

THE ELECTRICITY STORAGE
NETWORKTM

Annual Conference

28 NOVEMBER | IET, LONDON

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Welcome from the chair

Rachel Hayes

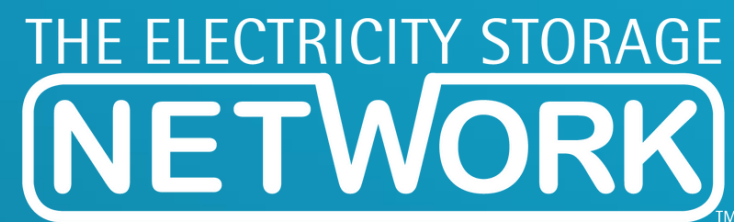
Director, Electricity Storage Network



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Annual Conference agenda

- 12:00** Guest arrival and lunch
- 13:00** Welcome from chair
- 13:10** Keynote: CP2030 and the role of storage
- Energy Minister Michael Shanks MP
- 13:40** Electricity Storage Network: Impact
overview and priorities for 2025
- 14:00** Batteries and the Balancing Mechanism
- 14:30** Break
- 15:15** Panel: Clean Power 2030 and the role of
storage in the future energy system
- 16:00** Grid connection reform – reshaping the
development process
- 16:30** Long duration energy storage: Next steps
for an emerging market framework
- 17:00** Drinks in the Flower and Lovelace rooms
- 18:30** Drinks in a reserved room at the nearby
Wellington pub on the Strand. First round
on the ESN!



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Keynote: Clean Power 2030 and the role of storage

Michael Shanks MP

Minister for Energy





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Electricity Storage Network – impact and priorities for 2025

Chair: Olly Frankland

Electricity Storage Network lead





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Markets and revenues working group

Chair: Ed Porter

Director of industry, Modo Energy



Markets and Revenues Working Group

2024 so far

Balancing Mechanism

- Tracking progress on skip rates and updates from NESO (e.g. 30 minute rule)
- Reviewing progress of **Grid Code 0166** Introducing new Balancing Mechanism Parameters for Limited Duration Assets (consultation published) and **Balancing and Settlement Code P462** modification.
- Discussing **Balancing Reserve** and Balancing Mechanism interactions and behaviours with NESO representatives.

Capacity Market

- Responded to NESO de-rating methodology consultation.

Other

- Collated members for TNUoS storage subgroup (delayed).

Markets and Revenues Working Group

2025 and beyond

Balancing Mechanism

- Track skip rates via Dispatch Transparency dataset and methodology. Review the need for targets/KPIs.
- Continue tracking next steps of GC0166 and BSC P462.

Reserve services

- Quick Reserve progress after launch

Network charging

- Proposed TNUoS cap and floor
- TNUoS storage subgroup

Review of Electricity Market Arrangements

- National or zonal wholesale market?
- Scheduling and dispatch workstream (NESO and Afry)



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Sustainability, safety and supply chain working group

Chair: Daniel Sherlock-Burke

Head of asset performance, Gore Street Capital



Sustainability, Safety and Supply Chain Working Group

2024 so far

Fire safety

- Engagement with and response to the National Fire Chiefs Council guidance consultation.
- Member input to the new health and safety guidance document for grid-scale electricity storage.

Operational carbon reporting

- Started a subgroup to review methodologies

Sustainability

- Tracking wider policy environment across EU and US
- Monitoring forced labour allegations and drafted industry statement.

Environmental permitting

- Engaging Defra and organising a site visit ahead of a new environmental permitting consultation for battery storage.

Sustainability, Safety and Supply Chain Working Group

2025 and beyond

Fire safety

- Review new NFCC guidance when published and impact on planning.
- Continue tracking new best practices and standards

Sustainability

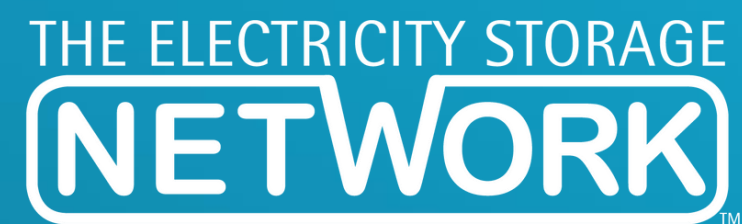
- Wider work on supply chain transparency and best practices on due diligence

Operational carbon reporting

- Agree on an industry-wide methodology

Environmental permitting

- Confirm next steps with Defra



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Grid connections working group

Chair: Joe Colebrook

Head of grid, Innova





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Grid Connections Working Group

2024 so far

TMO4+ Reforms

- A strong voice shaping queue reform proposals (code modifications, Gate 1 and Gate 2 criteria, methodologies etc.)
- Raising specific issues for storage and distribution customers
- Briefing members for their consultation responses and bringing alignment on key issues
- Responding to NESO proposals on a new financial instrument

Technical Limit Offers

- Successfully championing more consistency and better data in DNO technical limit offers
- Pushing for wider adoption

Transmission Asset Capital Contributions

- Pressing for changes to how distribution customers are charged for transmission upgrades

Curtailement reports

- Championing the roll-out of enhanced reports with ENA and DNOs

Grid Connections Working Group 2025 and beyond

TMO4+

- Providing a strong voice for industry in the implementation of TMO4+ - in particular exempting projects close to delivery
- Engaging in proposals for a new financial instrument
- Highlighting the importance of transmission / distribution re-ordering in connection reforms
- Impact on storage

G99

- Changing entry requirements for distribution level

End-to-end review

- Ofgem's workstream changing connections incentives and obligations

Distribution assets

- Keeping pressure on for Super Grid Transformer charging reform and enduring Technical Limit Offers



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Innovation and technology working group

Ray Arrell

Technical lead, ESN



Innovation and Technology Working Group

2024 so far

Long duration energy storage

- Engaging DESNZ around LDES policy support following our response to the consultation.
- Attending recent ministerial roundtable on long duration energy storage.

Other

- Session from CATL about their reduced degradation battery cell technology.
- Session with Elexon on their new market facilitator role

Innovation and Technology Working Group

2025 and beyond

Long duration energy storage

- A continued focus on LDES policy and market development, as the new cap and floor scheme is delivered.
- Engage with DESNZ Net Zero Innovation Programme (NZIP) to input to priority and design areas for future innovation funding.

Enabling technology innovation

- Explore new areas of electricity storage technology and enabling technology innovation (e.g. innovation in BESS noise management)



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Planning working group

Chair: Rebecca Windemer

Planning and communities lead, Regen



Planning Working Group

2024 so far

National Planning Policy Framework

- Pushing for storage projects to be designated as a Critical National Priority
- Highlighting challenges including planning resource and pressing for more planners
- Discussing planning barriers, thresholds and the NSIP regime
- Evidence gathering and aligning responses for more impact

Myth-busting

- Creating a myth-busting guide for storage for MPs with PRASEG

Stakeholder engagement

- Developing a best-practice guide for community engagement

Onshore wind

- Participating in onshore wind industry task force working groups with DESNZ

Planning Working Group

2025 and beyond

Spatial planning

- Providing a strong voice to align planning policy with strategic goals – Clean Power 2030 and the Strategic Spatial Energy Plan

Planning resource

- Continue pushing for more planning resources and training in local authorities to speed up planning timescales

Environmental permitting

- New DEFRA environmental permitting process for storage sites being developed

National Fire Chiefs Council

- New BESS guidance anticipated following consultation and responses

Working group dates

Markets and revenues working group – 3 December

Sustainability, safety and supply chain working group – 14 January

Grid connections working group – 6 March

Innovation and Technology working group - 5 December

Planning working group – 10 December



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Battery report and Balancing Mechanism dispatch transparency update

Chris Matson

Partner, LCP Delta



*ESN presentation:
Storage in the BM*

What clients are asking us to analyse...



Negative prices



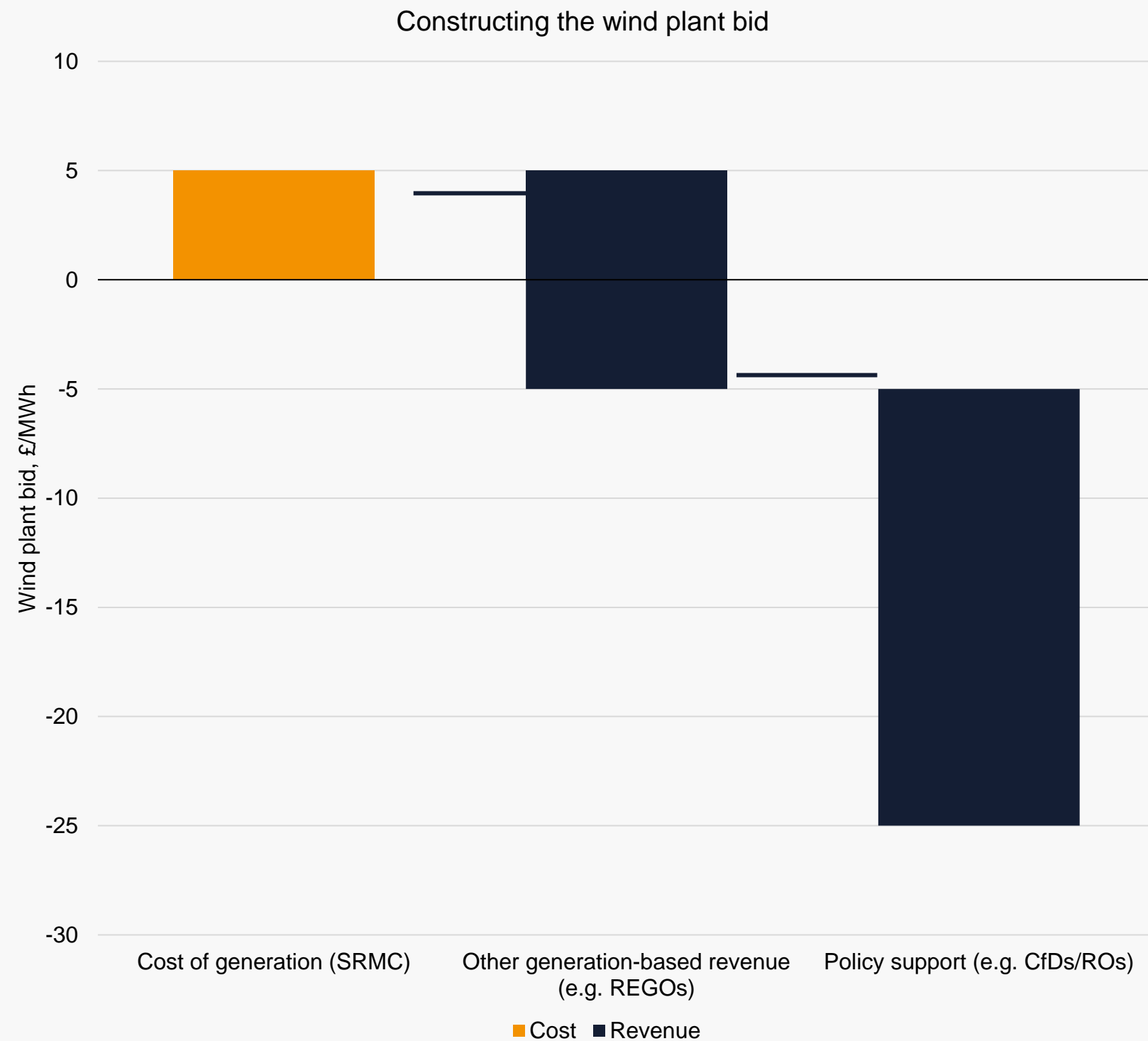
BM dispatch efficiency / skip rates



Scarcity: Supply crunch ... or overbuild?

