

Dispatch Efficiency Beyond Energy

Hannah Kirk Wilson, Dispatch Transparency Programme Director (London & Glasgow)

Vivian Ehbima, Data Scientist (Glasgow)

Saskia Barker, Wholesale Market Strategy Manager (Glasgow)

Sam Mancey, Data Scientist (London)

Ben Noone, Wholesale Market Strategy Lead (London)

What we'll cover today...

Progress to date on skip rates

- Improvements in energy skip rates
- Key methodology updates (including GC0166 and other changes)

How Constraints influence dispatch efficiency

- Work underway on skips behind constraints and improving transparency

Focus topic: Storage behind constraints

- The challenge we are seeing in the market
- Options being considered to address this
- Trade-offs and potential impacts

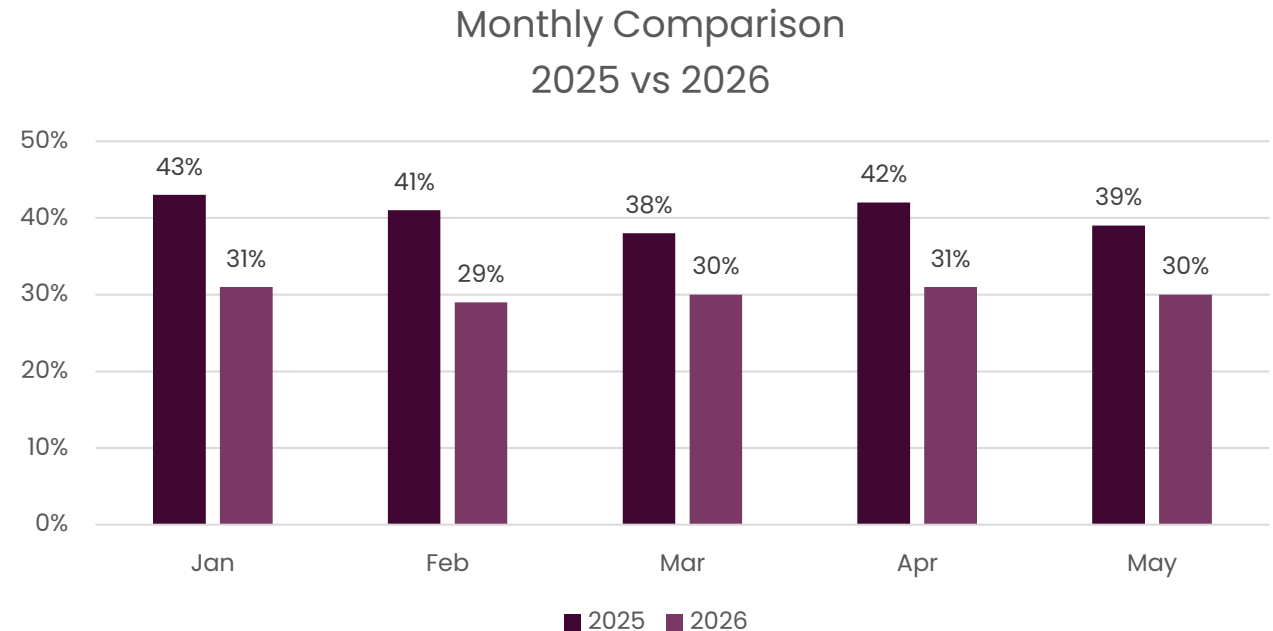
Your input

- Gather feedback on the shortlisted options
- Sense-check direction and priorities
- Open discussion to shape next steps

We have made progress in reducing energy skips which are circa 10 percentage points lower than last year

