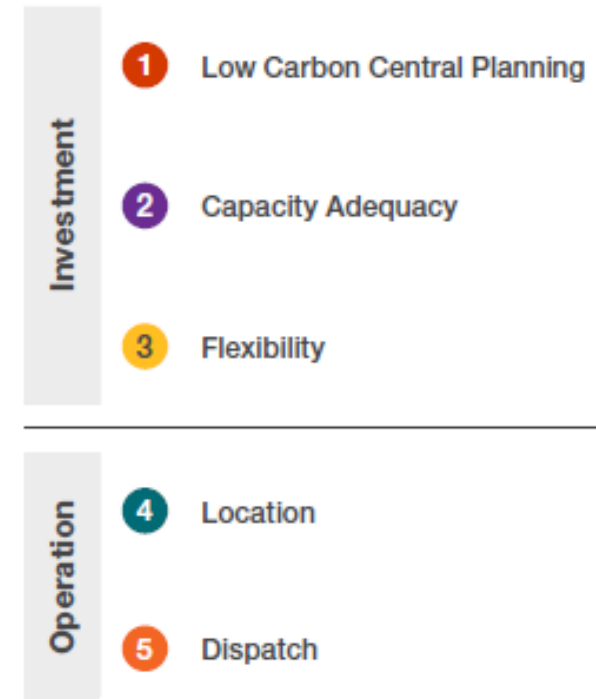


There is a need to **invest** at unprecedented scale and pace

There is a need to manage dramatic energy imbalances with **flexible and firm technologies** across both supply and demand

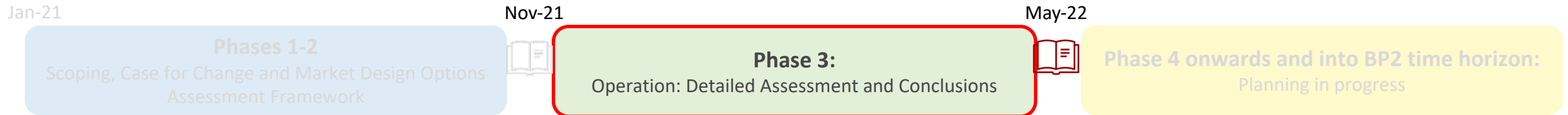
There is a need to incentivise assets to **locate and dispatch** where they can minimise whole system costs

Market Design Options Assessment Framework: First Order Elements



Net Zero Market Reform

ESO's Net Zero Market Reform programme is exploring holistically the changes to current GB electricity market design that will be required to achieve net zero



Context

- Constraint costs are rising at a dramatic rate
- Balancing the network is becoming more challenging and requires increasing levels of inefficient redispatch
- Interconnectors and storage are at times exacerbating constraints
- Current market design does not unlock the full potential of flexibility from both supply and demand

Approach

- Initial focus on Operation elements (location/dispatch)
- Assessment was qualitative based against criteria

Results

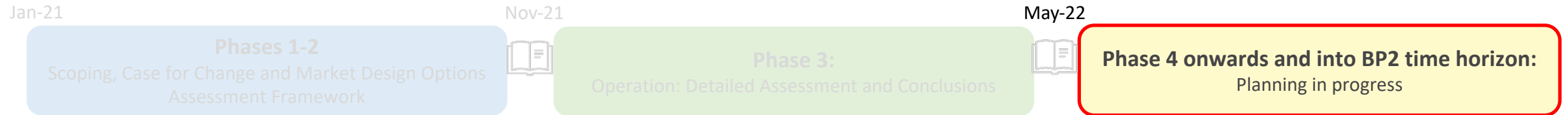
- Nodal pricing and central dispatch scored highest overall

Conclusions

- Status quo will not deliver net zero cost effectively
- The most efficient solution to this is real-time dynamic locational signals through nodal pricing combined with central dispatch (with self-commitment)
- Highest potential to deliver significant consumer benefits through greater competition and efficiencies (energy/reserves co-optimisation; optimised network/resource investment; efficient dispatch)

Net Zero Market Reform

ESO's Net Zero Market Reform programme is exploring holistically the changes to current GB electricity market design that will be required to achieve net zero



