



# ESO Markets Advisory Council

28<sup>th</sup> April pre-read

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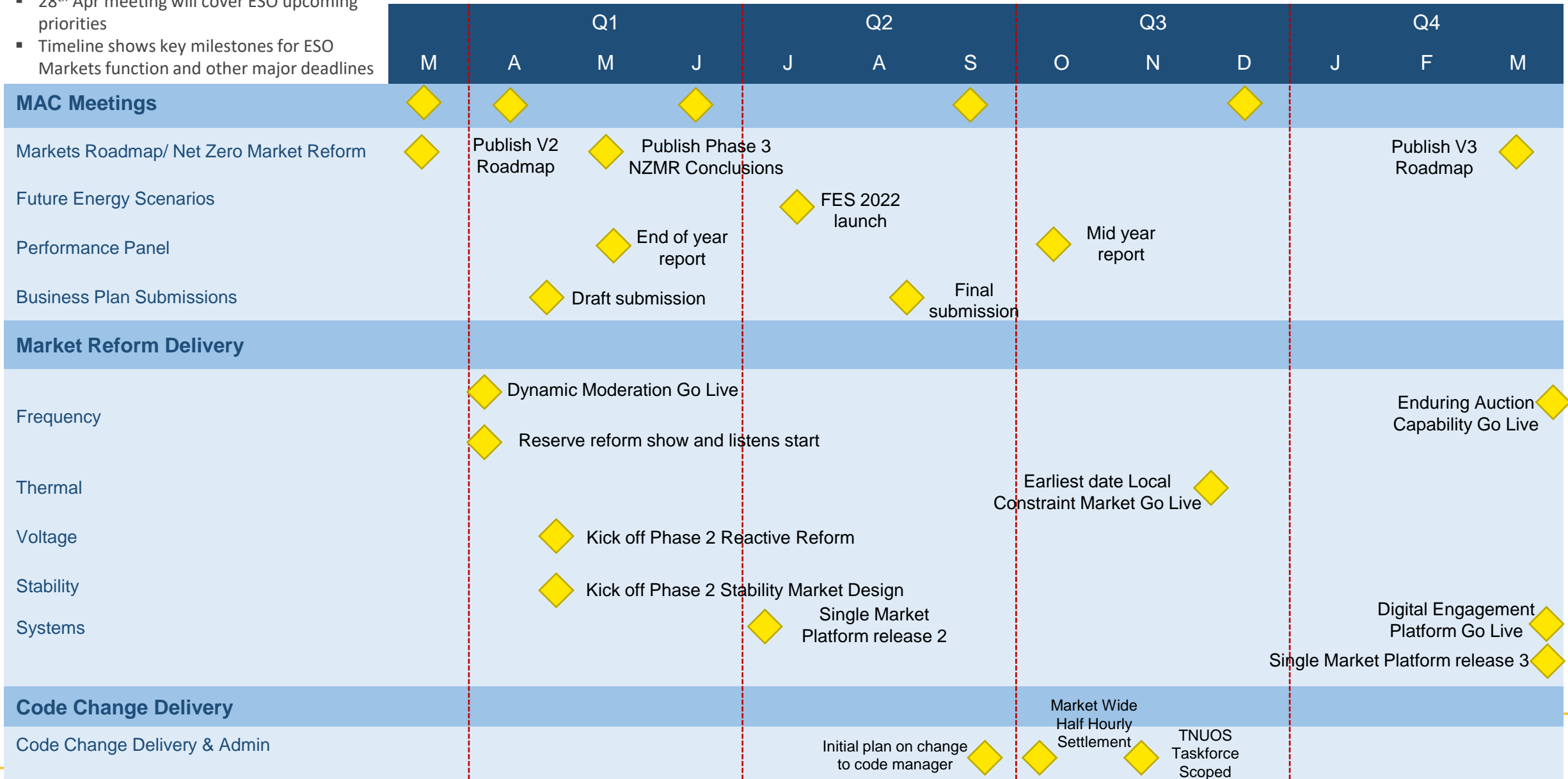
1. Agenda for 28<sup>th</sup> April Meeting
2. ESO Markets: 2022 Timeline and Key Milestones
3. Overview of Markets Roadmap and Strategic Priorities
  1. Introduction to Markets Roadmap
  2. Winter 2022 Strategic Priorities
4. Net Zero Market Reform:
  - Phase 3 Highlights
  - Next steps