There have been year-on-year improvements every month in 2026

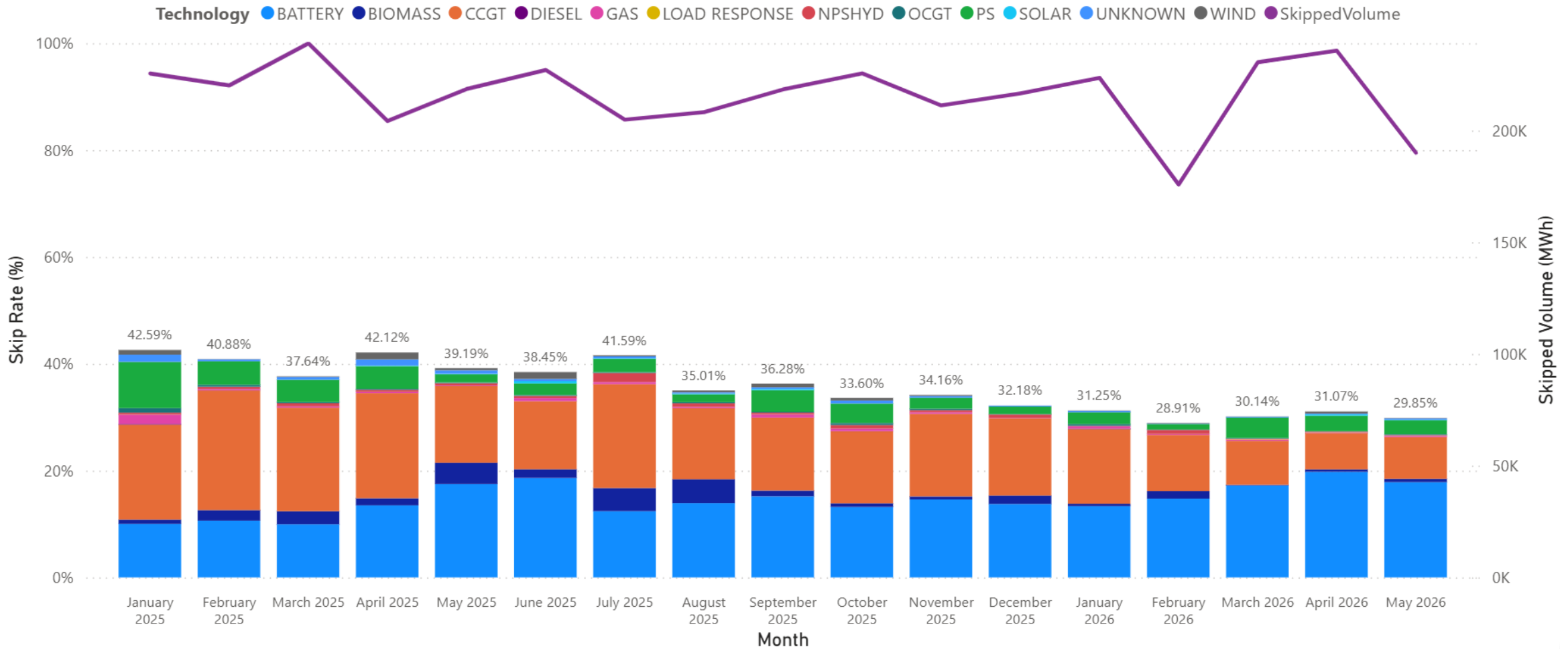
This can be attributed to better tools in the control room that support dispatching in merit order and increase visibility of skips