1) Detailed assessment of nodal pricing and central dispatch design and implementation considerations, including impact on stakeholders

- Key market participant cohorts
- Consumers
- DNOs
- ESO Control centre

2) Assessment of other market design elements under a nodal pricing and central dispatch model

- Low carbon central planning
- Capacity adequacy
- Flexibility (including consumer flexibility)
- Low carbon support mechanism
- Settlement period duration
- Ancillary services market design

3) Support BEIS and Ofgem in their respective market reform work (REMA and locational pricing technical assessment)

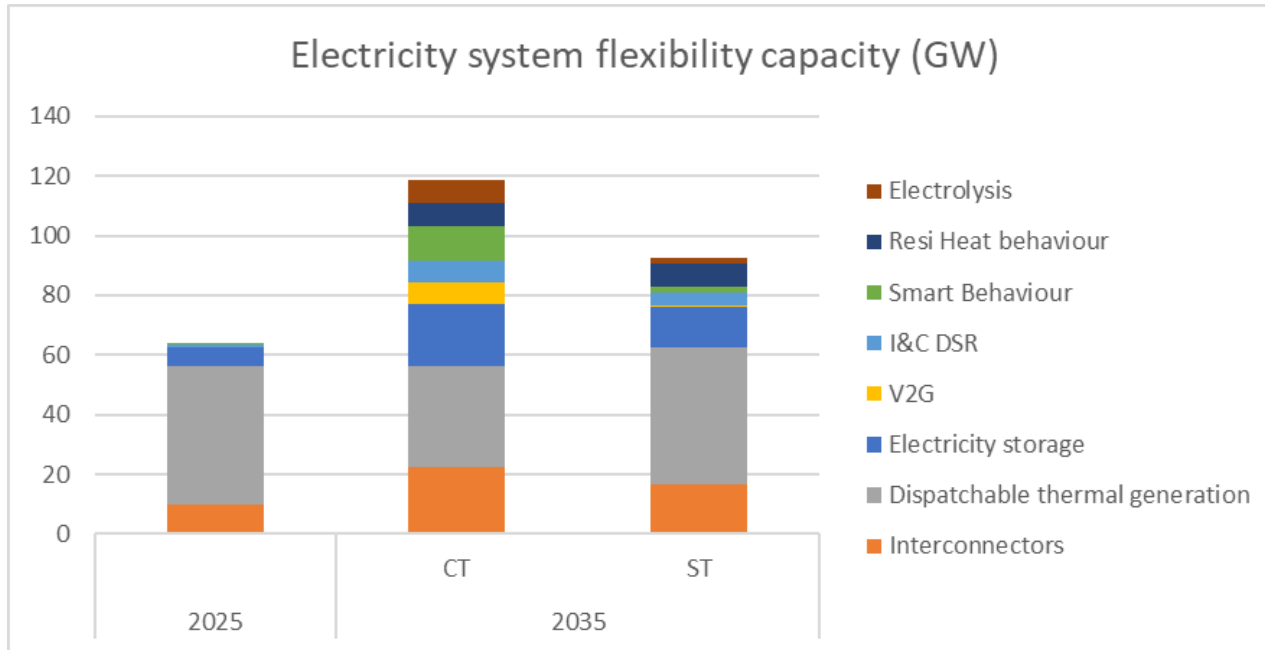


Consumer Flexibility

Becky Hart

Strategy Manager

Decarbonisation needs new sources of flexibility to support renewable energy from wind and solar



Demand side response (DSR) is fundamental to managing a decarbonised electricity system in 2035.

Consumer Transformation

By 2035, flexibility on the system could be:

Dispatchable capacity includes:

- 23 GW of CCGTs
- 22 GW of interconnection
- 21 GW of storage

Demand side flexibility makes up:

- 27 GW of DSR
- 8 GW electrolysis
- 11% of households engaging in V2G

System Transformation

By 2035, flexibility on the system could be:

Dispatchable capacity includes:

