Show and Listen:

Sharing methodology to assess industry ideas for the constraints collaboration project (CCP)

23 April 2024

ESO

Introduction

Introduction: Agenda

Contents	Facilitator	Duration
Introduction	Becky Hart	2 mins
Overview of market-based solutions to be assessed		5 mins
Discussion		10 mins
Assessment methodology to be applied	Alifa Starlika	15 mins
Discussion		15 mins
Timeline		5 mins
AOB		3 mins

Introduction: Objective

Objective of today's show and listen

1. To give an overview of market based market-based solutions to be assessed
2. To explain assessment methodology to be applied
3. To provide industry the opportunities to ask questions

Overview of market-based solutions to be assessed

Overview of market-based solutions to be assessed

1. Constraints Management Markets (CMM)

1A. Demand for Constraints

- amp CLEAN ENERGY — Increasing demand for power in constrained areas for electrification of heat
- eneus energy — Flex PtX to produce green H_2 and related derivatives
- Statkraft — Demand signal product
- ScottishPower — Incentivising new discretionary demand (H_2 production and electricity storage)
- Flexitricity — 'COOLER HEATING' – commercial heat loads as responsive assets
- sse Business Energy — Long-term constraint management contracts (incentivising new demand)

1B. CMM – Long Term (Multi years to decade ahead)

- TEL the energy landscape — Constraints management markets (CMMs)
- SCOTTISH FUTURES TRUST — Long term contract to manage a portion of the forecast constraint volumes
- sse Business Energy — Competitively allocated season ahead constraint management availability contracts
- EDF — Long-term auction of excess wind

1C. CMM – Short Term (Day to week ahead)

- ZENOBE — Pre gate closure constraint management product using scheme 7 trade
- sse Business Energy — Competitively allocated short-term constraint management contracts (D-7)
- EDF — Discounted demand turn up
- EDF — Weekly generation turn down market

2. Increasing how much can flow over boundaries

2A. Extended intertrip scheme

- FIELD — Extended intertrip scheme
- ZENOBE — Intertrip scheme utilisation
- sse Business Energy — Enhance utilisation of the transmission network
- Eku — Battery for constraints: Reducing the line rating from 10 to 3 mins

2B. Flexible assets to support capacity increase

- FIELD — Grid booster
- ZENOBE — Transfer booster
- Kona Energy — Paired storage systems across key boundaries
- ZENOBE — Flexibility for Active Network Management (ANM) zones and Generation Export Management (GEMS)

3. Using flexible assets to reduce the flow over boundaries

- Flexitricity — The 'Big Friendly Battery' for ~8 hours duration

How do you feel about this categorisation?

Key: Demand for Constraints | CMM – Long term | CMM – Short term | Increasing how much can flow over boundaries | Using flexible assets to reduce the flow over boundaries

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Discussion

Methodology for assessment of market-based solutions to address thermal constraints

Methodology for assessing and selecting industry ideas

The process for assessing industry ideas and selecting suitable market-based solutions to address thermal constraints is outlined below

1A **Collate long list of solutions submitted by industry**
Gather potential short-term, market-based solutions to address thermal constraints

1B **Categorise long list**
Understand industry proposals and group them into three identified themes

2 **Engage selection process using ESO's Market Design Framework (MDF)**
Analyse alignment of proposed ideas to the ESO's MDF, principles, and its associated metrics

Current focus

3 **Establish and assess short-list**
Arrive at a shortlist of potential solutions through a RAG rating and conduct detailed analysis

3A **Share and communicate short-list with industry**
Test the first draft of shortlisted ideas with industry to provide opportunities to give feedback and ask questions

To be completed at a workshop in May 24

4 **Agree recommended solutions and contract design with industry**
Refine shortlist to arrive at a list of recommended market-based solutions for thermal constraints

Assessment criteria using the ESO Market Design Framework (1/5)

Efficient Dispatch

Efficient Investment

Value for Money

Market Design Objectives

Efficient Dispatch	Efficient Investment	Value for Money
Meets balancing service needs in real time using the optimal combination of supply and/or demand side resources	*Gives investors sufficient certainty over revenues to obtain financing, ensuring future system requirements are met by the right technology mix in the right location*	*Selects outcome that are in the best interest of current and future customers*

Market Design Principles

Efficient Dispatch	Efficient Investment	Value for Money
Competition (Short Run)	Competition (Long Run)	Net Consumer Benefits / Least Cost*
Locational Signals in Dispatch	Locational Signals in Investment	Practicality / Deliverability
Coherency		Adaptability
Transparency		
Whole Energy System Flexibility		
	Investability	