Negative prices in the BM

Negative Prices: Generators bid negative when lost policy revenue exceeds the avoided costs of generation

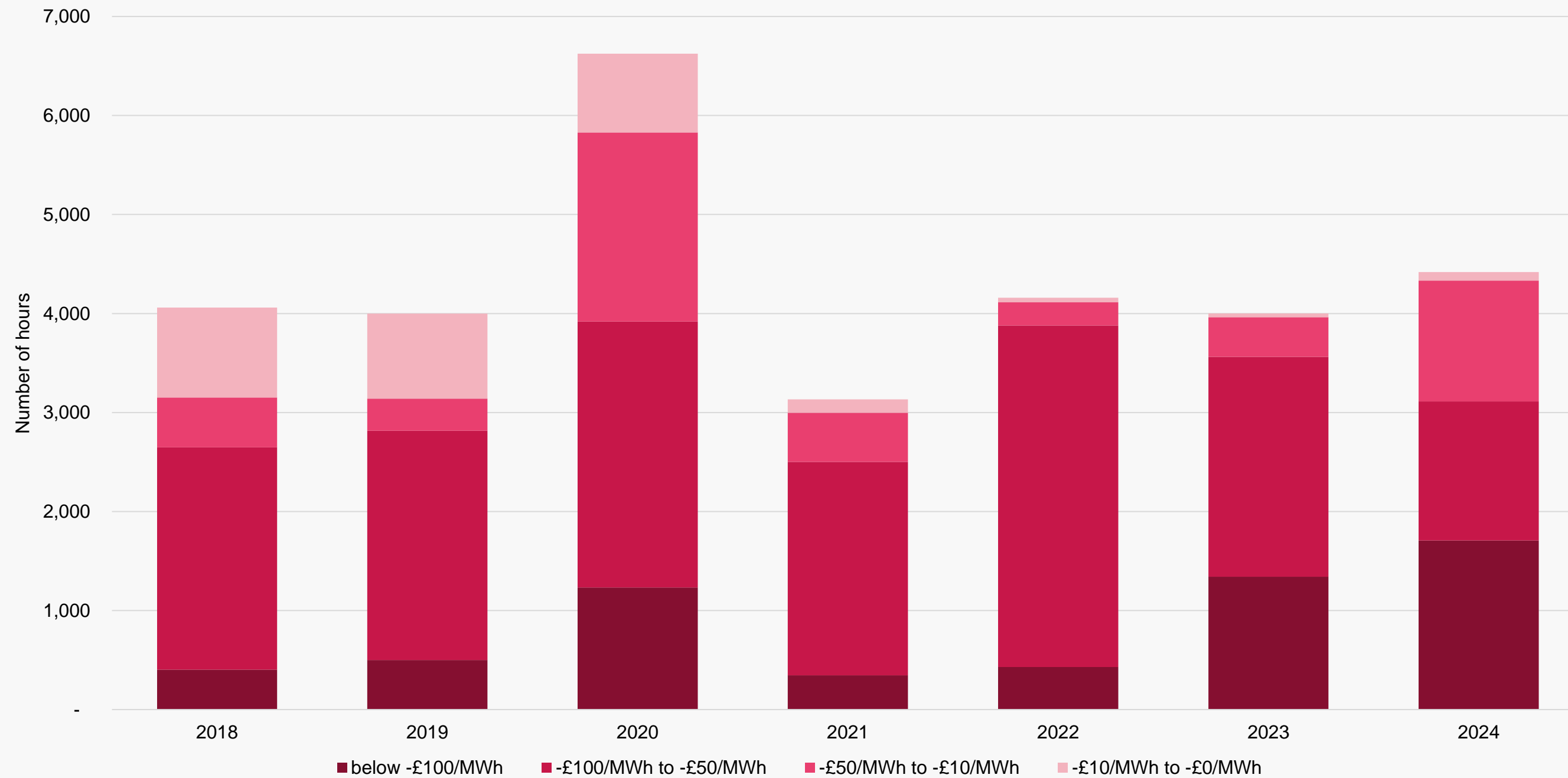


A wind farm may have a bid accepted in the BM to reduce generation because of:

- Locational constraints
- An excess of generation over demand

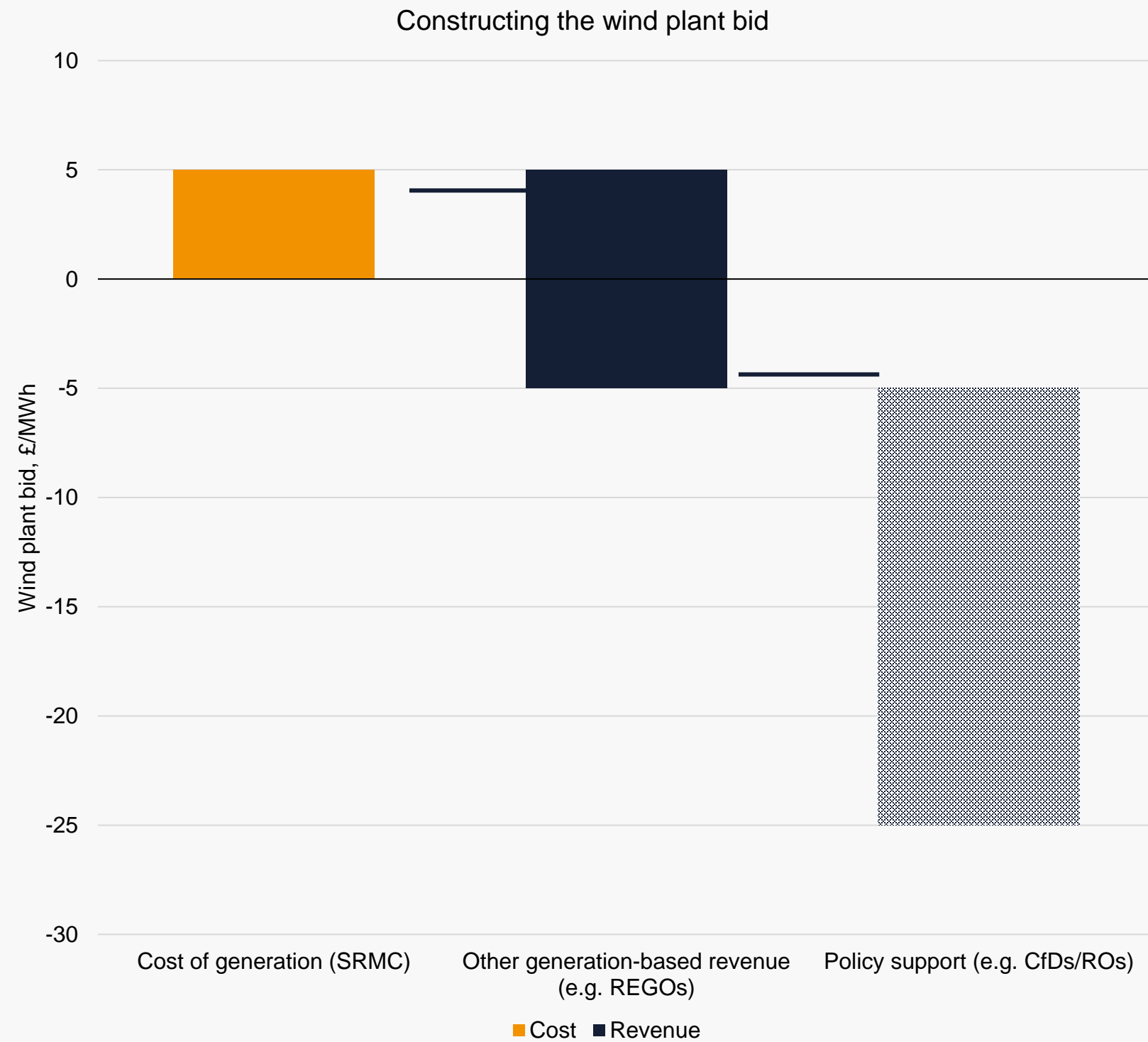
Negative priced BM bids are accepted in around half of all hours

Negative BM bid prices (accepted) – all bids



* 2024 annualised based on ytd

Negative prices: P462 would remove lost policy revenue from BM bids



P462:

- Compensate plant for lost support payment through separate mechanism
- No longer need to include in BM bids
- Reduces scale off negative priced bids

P462: why is it being considered?