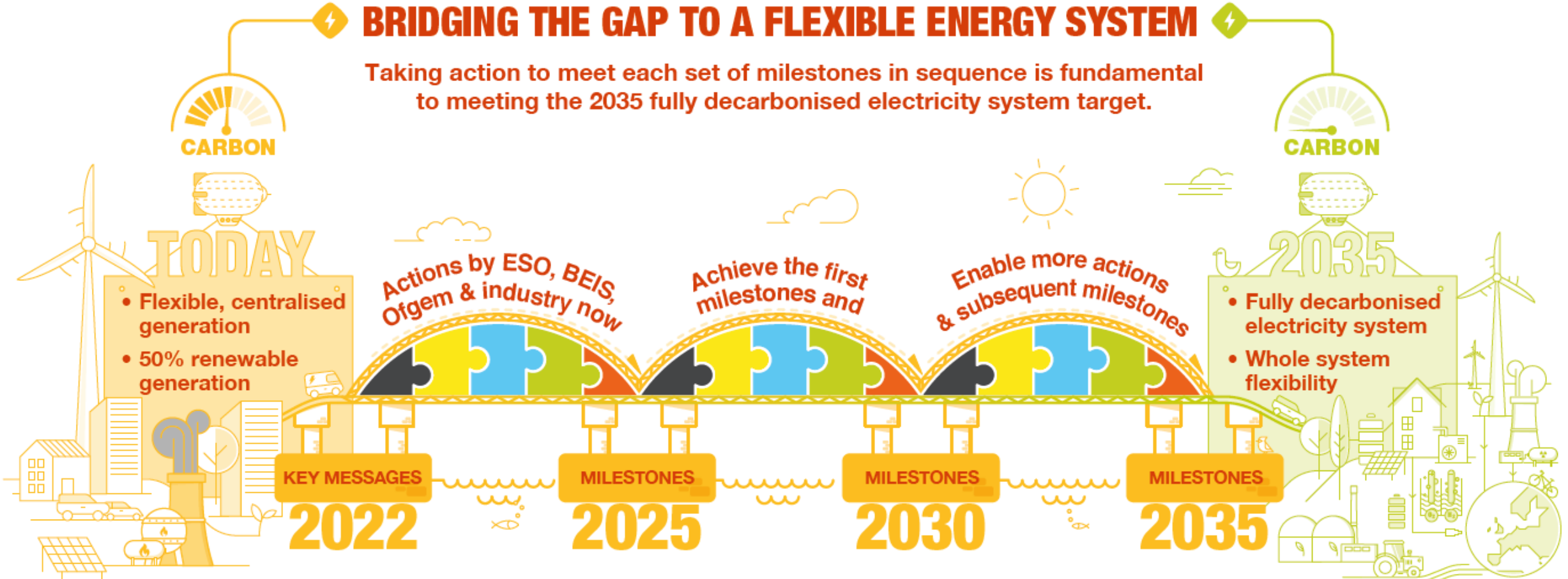
- 30 GW CCGTs
- 3.5 GW gas CCUS
- 17 GW interconnection
- 14 GW storage

Demand side flexibility:

- 14 GW DSR
- 3 GW electrolysis
- 0.8% households engaging in V2G

BRIDGING THE GAP TO A FLEXIBLE ENERGY SYSTEM

Taking action to meet each set of milestones in sequence is fundamental to meeting the 2035 fully decarbonised electricity system target.



How do we enable consumers to provide flexibility?

Please post questions on sli.do using code #ESOconsumer





Facilitating Distributed Flexibility

Charon Balrey
DSO Policy Manager

Increased focus in BP2 on facilitating distributed flexibility

Enabling whole electricity system co-ordination

Ensuring future markets can facilitate distributed flexibility technologies and models

Enabling distributed flexibility service provision to the ESO

Increased DER visibility in real-time operations



Position paper published in May

Increasing volumes of DER could provide both ESO and DSO with flexibility services.



Greater operational visibility will be critical to the future operation of the electricity system.