# Agenda for 28<sup>th</sup> April Meeting

1. Intro and Recap
2. Markets Roadmap and ESO Markets Strategic Priorities
3. *Break*
4. ESO Performance Panel Overview
5. REMA Overview (BEIS)
6. Next Steps for Net Zero Market Reform
7. Update on Future System Operator
8. Topics for future meetings
9. AOB

# ESO Markets: 2022 Timeline and Key Milestones

- 28<sup>th</sup> Apr meeting will cover ESO upcoming priorities
- Timeline shows key milestones for ESO Markets function and other major deadlines



# Overview of Markets Roadmap and Strategic Priorities

The following slides introduce:

1. The Markets Roadmap
  1. Its purpose
  2. How we frame market reform by transformational stages
  3. Overview of market design principles we are using to evaluate current markets and proposed reforms
2. Winter 2022 Strategic Priorities
  - Overview of work on BM Operational Standards and Local Constraint Market

## **We are looking to discuss:**

- Do you think the Markets Roadmap is fit for its purpose?
- Do you agree with the market design principles?
- Do you have any thoughts on our priorities for this winter?
- What else would you prioritise?
- Are there other ideas you would propose?

# We have just published our latest version of the Markets Roadmap, which has three overarching aims

1. Give our stakeholders confidence that we are making the right market reform and design decisions.
2. Share strategic questions we are currently tackling and signpost how industry can work with us to answer them.
3. Provide a clear and transparent view of what market reforms we are introducing, why we are introducing them, and when.

The full document can be found on our [website](#).

# New challenges for operability and across markets and products require unprecedented reform to our balancing services markets



- More variable and asynchronous generation
- Less dispatchable generation
- New connections further away from demand centres



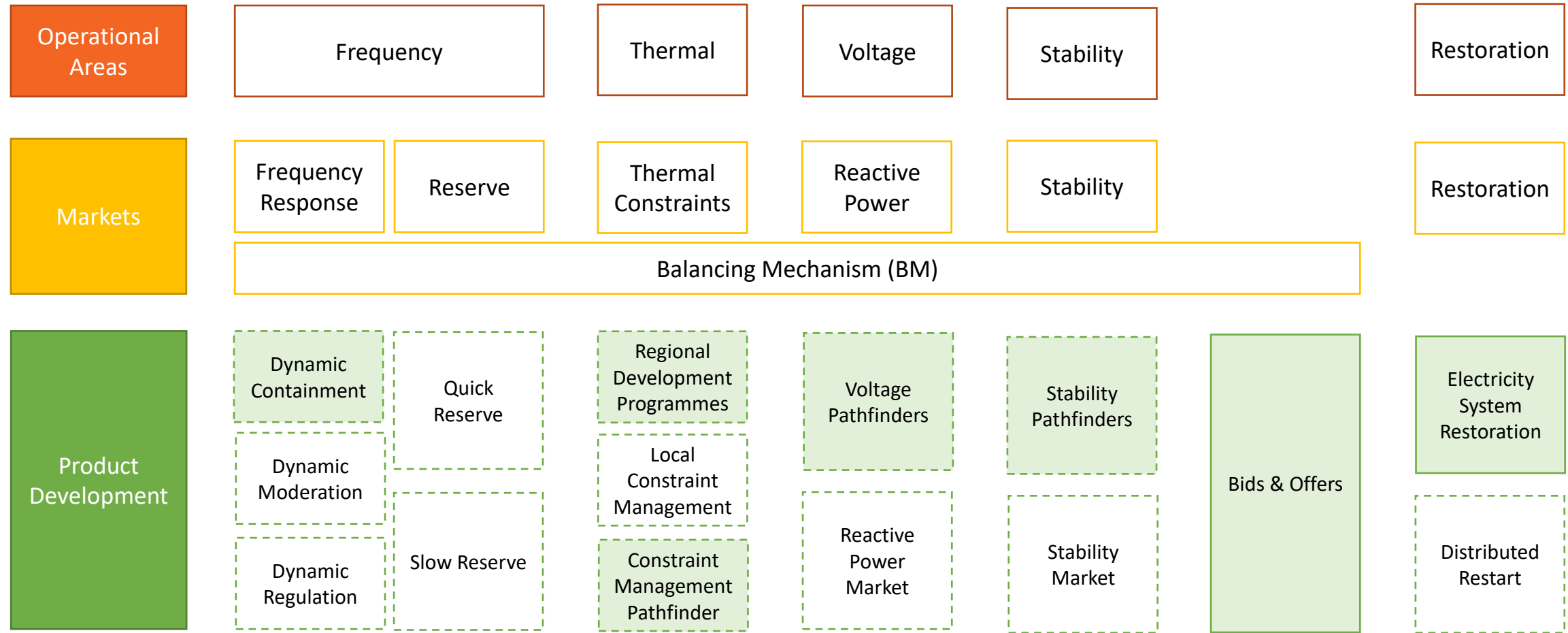
- New sources of flexibility needing routes to market
- Transitioning to a decarbonised electricity system with lowest balancing costs