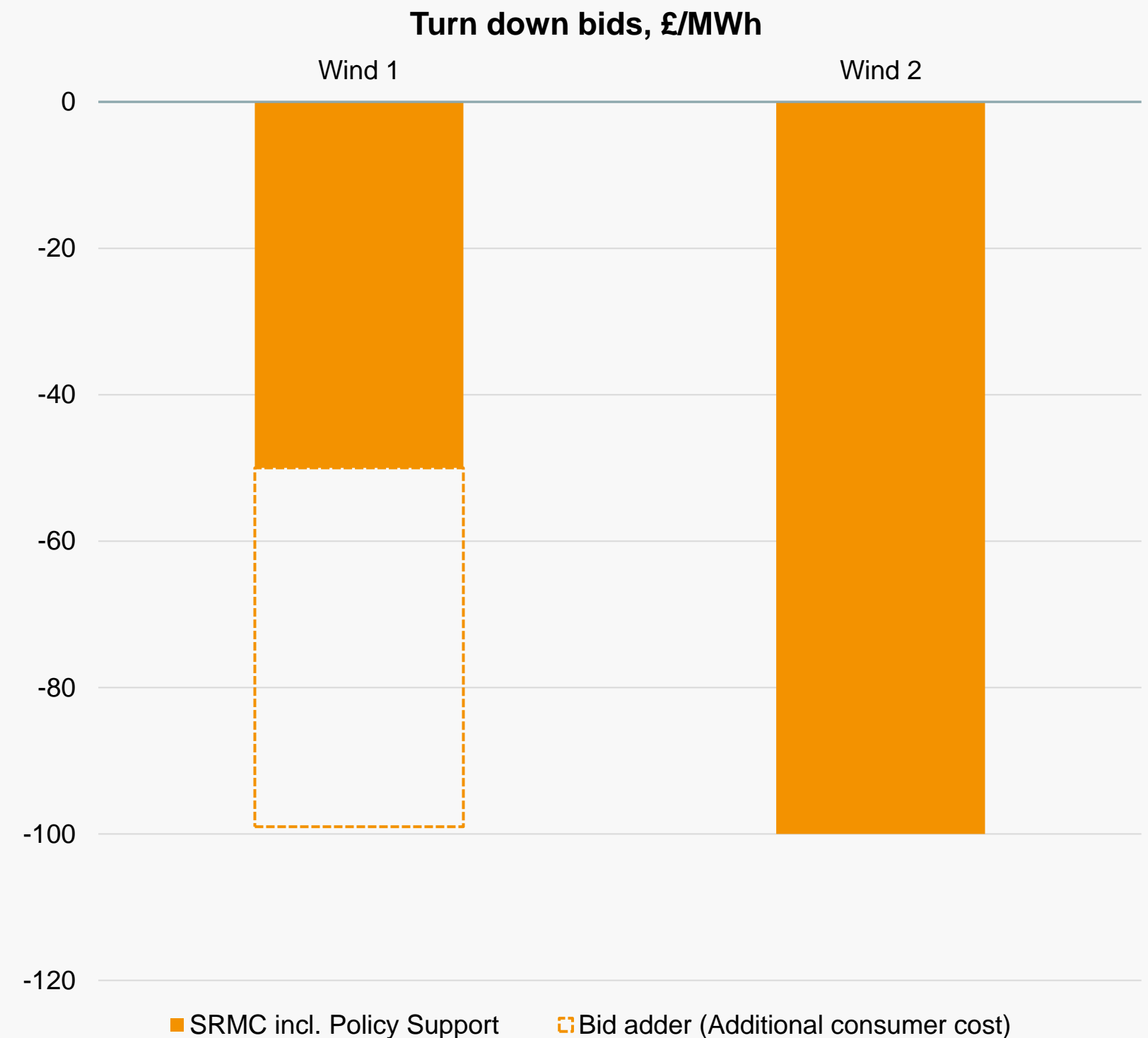
Why is it being considered?

- Reduce consumer costs
- Increase transparency
- Fairer competition

Key potential benefit:

- Reduce system costs
 - Remove market distortion
 - More efficient pricing, dispatch, investment

Example 1: One wind turn down needed



P462: things to consider

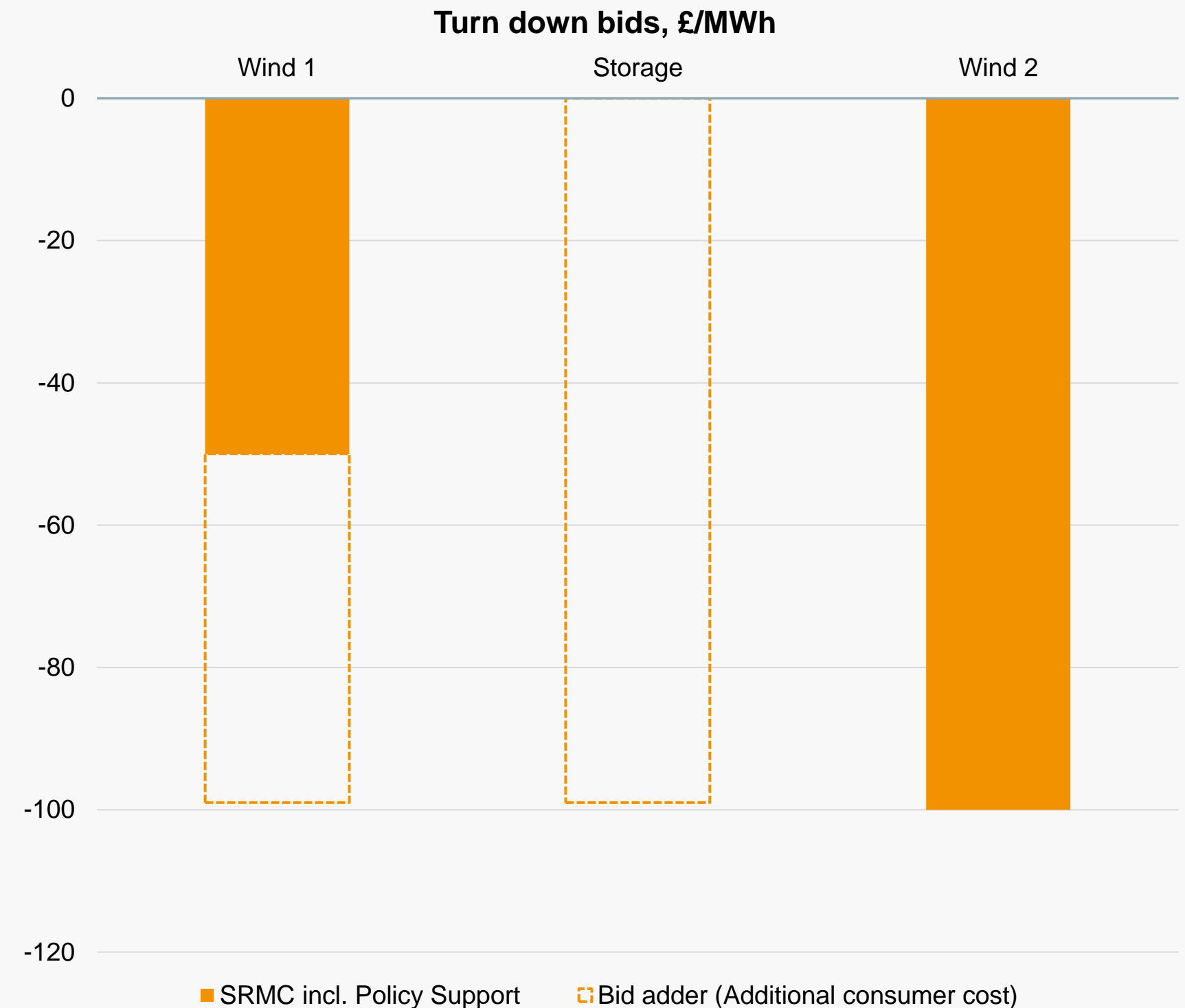
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Key potential benefit:

- Reduce system costs
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Example 2: Equivalent of two wind turn downs needed