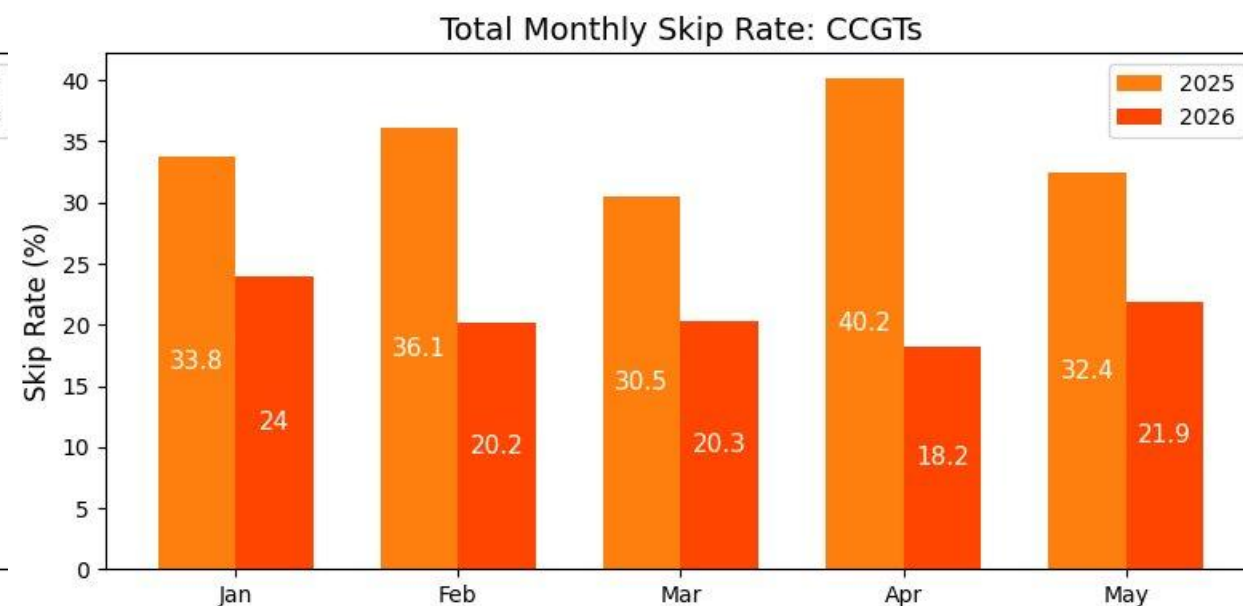
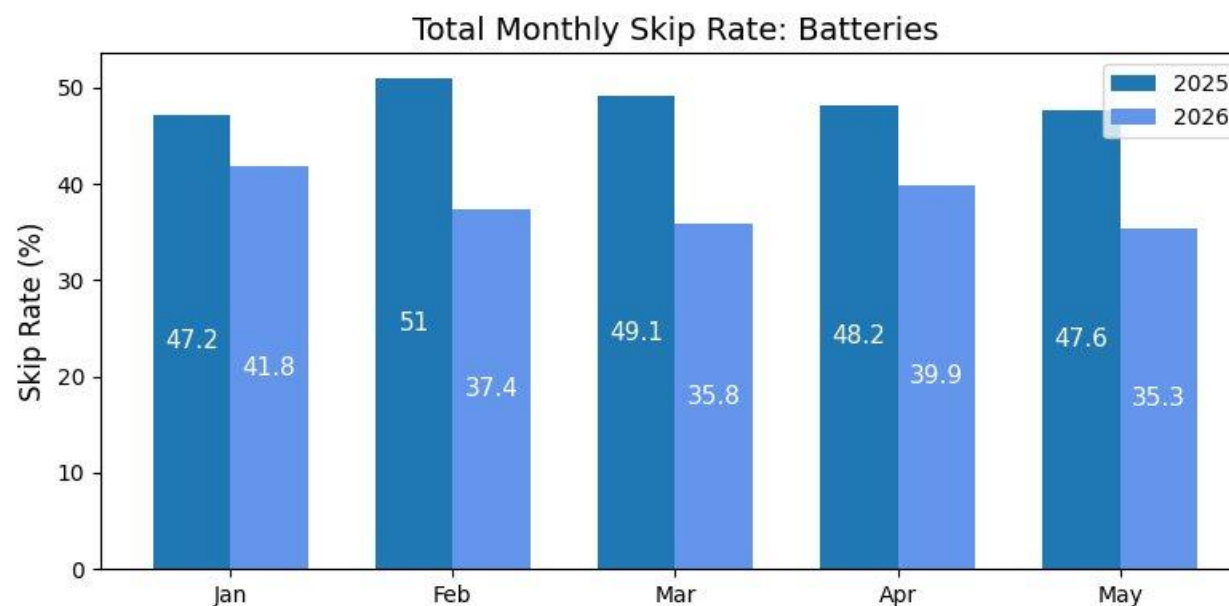
Our Root Cause Analysis consultancy project concluded in April 2026. We have uploaded a slide pack with all hypotheses and findings [here](#)