- Standardising and rationalising our product suites
- Opportunities to share more and higher quality data

# We are adapting our products to operate the electricity system of the future.

Our new products will deliver: efficient dispatch; efficient investment and; value for money



Key — Service Procured in 2021 Product is under development



# We are trialling the use of a framework for Market Transformation to standardise and bring clarity to balancing services market reform



# We have revised our market design objectives and principles to ensure we are designing markets in a robust, comprehensive and transparent way

## Market Design Objectives



### Efficient Dispatch

Meets balancing service needs in real time using the optimal combination of supply and/or demand-side resources.



### Efficient Investment

Gives investors sufficient certainty over revenues to obtain financing, ensuring future system requirements are met by the right technology mix in the right locations, at lowest cost to society.

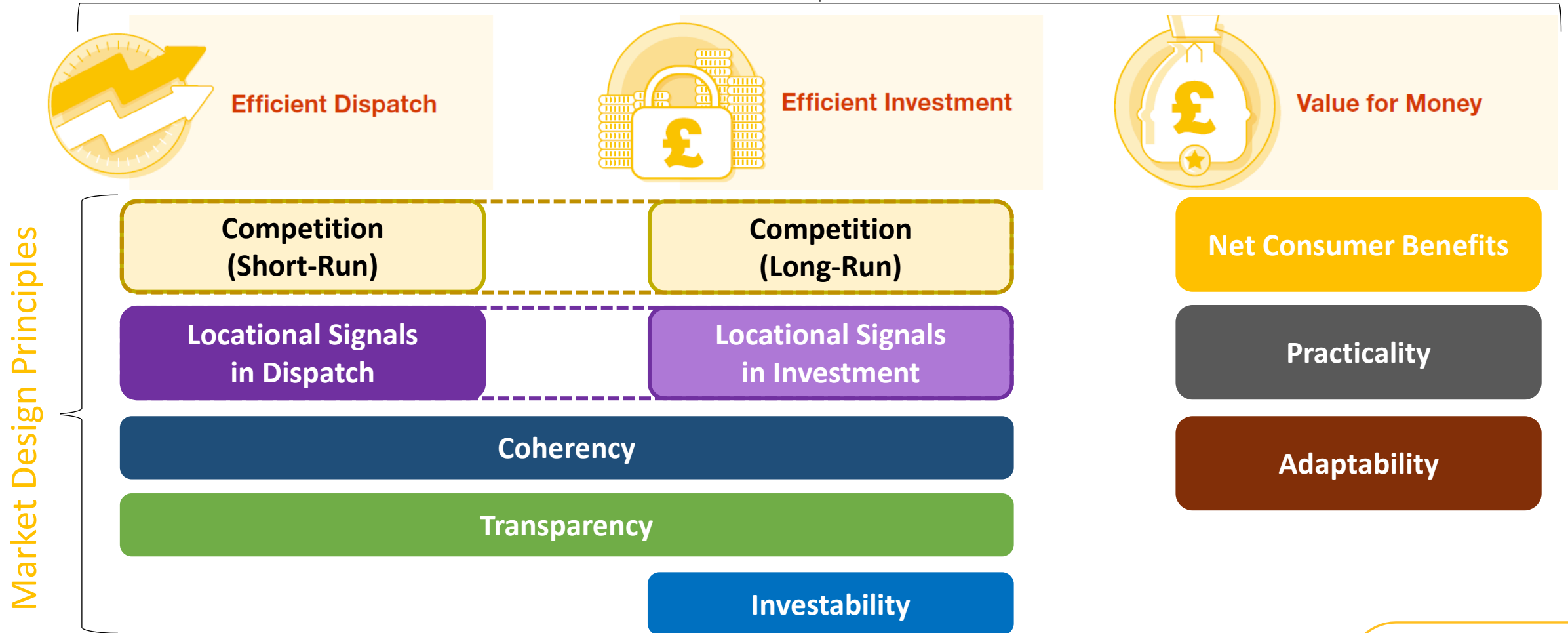


### Value for Money

Selects outcomes that are in the best interest of current and future consumers.

# We have revised our market design objectives and principles to ensure we are designing markets in a robust, comprehensive and transparent way

## Market Design Objectives



# Winter 2022 Strategic Priorities

# BM Operational Metering Standards

## Why is this a priority?

- Operational metering standards were developed for large transmission connected power stations
- The associated data burden is significant for aggregators of smaller flexibility assets
- Stakeholders have told us that this is one of the main blockers to residential flexibility providing services to the ESO.

## What are we doing?

- At last month's Markets Forum we committed to making our markets more accessible to residential flexibility through a revised approach to operational metering.