P462: things to consider

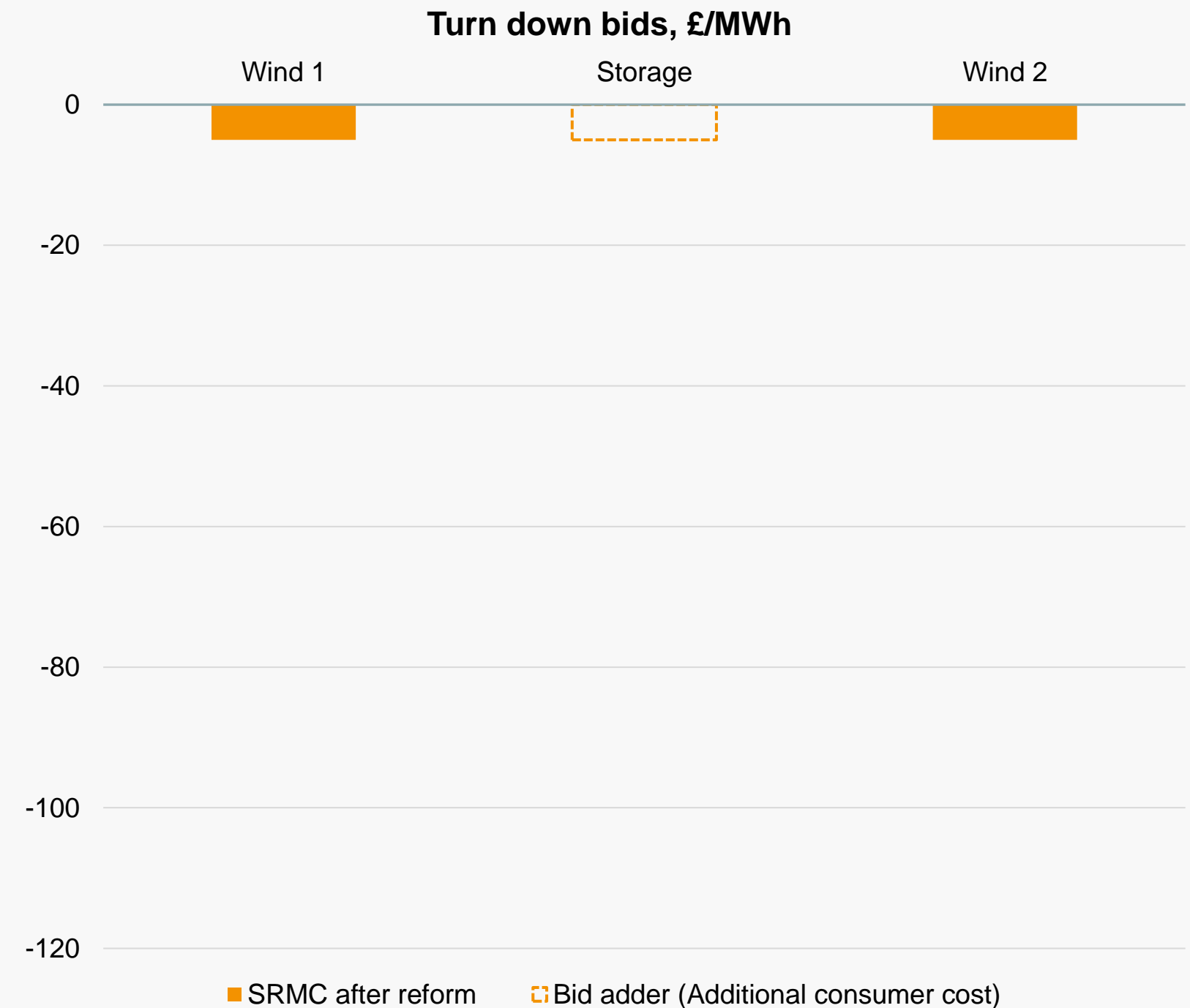
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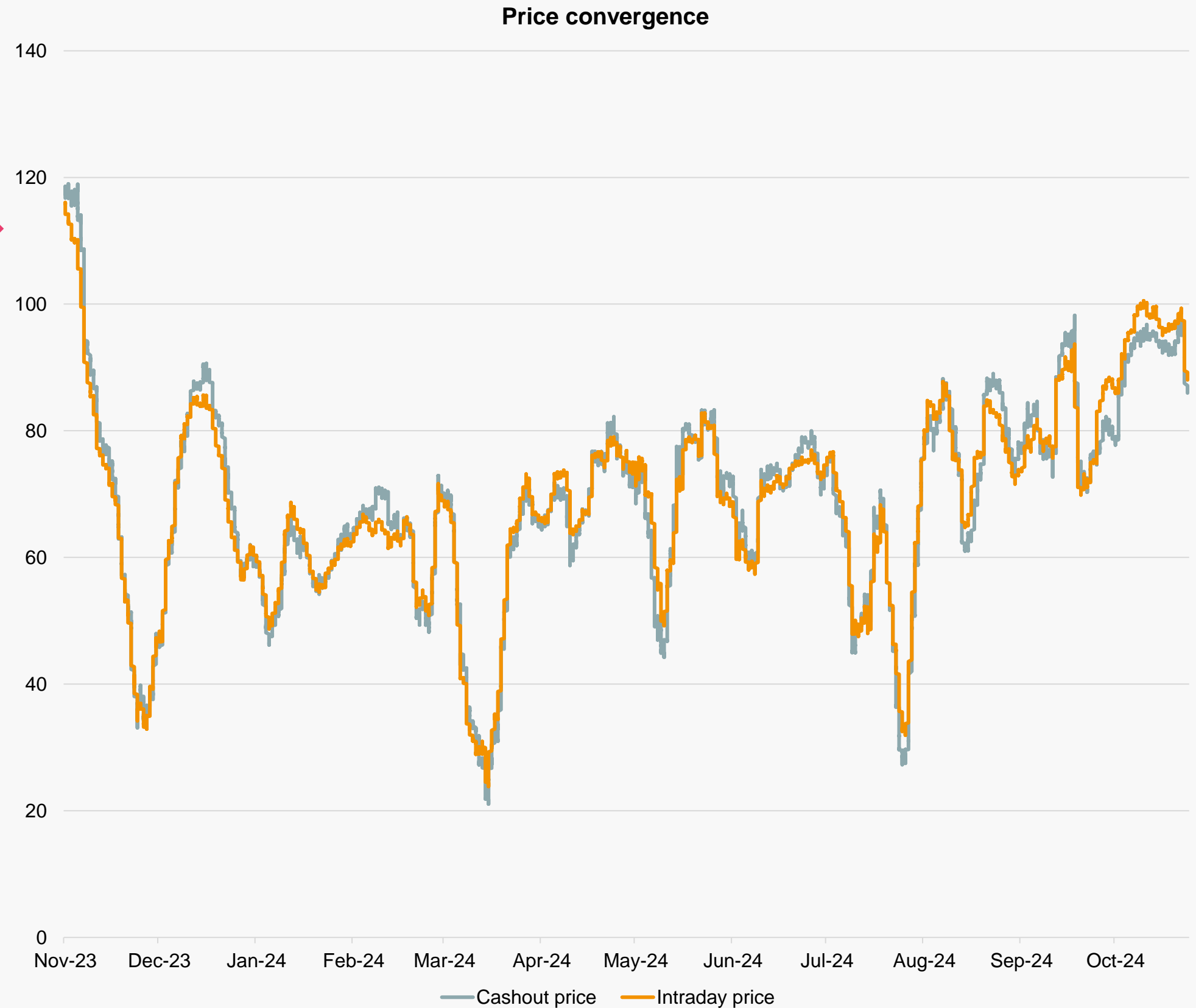
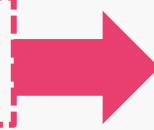
Example 2: Impact of P462



P462: things to consider

Impacts:

- Negative bids & cashout prices reduced
- Negative prices in **wholesale markets** reduced
- Reduced opportunities for **storage** and other flexibility



P462: things to consider

Impacts:

- Negative bids & cashout prices reduced
- Negative prices in **wholesale** markets reduced
- Reduced opportunities for **storage** and other flexibility

Complications:

- Offers not included
- TCLC should prevent some of this behaviour (system actions)
- Interconnector flows distorted
- **Other market distortions** remain, e.g. carbon price

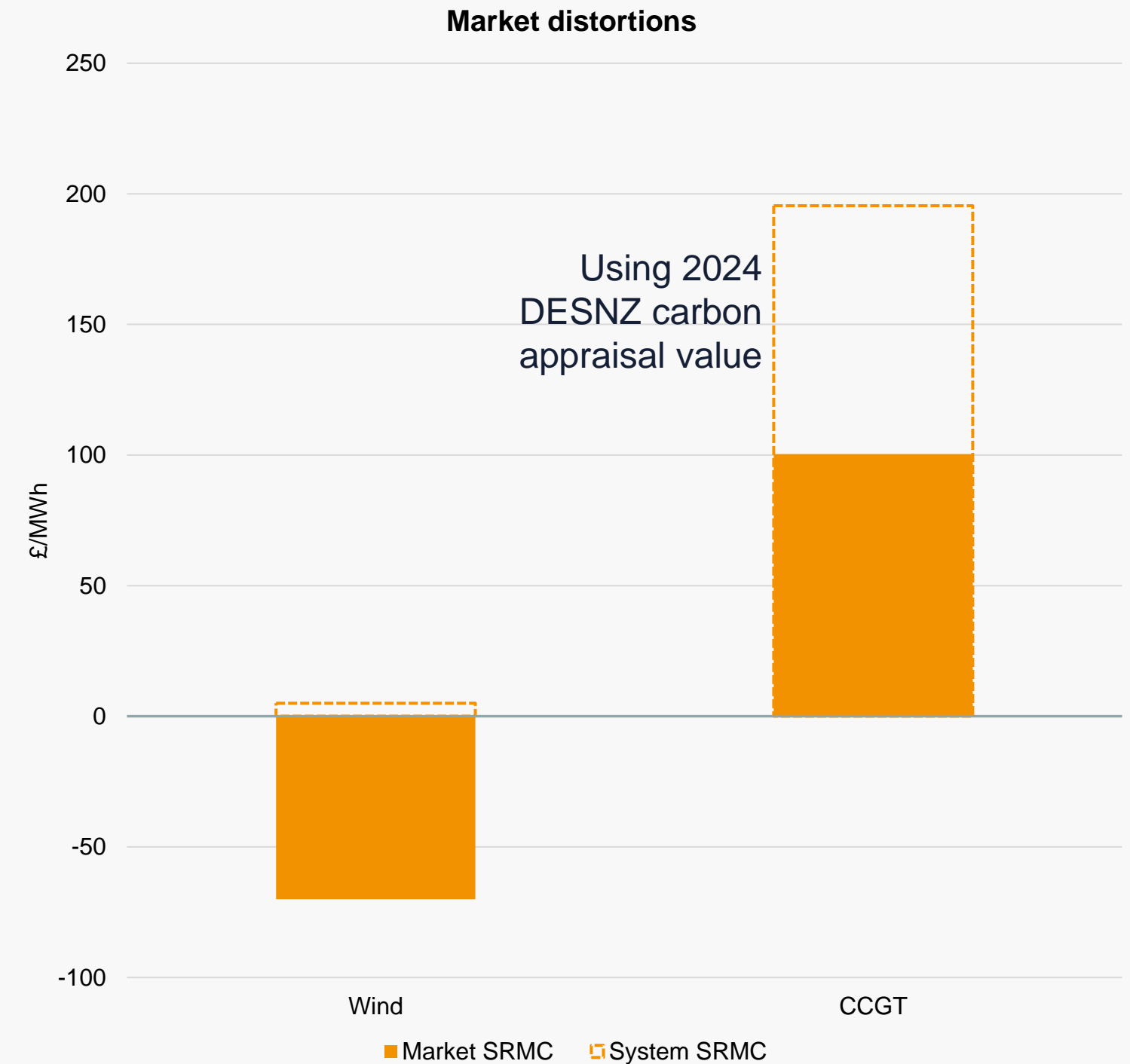
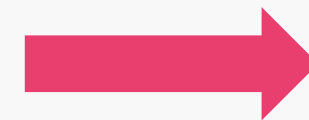
P462: things to consider

Impacts:

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- Negative prices in **wholesale** markets reduced
- Reduced opportunities for **storage** and other flexibility

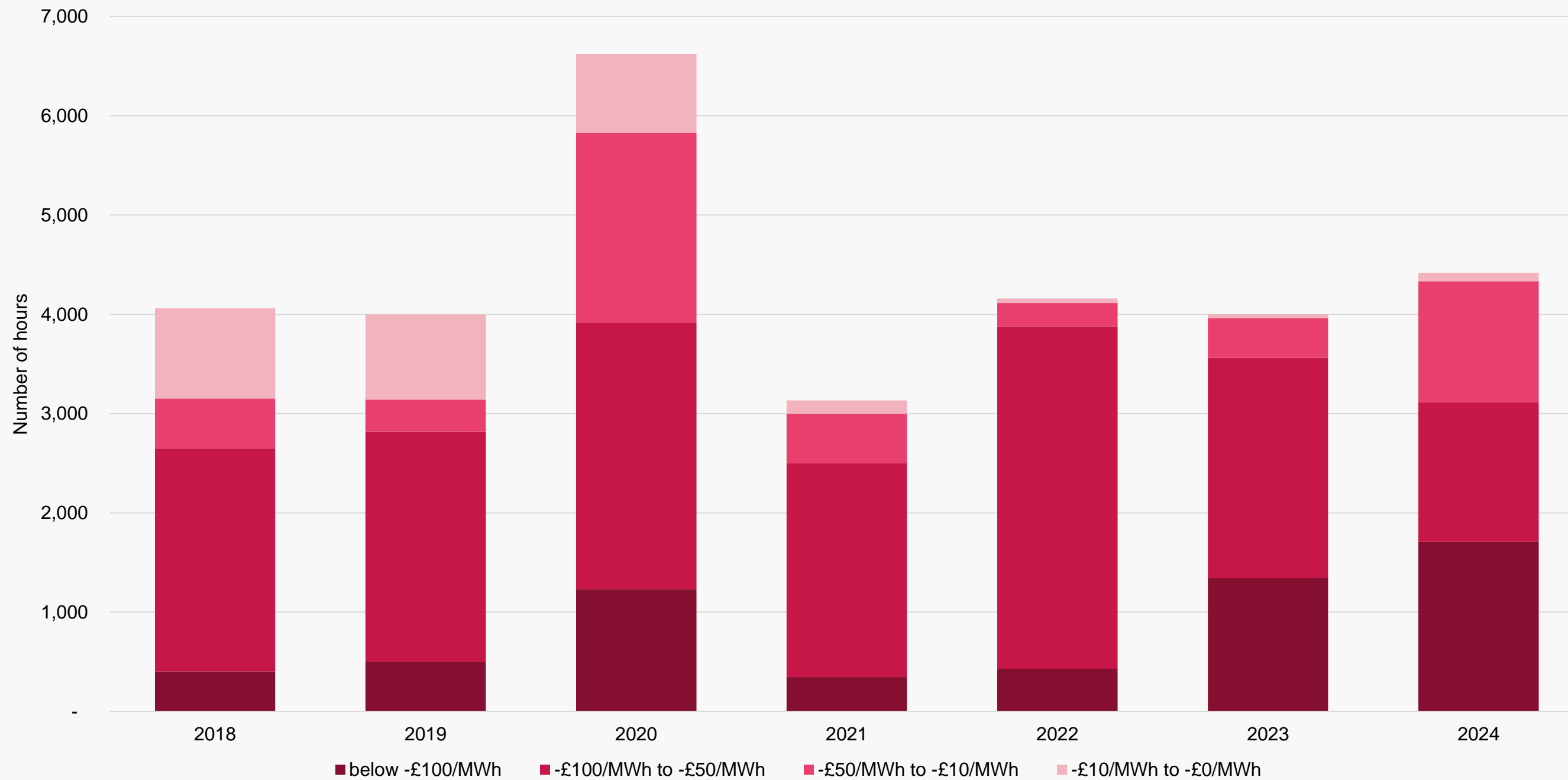
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Negative priced BM bids are accepted in around half of all hours