Please let us know if you would be interested in a webinar to talk through these findings

Batteries and CCGTs continue to make up the majority of skipped volume and have the largest in-merit volumes



Battery-specific skip rates have remained constant this year with more batteries in-merit and accepted



Battery-specific skip rates have remained constant, confirming that more batteries are in-merit and we are accepting more batteries

Battery skip rates have remained relatively constant (with February-April staying below January). Despite the rising skipped volume, in-merit volume is increasing at the same (if not greater) rate.

The CCGT skip rate also shows a decline, with a notable downwards trend since January.

Methodology Changes – Energy Balancing

4 There are 4 upcoming changes to the existing Energy Balancing Skip Rate methodology

1 GC0166

Change: Additional parameters for storage units will be used to calculate available volume in the skip rate calculation

Reason: grid code change

Date: 25th June

2 Quick Reserve / Slow Reserve

Change: Exclude units with QR/SR contracts in the direction of the contract

Reason: capability change to protect procured reserve volumes

Date: Summer

3 Wind Offer Exclusion (update)

Change: Add an exception to the existing wind exclusion so that wind offers are not excluded if the wholesale price is negative and a unit has a PN = 0

Reason: more accurate reflection of available volume

Date: Summer

4 Solar Offer Exclusion (new)

Change: Additional exclusion to match wind

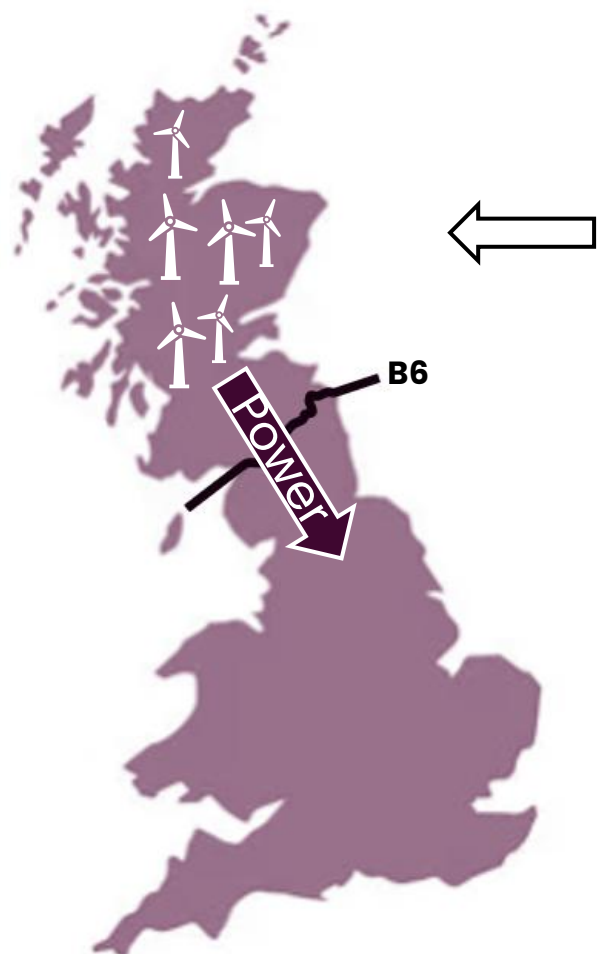
Reason: more accurate reflection of available volume

Date: Summer

What are Constraints?

- Thermal constraints are operational limits that protect physical infrastructure. They limit the power that can flow across physical wires and cables, and can be visualised with theoretical lines drawn across the UK.
- An **active constraint** is a constraint that control engineers are currently taking actions to reduce the flow across. It is affecting dispatch decisions.
- **Export constraints** upper limit on the power that can flow out of a region. They often surround areas of high generation and low demand, such as Scotland on a windy day.
- **Import constraints** lower limit on the power that can flow into a region. They often surround areas of high demand and low generation, such as large cities.
- Constraints can also be due to voltage or stability.