Constraints

We are looking for market-based solutions that can be implemented and deliver results in the short term (<5 years)

* To be assessed by an external consultant

Key: Efficient Dispatch; Efficient Investment; Value for Money; Prioritised criteria

Assessment criteria using the ESO Market Design Framework (2/5)

Principles	Explanation and Rationale	Assessment Metrics
Competition (Short Run)	**What:** The solution creates a market in which multiple current or potential participants seek to offer better terms (prices and quantities) than those offered by other participants, which is open to all providers technically capable of providing the service	*What is the number and MW of existing capable providers?* *What is the market share of the three largest providers?* *How many technically capable providers are included and excluded by eligibility rules?*
	Why: Ensures service eligibility does not unduly discriminate against particular technologies	
Locational Signal in Dispatch	**What:** The solution provides insight to market participants on what's the value of their actions to the system in terms of location and incentivises dispatch that meets system requirement	*Would the proposal send sufficiently accurate and granular signals by time and location?*
	Why: Demonstrates ability to reduce overall volume of ESO actions and delivers value for money to consumers	

Assessment criteria using the ESO Market Design Framework (3/5)

Principles	Explanation and Rationale	Assessment Metrics
Coherency	**What: T**he procurement methods enable market participants to make decisions about where to bid, which are efficient for both the market participants and the system, across all ESO and non-ESO markets (e.g. Wholesale and DSO markets)	*Will this solution be consistent with the procurement of other ESO services?* *How does this solution align with DSO's markets?*
	Why: Ensures the solution's procurement decisions are efficient and aligned with the evolution of ESO markets, government policy and other markets	
Transparency	**What:** Information is provided to market participants and procurement decisions are made in a clear and predictable way	*How much information about forecasting for the service can be shared?* *How will the ESO publish the service rules and methodology to ensure clarity for participants?*
	Why: Demonstrates ability to minimise information asymmetries and uncertainty around ESO's decision making	
Whole Energy System Flexibility	**What:** Market design should incentivise market participants of all sizes (both supply and demand) to act flexibly where it is efficient to do so. It should also promote greater coordination across traditional energy system boundaries, to enable effective optimisation across the system as a whole	*Does this support an integrated, whole-system approach across different energy vectors (vendors/sectors/actors)?*
	Why: Ensures the solution enables effective optimisation across the energy system as a whole	

Key Efficient Dispatch Efficient Investment

Assessment criteria using the ESO Market Design Framework (4/5)

Principles	Explanation and Rationale	Assessment Metrics
Competition (Long Run)	**What:** The solution creates a liquid market through multiple players that can offer competitive terms (prices and quantities)	*How many providers could participate in this service in future?*
	Why: Ensures the solution enables price discovery and reduce overall cost to consumers in the long run	
Locational Signal in Investment	**What:** The solution ensures that capacity is constructed and that services are procured in the right places	*Does the proposal provide a locational investment signal, to support development of new assets, which can help with either demand or generation useful for system operation?*
	Why: Demonstrates value that encourage investors to invest in new generation or storage assets, demand or sources of flexibility to build an optimised electricity system that accurately reflects the value of generation and demand to the system	
Investability	**What:** Market design must drive the significant investment in technologies needed to deliver our objectives and deliver investment signals which market participants and investors can respond to and rely on	*What is the contract length?* *Will the proposal provide revenue certainty for providers?*
	Why: Demonstrates ability to generate revenue to attract financing or investment	

Key Efficient Investment

Assessment criteria using the ESO Market Design Framework (5/5)

Principles	Explanation and Rationale	Assessment Metrics
Net Consumer Benefits / Least Cost	**What:** The costs to consumers do not outweigh the benefits conferred by the procurement method	*What is the net consumer benefit of the solution? (does the solution generate savings to end consumer bills?)*
	Why: Ensures the solution reduce overall costs to consumers	
Practicality / Deliverability	**What:** Changes to market design should be practical to implement, transition to and operate within designated timeframes and seek to minimise disruption during the transition, taking account of the highly complex and integrated nature of the power system	*Does the procurement method require ESO to increase its operational capabilities?* *Will the solution require changes in industry systems or processes?*
	Why: Demonstrates ability to deliver in short term	
Adaptability	**What:** Market design should be adaptive, responsive to change, and robust to uncertainty. The solution should also be flexible to changes in balancing service requirements and the technology mix	*How often is ESO able to adjust the volumes procured for this service?* *Does it present any challenges to future decarbonisation, or decentralisation?* *Will the service be compatible with compatible with planned or potential changes to market design?*
	Why: Demonstrates ability to keep up with dynamic market and regulatory changes	