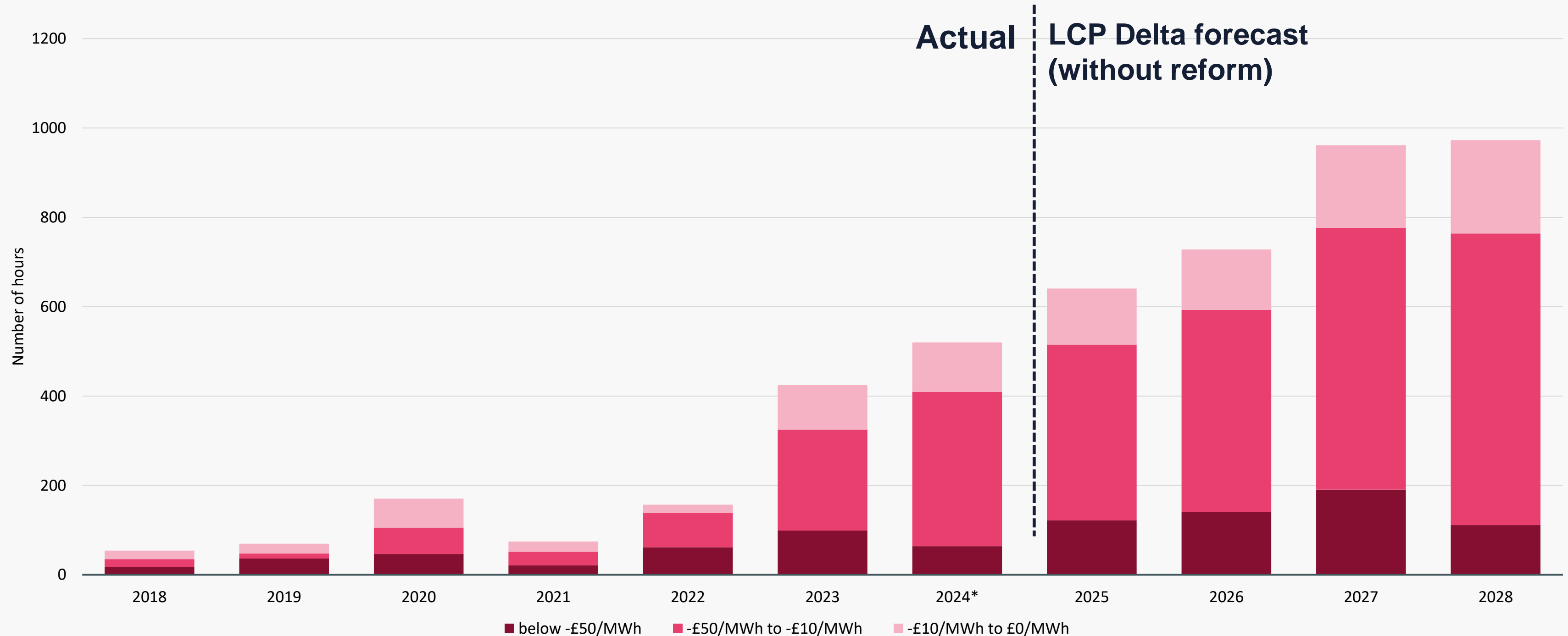
Negative BM bid prices (accepted) – all bids