Import and Export Constraints



Export constraints

- Limit the power that can flow **out** of a region
- Surround areas of high generation and low demand

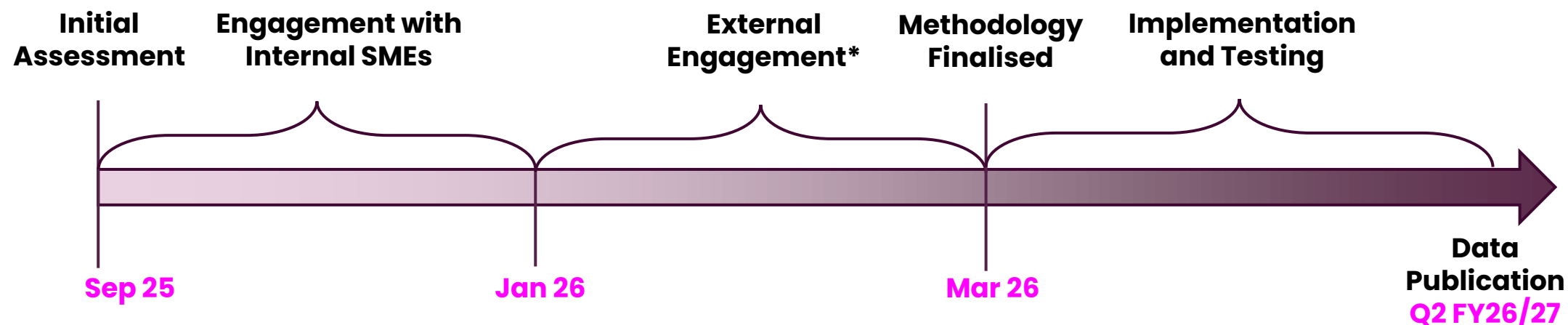
Import Constraints

- Limit the power that can flow **into** a region
 - Surround areas of high demand and low generation



Skips Behind Thermal Constraints Update

This work will provide transparency on dispatch decisions taken to manage active thermal constraints and will create a new metric with associated datasets.



A methodology has been agreed with industry as of March 2026 and can be found [here](#).

Implementation is currently in progress, with a view to publish data externally in Q2 2026.

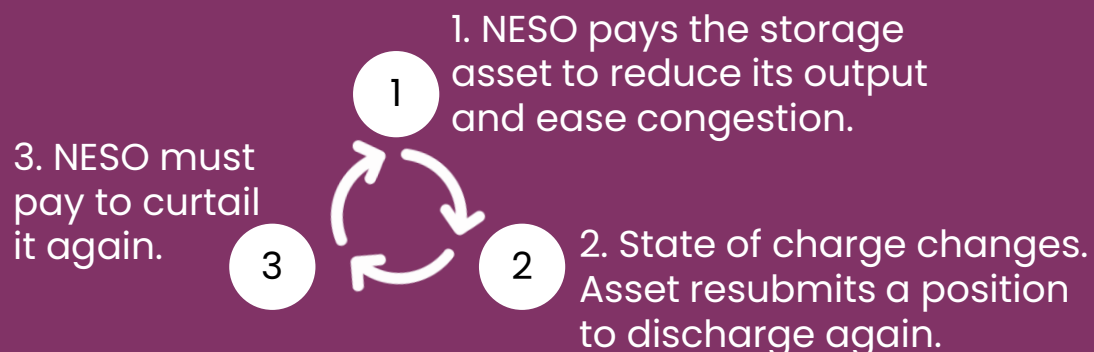
*Note: External engagement refers to Dispatch Transparency forum (January 2026) and Skips Behind Constraint Webinar (March 2026). The details can be found on [Skip Rates page](#).

Storage Behind Constraints

Storage Behind Constraints

Storage scheduled to generate during export constraints can increase congestion.

NESO dispatches in merit order. Behind export constraints, this can create a feedback loop for storage that increases balancing actions and costs, conflicting with the requirement to minimise overall balancing costs.