- Our intention is to work alongside industry to adapt these standards so that good visibility is maintained for NG ESO, whilst removing barriers for industry. We propose that our main channel of engagement is via a dedicated, inaugural Power Responsive Working Group.
- Based on industry feedback, we are reviewing our standards for Balancing Mechanism (BM) participants in the first instance. We will look to deliver this in Q3/Q4 FY23.
- Using lessons learnt and industry insight, we will also look to apply our thinking to new Reserve markets in the medium term which may have similarities with BM instructions. This will be taken forward with the Reserve Reform work.
- Our end goal is to ensure that operational metering requirements are adequate and proportional for all ESO markets.

# Local constraints market (LCM)

## Why is this a priority?

- Constraints are by far the largest part of ESO balancing spend, and rising rapidly.
- We spent £1.3bn on constraints in the 12 months to Jan 2022. NOA6 forecasts £2.3bn by 2026, and NOA7 is expected to be considerably higher.

## What are we doing?

- Our Constraint Management 5-Point Plan is a medium-term strategy to manage our most constrained boundaries (includes RDPs and Constraint Management Pathfinder).
- As part of the 5-point plan we are exploring a Local Constraint Management to access new cost-effective sources of flexibility that will help manage B6 boundary constraints. It would be an additional resource to the BM, providing competition to BM prices.
- We will take learnings from the simplicity of Optional Downward Flexibility Management (ODFM), but avoid its burdensome manual processes - we anticipate the delivery of an 'off-the-shelf' SaaS solution with no/minimal integration to existing ESO systems
- The target delivery date for the LCM is Q4 2022. Initial focus will be on B6, with capability to extend to further boundaries in future via the same 3rd party platform if required. We anticipate the market, and therefore the platform, to in place for 3 – 3.5 years.