* 2024 annualised based on ytd

The growing opportunity from negative prices would be reduced by P462 LCPDelta

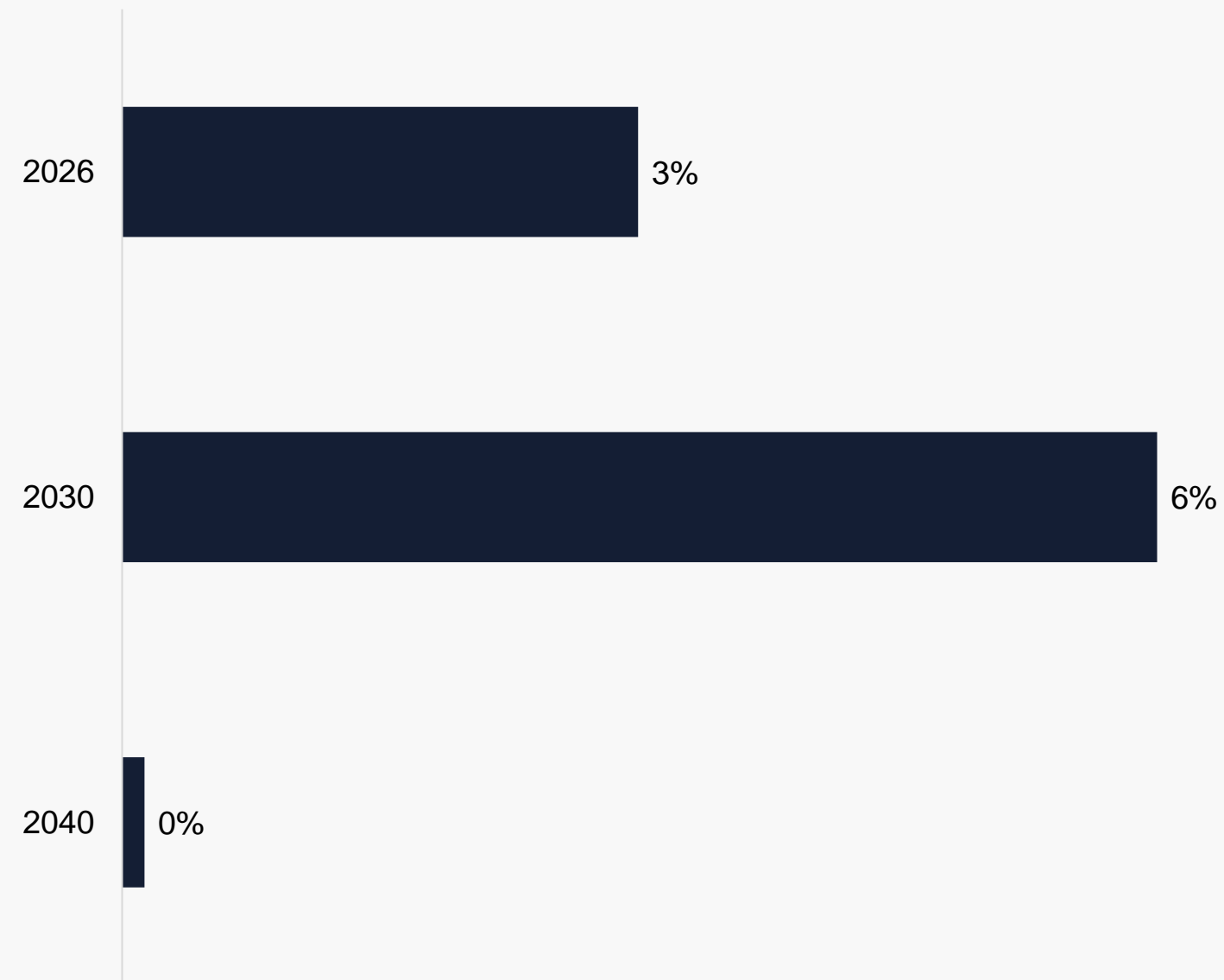
Negative BM (cashout) prices



* Annualised based on 2024 ytd

The growing opportunity from negative prices would be reduced by P462

Impact on gross margin for BESS



* Annualised based on 2024 ytd

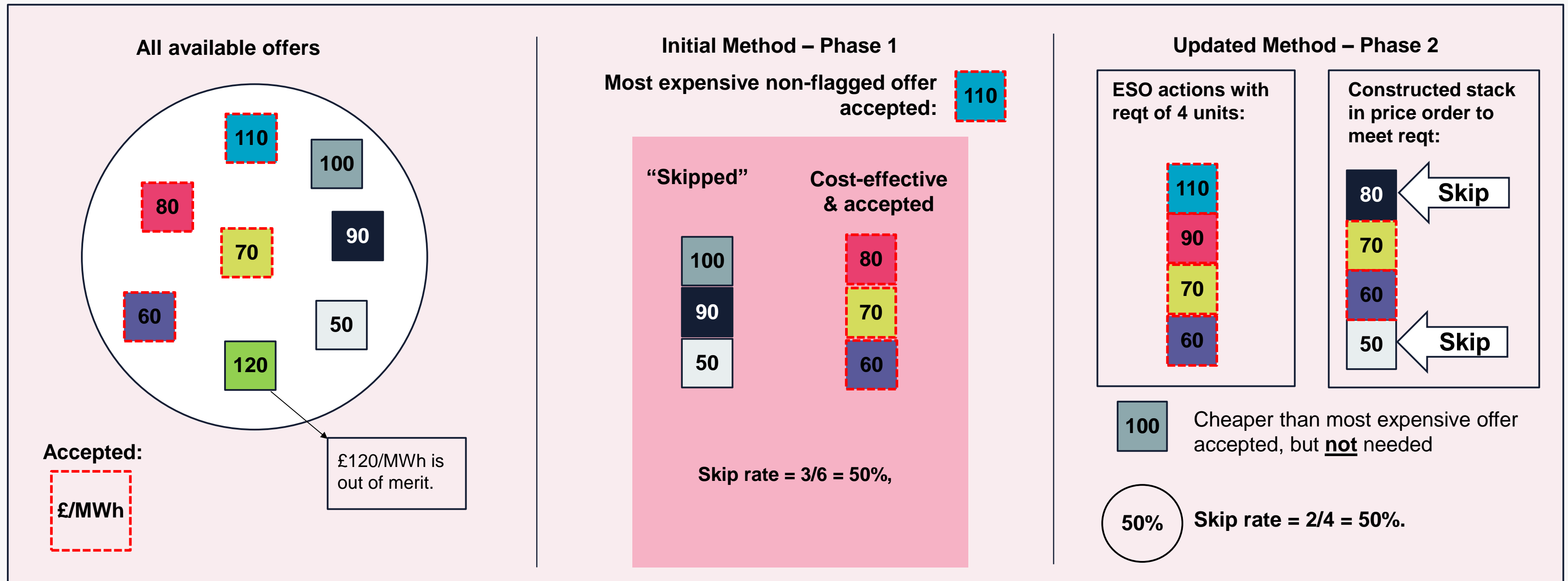
Dispatch efficiency in the BM

Methodology developed with NESO to track the rate & cost of BM skips



30 min
granularity

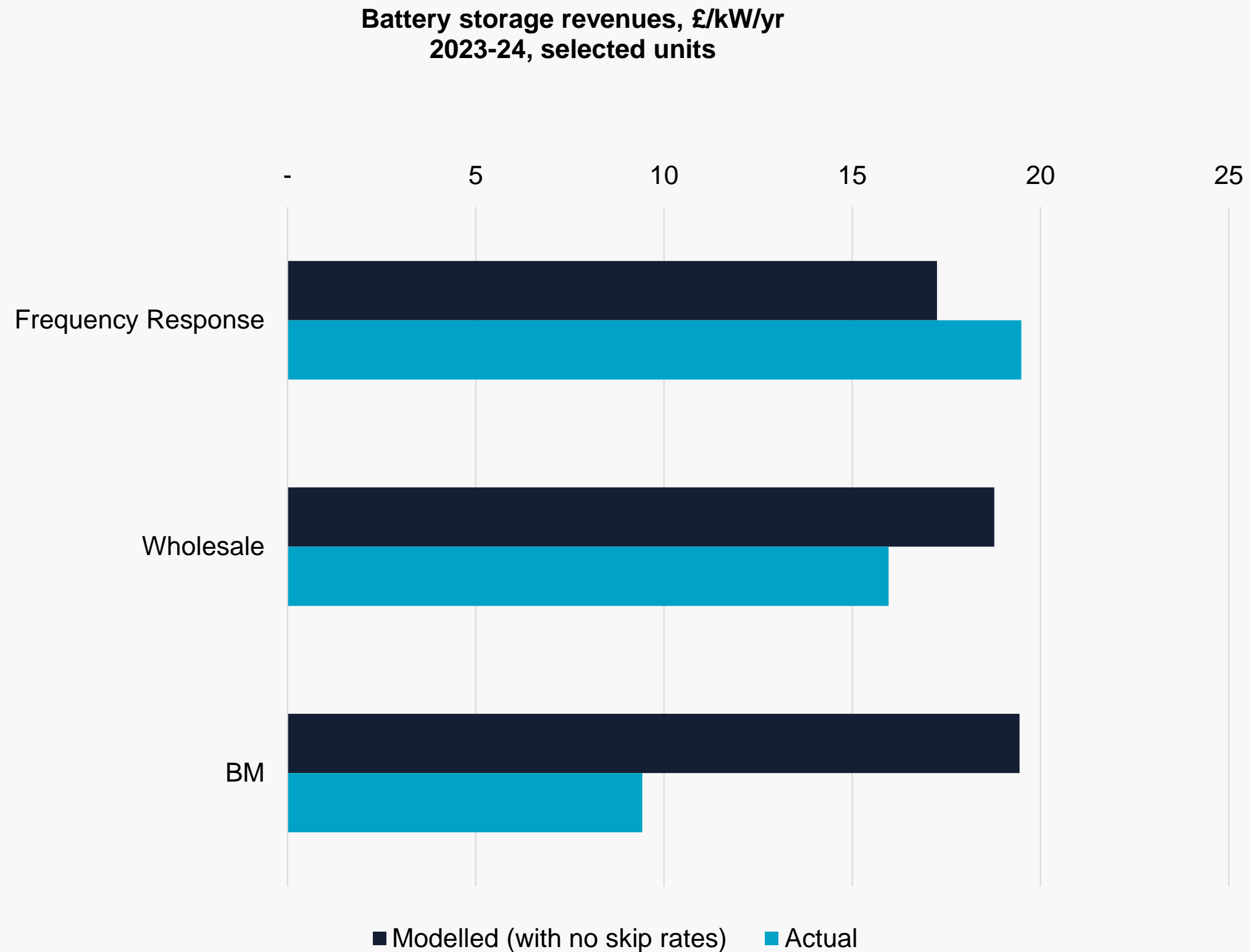
Methodology developed with NESO to track the rate & cost of BM skips