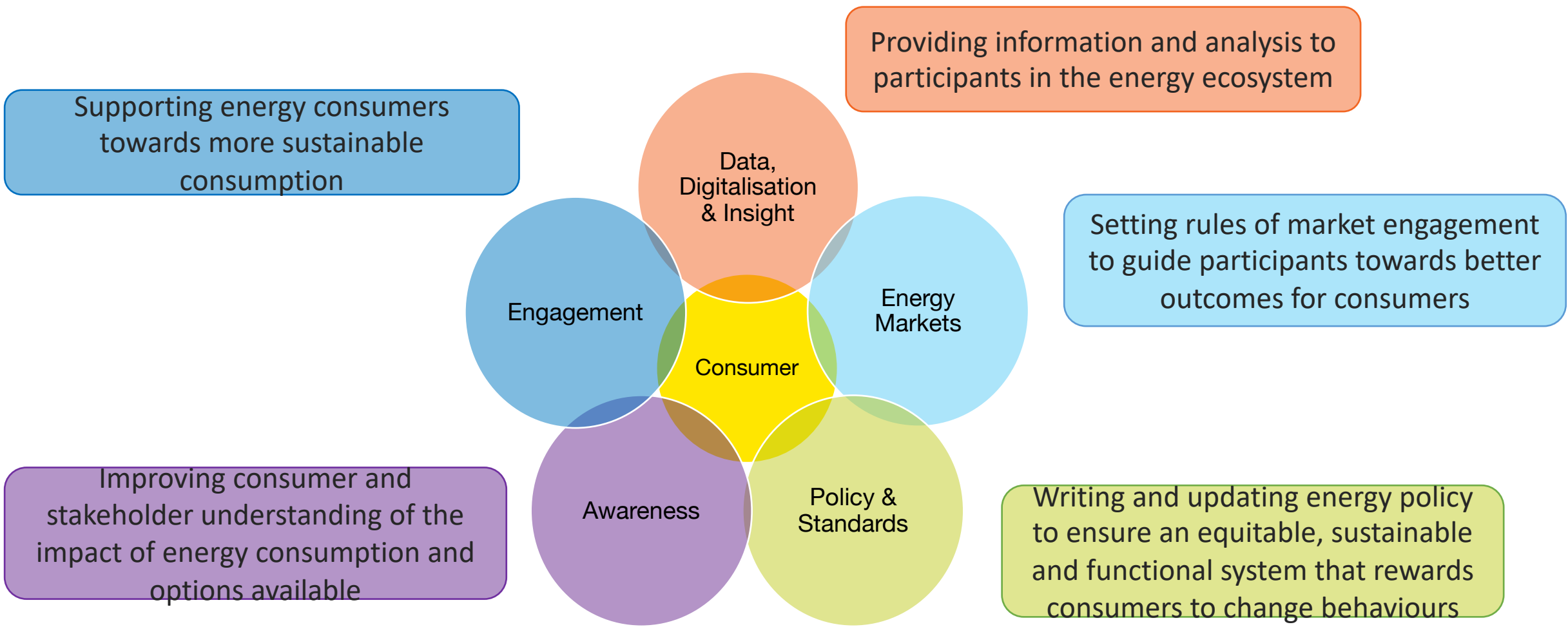
Feedback on our proposals welcome by 10 June.



Critical to this visibility is the need for operational metering at a standard that works for all parties.

Please find more information - <https://www.nationalgrideso.com/industry-information/balancing-services/power-responsive>
Summer Event sign up: <https://www.eventbrite.co.uk/e/power-responsive-summer-event-2022-tickets-337227886687>

Working together to empower consumers to participate in a flexible energy system



Breakout questions

1. What actions should the ESO take to ensure consumers can benefit from the energy transition?
2. What is your organisation's role to ensure consumers can benefit from the energy transition . What roles should others play? How should/could the ESO support?

A man with curly hair and a beard, wearing a light blue shirt and a green backpack, is riding a bicycle on a city street. He is smiling and talking on a mobile phone. The background shows a blurred city street with buildings and trees. A glowing purple line graphic loops around the man and the text.

Questions

*Please use Sli.do code
#ESOconsumer*

Consultation on ESO's second Business Plan (BP2)

Consultation on BP2 (Apr 23 to Mar 25) is open until **Friday 10th June**

Consultation document and questions available on ESO website

You can sign up to our mailing list, email your consultation responses / queries or set up a meeting with us through box.ESO.RIIO2@nationalgrideso.com

Stakeholder feedback will inform our update ahead of final submission in August 2022



Next steps and thank you