Approach to scoring to shortlist market-based solutions

Red, Amber, Green (RAG) rating summary

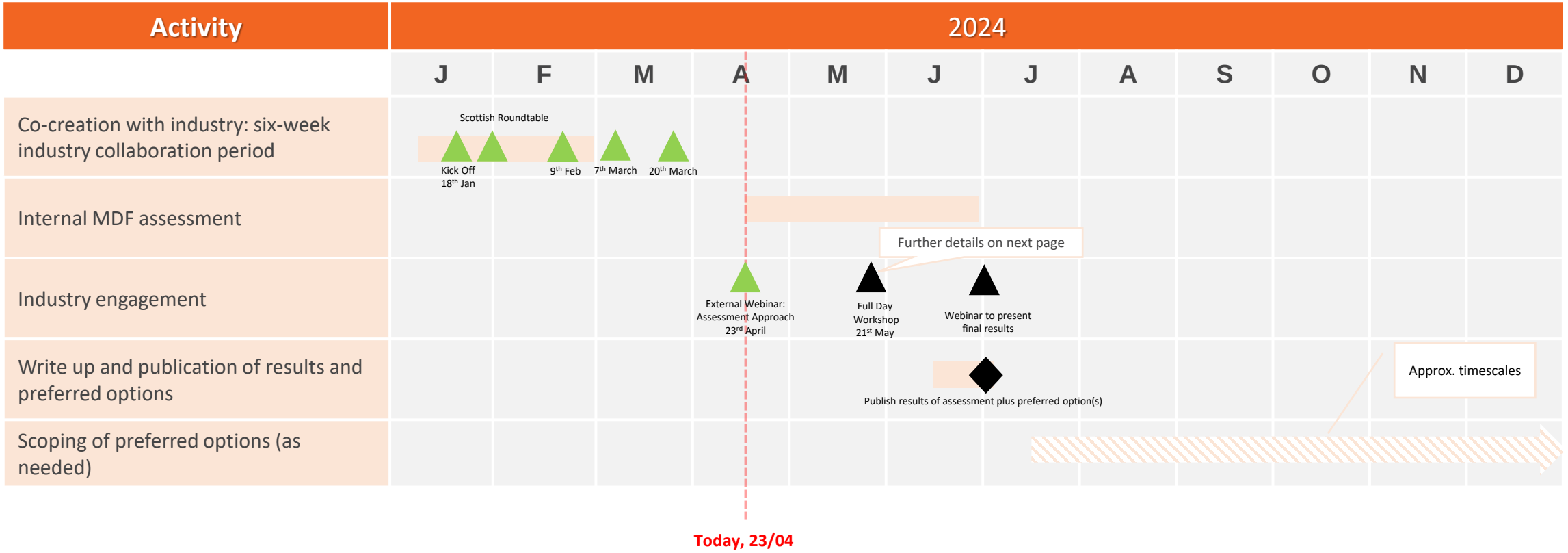
RAG	Numerical Score	Level of Alignment
Red	1	Low - Proposed solution is not aligned with the principles
Amber	2	Moderate - Proposed solution is adequately aligned with the principles
Green	3	High - Proposed solution fully aligned with the principles

Minimum Scoring

- Proposed solution will need to score all green when assessed against the priority criteria (competition (short run), practicality, coherency, and net consumer benefits) to have the opportunity to be considered for scoping stage
- In addition, proposed solution should be able to be implemented in the short term (<5 years)
- Those who do not score green in the top criteria and cannot be implemented in the short term will be discounted from the evaluation process
- This is to ensure only reasonably viable projects are shortlisted

Discussion

Delivery plan and timeline for the Constraints Collaboration Project



Disclaimer:

- Constraints Collaboration Project (CCP) does not indicate a formal or firm commitment of ESO to introduce new services for thermal constraints. Participating in the CCP also does not commit you or your organisation to any specific course of action.
- The timeline published within this document, are indicative and are subject to further development by ESO, in consultation with relevant stakeholders.
- We reserve the right to review and amend all provisions within the document for any reason and in particular to ensure that proposals provide value for money.
- Should you have any questions, please contact box.market.dev@nationalgrideso.com.

Key ◆ Milestone ▲ Stakeholder Meeting / Webinar ▲ Completed ▨ Indicative timeline

ESO will organise a workshop to share the first draft of the MDF assessment and to provide the opportunity to give feedback and ask questions

When: Tuesday, 21st May 2024

Where: TBC (Online / Warwick Technology Park, National Grid ESO, Faraday House, Gallows Hill, Warwick CV34 6DA)

How to participate: Please register your interest here. The link will also be made available on our post-webinar email and the website.

How long: Full day (09.30 AM – 16.30 PM)

AOB

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