30 min granularity

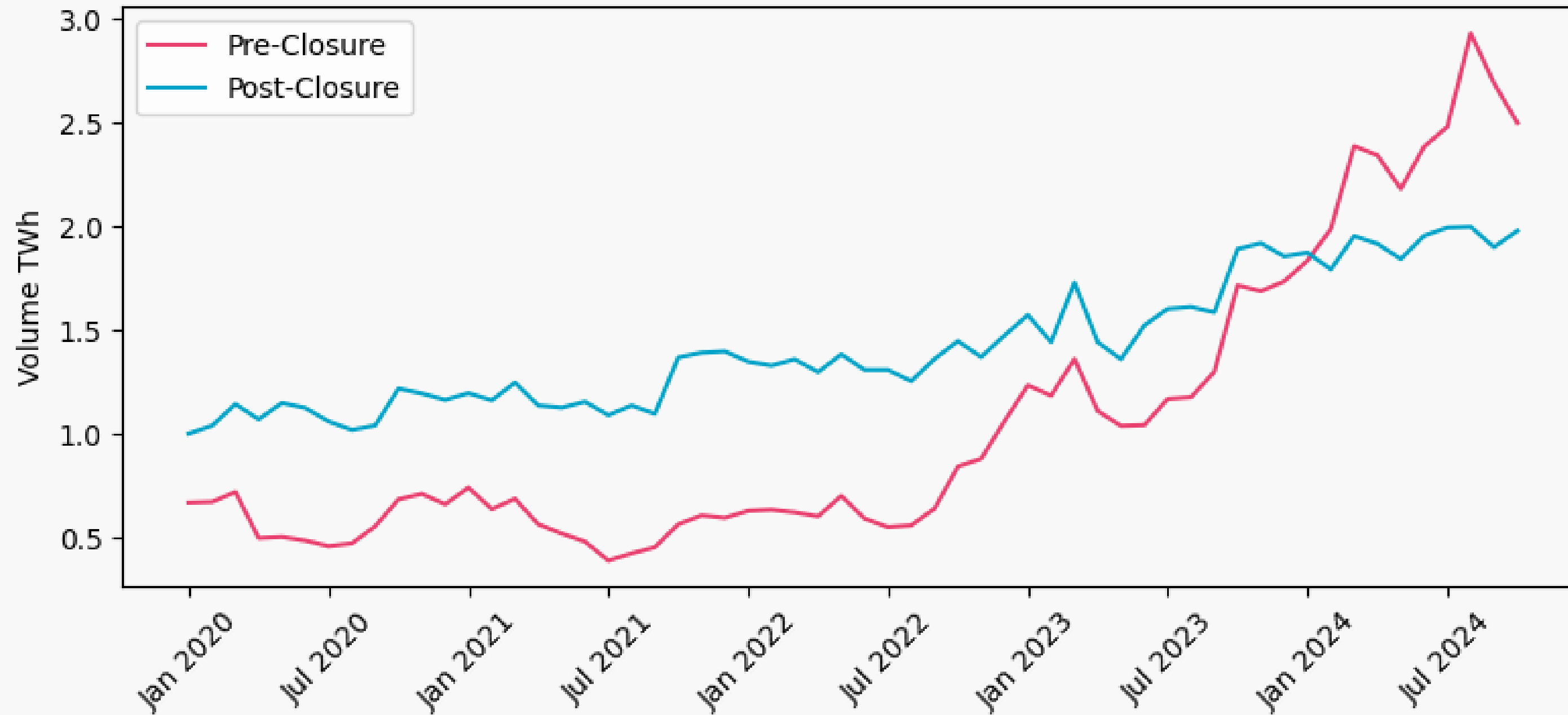
5 min granularity

Our own analysis shows skips are impacting battery BM revenues by ~50%



Outside of the BM: Intraday liquidity

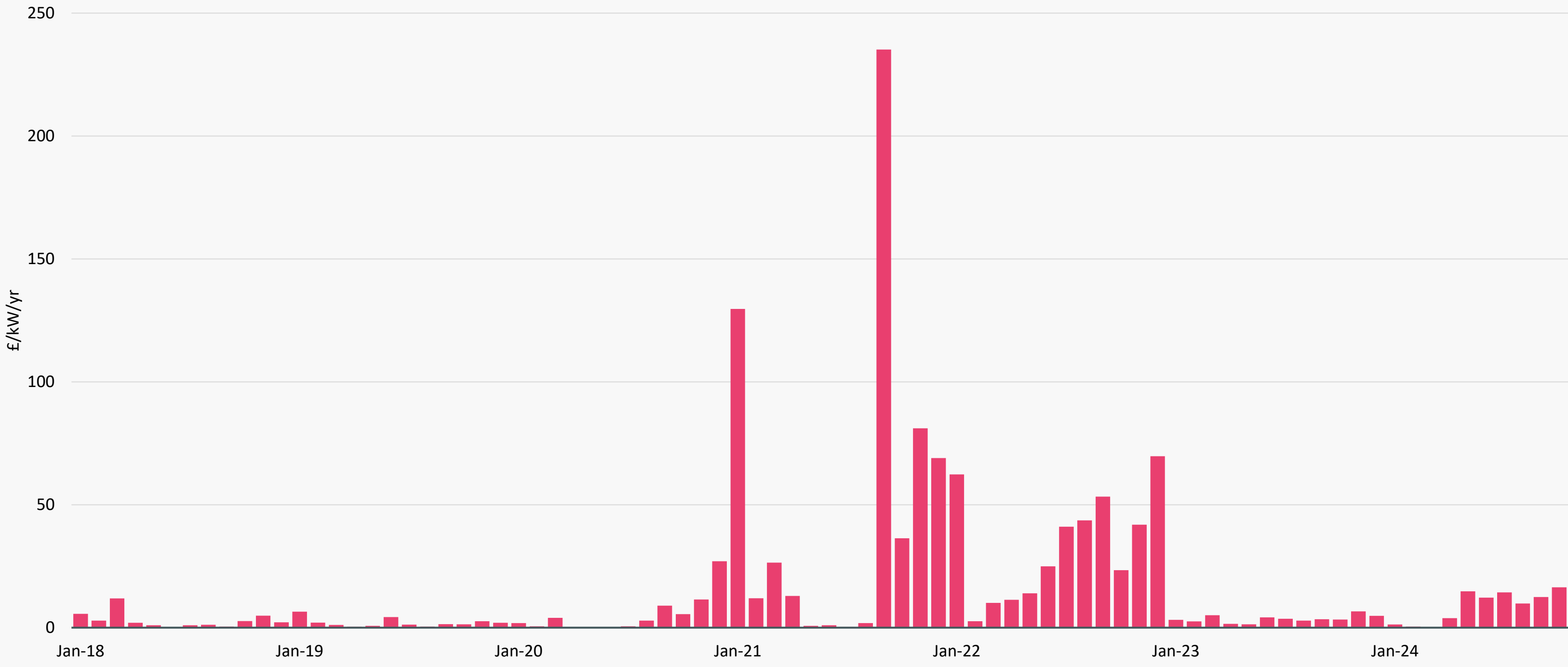
Volume traded pre- and post- gate closure



Late 2020s: Supply crunch or overbuild?

Scarcity can add significant value

Annualised Scarcity Value in GB power prices

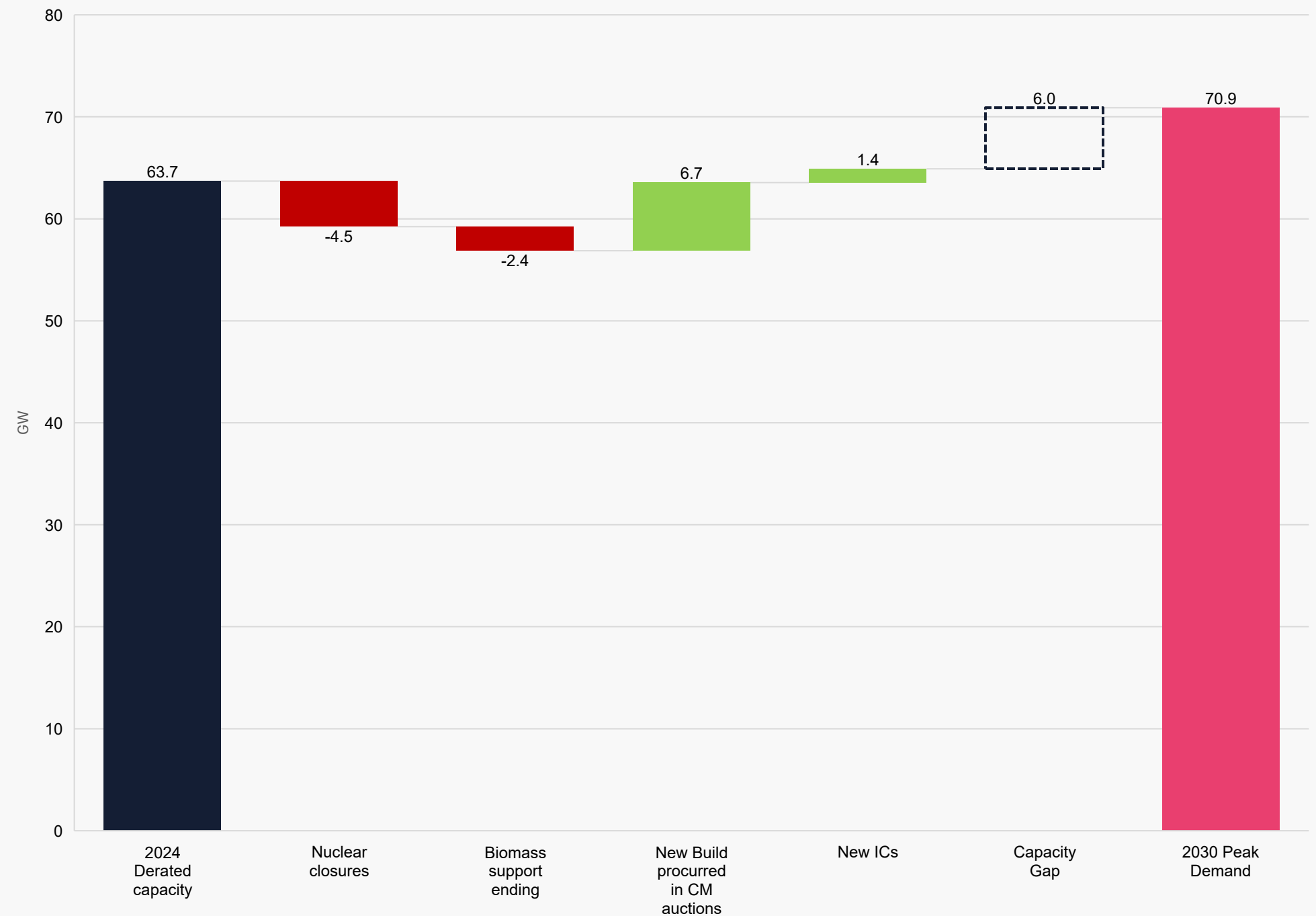


Scarcity looking forward: Do the late-2020s pose a supply crunch or a battery overbuild?

Supply crunch

- Demand growth
- Nuclear retirements
- Biomass support ends
- Old CCGT needs to run more flexibly
- High capex and WACC
- Unlikely to be new PHS, CCUS, H2P, nuclear in time
- Case study: Ireland

Known capacity closures and additions compared to 2030 Peak Demand



Clean Power 2030 and the role of storage in the future energy system



Claire Dykta
Director of strategy
& policy, NESO

Semih Oztreves
Global director network
infrastructure BESS,
Zenobe Energy

Rosalind Smith-Maxwell
Director, Quinbrook
Infrastructure

Mike Ryan
Commercial director,
Constantine Energy Storage

Louise Dalton
Partner,
CMS

Grid connection reform: Reshaping the development process



**Merlin Hyman,
Chief executive,
Regen**

**Jack Presley Abbott,
Deputy director for system
planning and connections, Ofgem**

- Significant change in the energy system as we decarbonise – LCT growth, asset closure, demand growth
- Lack of strategic approach to planning hampering dealing with increasing complexity
- Ofgem addressed this concern through introduction of strategic approach to transmission planning and then regional plans (CSNP and RESP)
- The Winser Review led DESNZ to commission a strategic spatial energy plan (SSEP), to set out an overall system blueprint to guide these

Strategic Spatial Energy Planning (SSEP)
This lays out the 'blueprint' of the energy system assets that we need to meet net zero

Informs

Transmission Network Needs

Regional/Dist. Need

Market Signals

Delivered through

RIO/bespoke funding

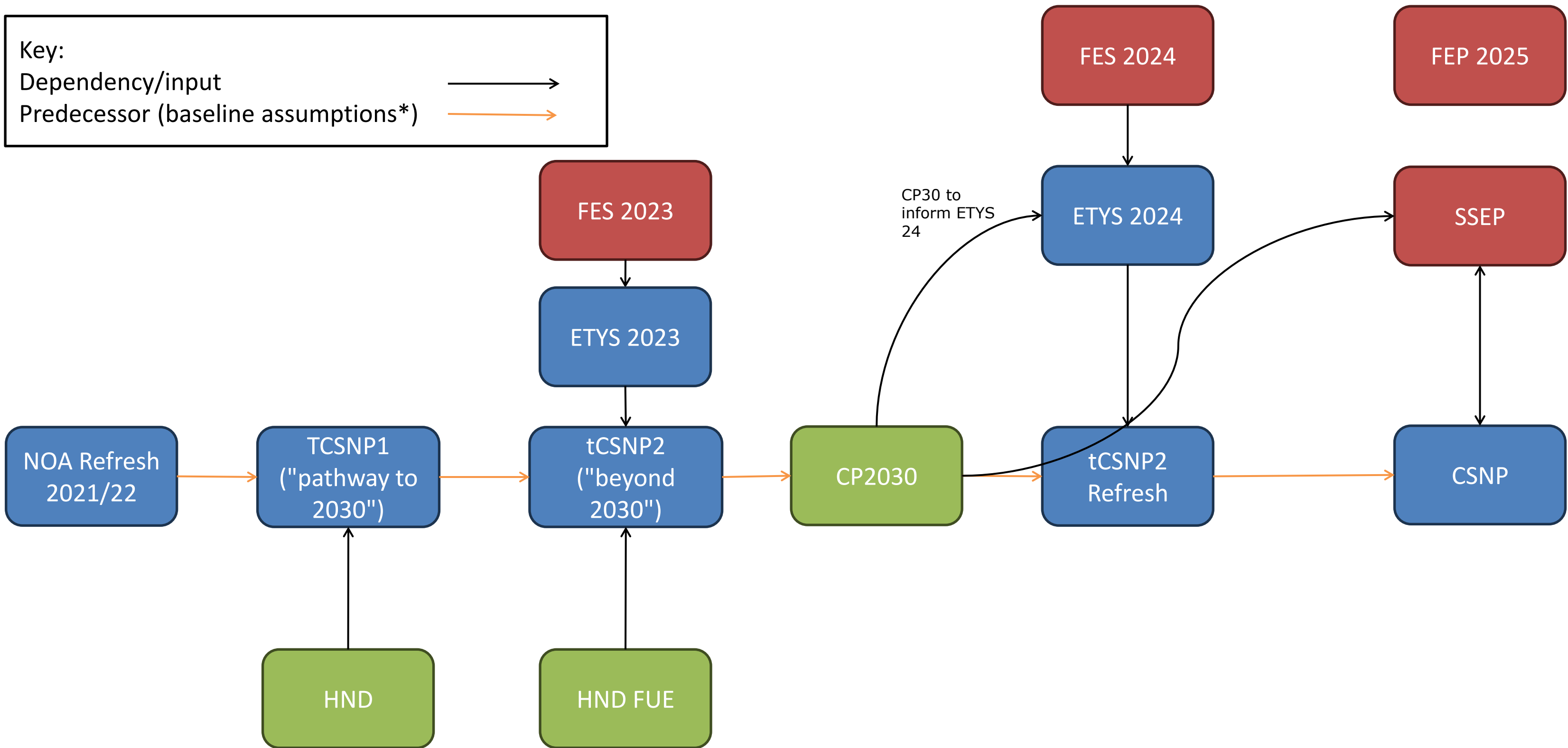
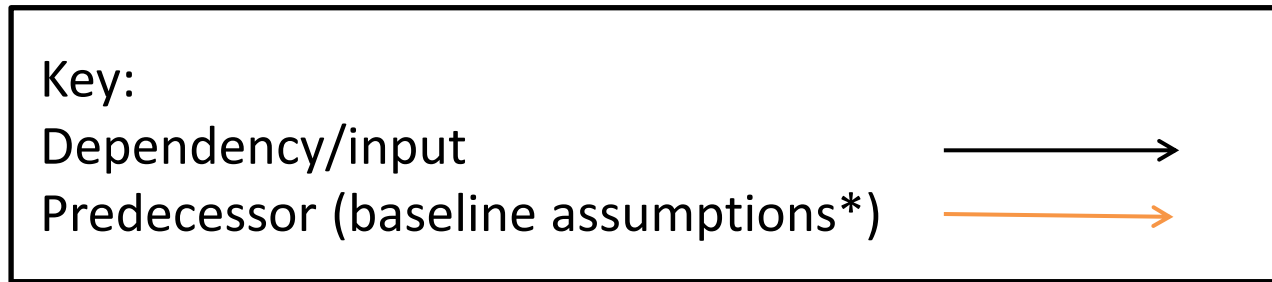
Market Mechanisms & policies