# Net Zero Market Reform

The following slides provide:

1. A summary of the Net Zero Market Reform Phase 3 conclusions
2. An overview of how we are approaching the next phase of the programme
3. Slides from our Markets Forum presentation can be found [here](#)

## What we are looking to discuss:

- Do you agree with our prioritised next steps?
- How can we best work with industry and policymakers to maintain momentum in the debate around market reform?

# Net Zero Market Reform – Summary of Phase 3

## Programme Objectives:

- To explore what reforms are needed to electricity markets to meet net zero
- Considers full suite of GB electricity markets; not just ESO balancing markets

## Phase 3 Scope and Approach:

### 1. Focus on Operation (Location/ Dispatch) design elements

- Location/ Dispatch design considers fundamental ingredients of wholesale market price, how the forward/ spot/balancing prices are formed and by whom
- Investment interventions required are a consequence of the wholesale market outcome. Therefore makes sense to consider e.g Capacity Market Design after establishing our position on the Operational elements

2. **Assessment at this stage was qualitative** (based on analysis of how options are implemented in other jurisdictions, economic theory etc.)

## Key contextual evidence:

1. Constraint costs are rising at a dramatic and accelerating rate
2. Balancing the network is becoming more challenging and requires increasing levels of inefficient redispatch
3. Interconnectors and storage are at times exacerbating constraints
4. Current market design does not unlock the full potential of flexibility

## Location: assessment of nodal pricing vs zonal pricing vs national pricing + locational charging (status quo)

- Nodal pricing scored highest overall, and in particular on: Value for money; Adaptability; Full chain flexibility

### **Key benefits:**

- Reduces overall costs to consumers through reduced constraint costs and by facilitating more efficient dispatch
- Strengthens incentives for efficient siting, development of energy resources and network build
- Can improve system flexibility via accurate signals to DERs, Interconnectors and Storage
- Has greatest potential to be adaptable and resilient

### **Key risks/ considerations:**

- The implications for investor confidence are contentious. Challenge from stakeholders that risk premia would increase both because of uncertainty over implementation and due to the complexity of forecasting nodal prices
- ESO analysis suggests that nodal allocates risk to those best placed to manage it, more so than zonal/national

### **Other options not taken forward:**

- Zonal pricing would be expensive to implement and would only partially and temporarily resolve locational constraints. In particular, rezoning would be inevitable since constraints move as more network is built
- National pricing: Poor value for money; does not enable full chain flexibility; not adaptable and increasingly risky for delivering net zero

## Dispatch: assessment of central dispatch (with self commitment) vs self dispatch (status quo)

- Central dispatch with self commitment scored highest overall. It offers better value for money, improved access to wholesale markets for new and small entrants, and is more adaptable than status quo

### **Key benefits:**

- Balancing on a system-wide rather than portfolio basis can better optimise full market resource, especially in the context of high renewables penetration
- Significant efficiency savings can be delivered by co-optimising energy and reserves
- Can unlock potential of full chain flexibility via improved wholesale market transparency and greater market access for demand and smaller assets

### **Key risks/ considerations:**

- Scored lower on deliverability because of implementation costs for ESO and wider industry
- Uncertainty as to how ESO markets would interact with DSO markets

### **Other options not taken forward:**

- Self dispatch (status quo)



# We have 3 priorities for the next phases of the Net Zero Market Reform programme

## Support Ofgem's technical assessment of locational pricing options

- Supply ESO system data inputs required to model nodal pricing in a GB context
- Provide evidence from our work to date to complement the assessment and help inform its design

## Further assessment of LMP and central dispatch implementation approaches

- Consider in greater detail the impact of nodal pricing and central dispatch on distinct stakeholder cohorts, including end consumers
- Discuss key implementation design options; explore realistic end to end implementation processes and associated timelines

## Assessment of remaining design options

- Investment design: elements not concluded in Phase 3 of NZMR such as Capacity Adequacy and the appropriate level of exposure to the wholesale price in the associated subsidy mechanisms
- Operational design: assessment of remaining operational elements such as settlement period duration.
- The other market design elements will be assessed against a baseline of nodal pricing and central dispatch being implemented