Enabled by

Reformed connections process enables timely connection of needed projects

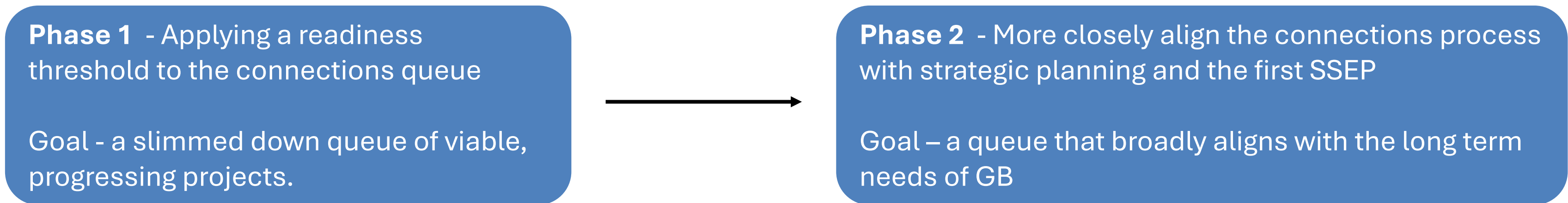
Drives

Ensuring that the right generation, network, and storage technologies are built in the right place and at the right time

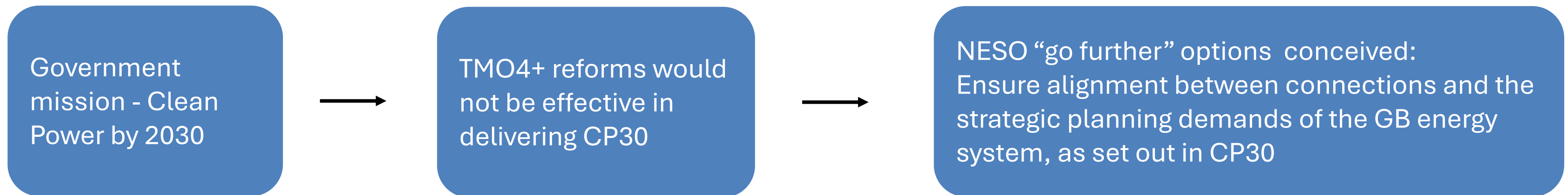


**Note: changes to "baselined projects" (esp. delivery date) may have impact on successive publication validity*

Connections Reform was initially envisaged in two phases

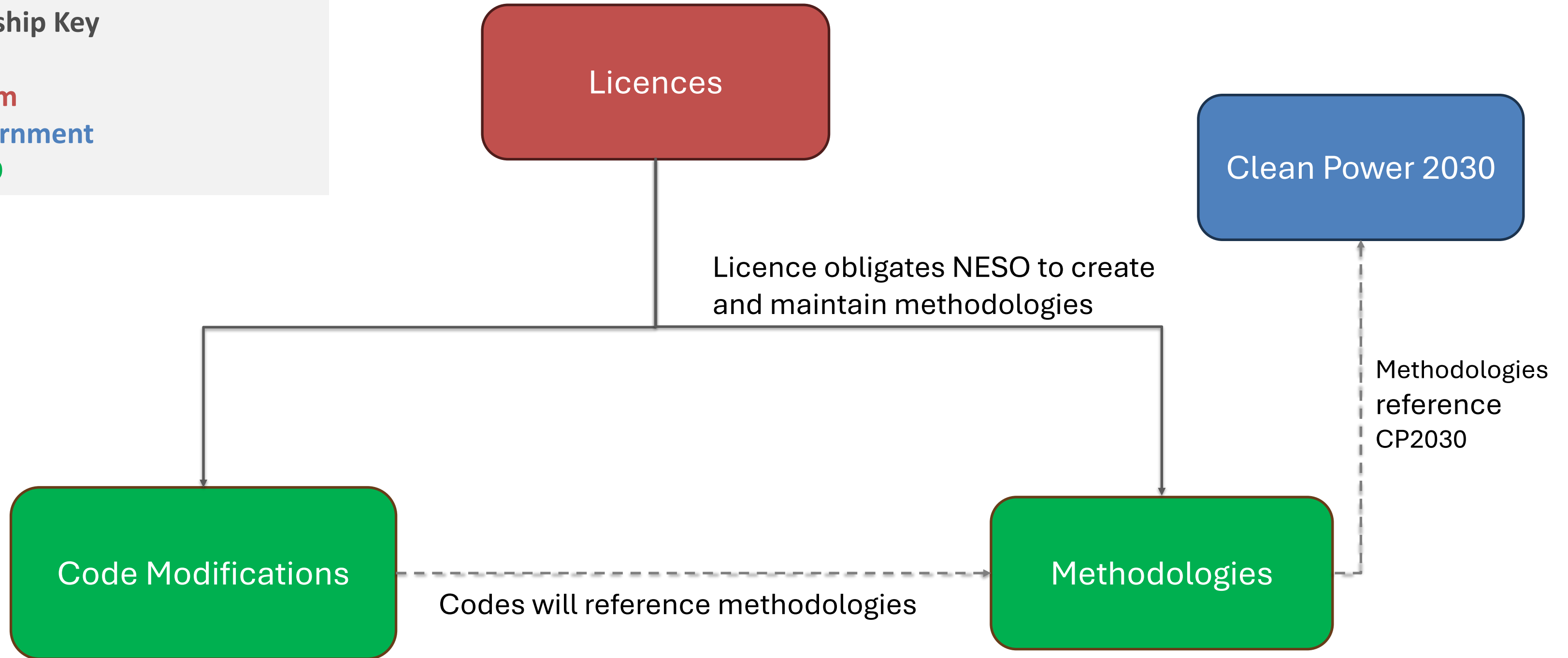


However, there is now a need to accelerate that process of alignment



Ownership Key

- **Ofgem**
- **Government**
- **NESO**



- *CMP434 & CM095 – Implementing Connections Reform*
- *CMP435 & CM096 – Application of Gate 2 Criteria to existing contracted background*

- *Gate 2 Criteria*
- *Connections Network Design Methodology*
- *Project Designation*

Long Duration Energy Storage: Next steps for an emerging market framework



Ray Arrell
Technical lead,
ESN



Richard Campbell
Head of LDES technology
and economics,
DESNZ



Kacie Mccolgan
Senior policy advisor,
LDES investors and
markets, DESNZ



Julian Jansen
Senior director,
strategy markets and
policy (EMEA), Fluence



Sophie Orme
Commercial
director,
Rheenergise

Consultation response – Key messages

- In our 10th Oct publication, we confirmed Government's position that **a cap and floor is the most appropriate mechanism** to enable investment in LDES technologies.
- **Ofgem has agreed to act as the regulator for the LDES**, which includes the role of investment framework delivery body.
- We have confirmed our intention to have **2 streams for application**:
 - Stream 1: Mature technologies, 6-hour* duration, 100MW minimum capacity
 - Stream 2: Novel technologies, 6-hour duration and 50MW* capacity
- We have **not set a capacity target for LDES** at this time. However, we will work with NESO and Ofgem to set out indicative ranges ahead of the application windows.
- The scheme will be **technologically agnostic** but applicants must demonstrate that support is needed and meets our principle of additionality.

Subject to review

LDES – Next Steps

Dec 24

- Ofgem plan to publish an **Open Letter in December** to provide further detail on their role as delivery body and to seek feedback from industry on key elements of the scheme

Q4 24

- We are planning further informal engagement opportunities with industry before Christmas on outstanding policy questions, including an **Ofgem-led webinar in December.**

Q1 25

- A **Technical Design Document will be published in winter 2024/25**, setting out further information on outstanding questions from the consultation.

Q2 2025

- We are currently working with Ofgem on the detailed design of the scheme and **will aim to have the first window open to applications in 2025.** This will allow for LDES projects to be delivered before 2030 and beyond.

Closing remarks

Rachel Hayes

Director, Electricity Storage Network



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**For more information
on ESN, including
membership
options, scan here:**



The nomination deadline:
Wednesday 18 December



THE GREEN ENERGY AWARDS

2025

- 🏆 Clean Energy Project
- 🏆 Community Energy Initiative
- 🏆 Just Transition Scheme
- 🏆 Local and Public Sector Leadership
- 🏆 Net Zero Energy Developer
- 🏆 Net Zero Energy Pioneer
- 🏆 Whole System Innovation



Working group dates

Markets and revenues working group – 3 December

Sustainability, safety and supply chain working group – 14 January

Grid connections working group – 6 March

Innovation and Technology working group - 5 December

Planning working group – 10 December

All 2025 dates confirmed

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Thank you for joining us

Drinks will now be served in the Flowers and Lovelace rooms.

Followed by a reserved room at the Wellington pub at 351 Strand, WC2R 0HS, from 18.30. First round on the ESN!

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