Cycle repeats until the constraint clears

This cycle is a rational response, not malicious behaviour. The issue is the incentive structure.

COST IMPACT

£58.2M – £97.9M

In additional balancing costs from RRT

2025 Calendar Year

50% cost growth between 2024–25FY and 2025–26FY

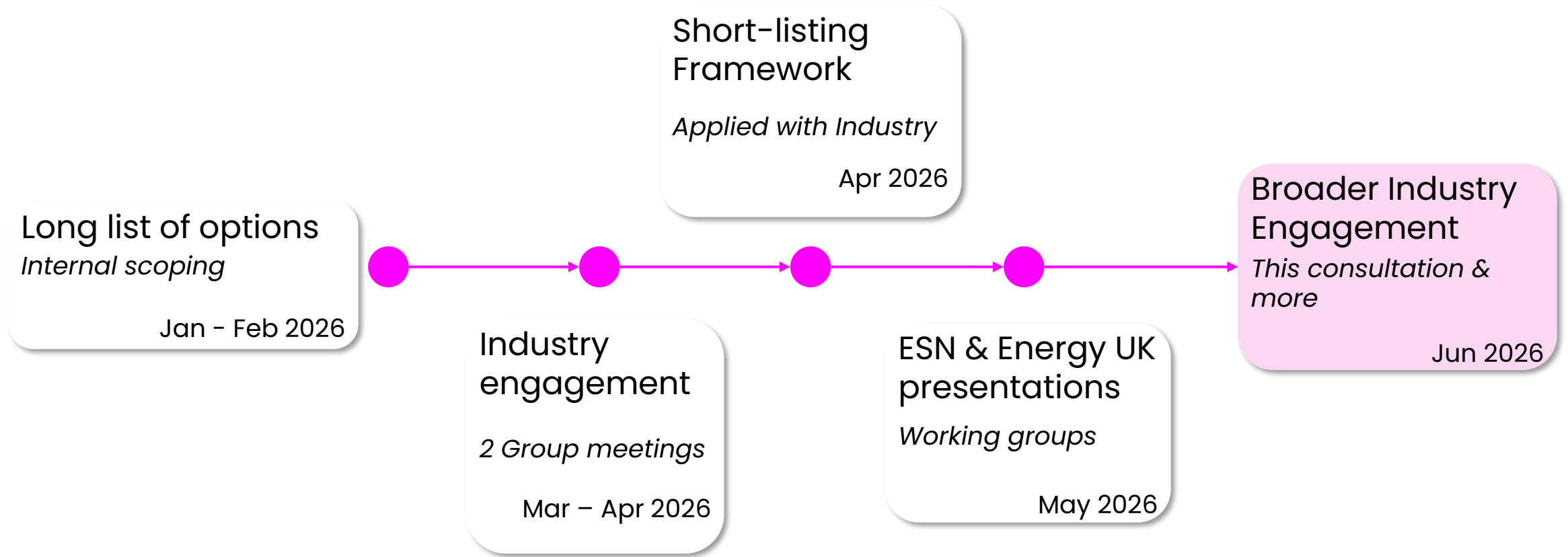
Source: NESO Market Monitoring

WHY THIS MATTERS

- Cost grew 50% year-on-year and storage deployment is still increasing.
- NESO has a licence obligation to operate the network economically and efficiently.
- Inconsistent decisions in the control room create uncertainty for BM participants.

The aim is to retain the system and flexibility benefits of storage while reducing unintended consumer cost impact.

Storage Behind Constraints : How We Got Here



Storage Behind Constraints: 16 Options

Change asset behaviour in BM

1A: Redispatch storage, but they can subsequently only discharge at a portion of their PN.

Do Nothing

2A: Dispatch in price order

Change decision making in control room

3A: Dispatch according to order of actions prioritizing generation before storage, through BPS.

3AA: As 3A but storage can charge

3B: No charging of storage behind constraints

3C: Only dispatching storage assets up to a single cycle per constraint period.

3CA: As 3C but charging unrestricted

New markets to change storage behaviour

4B: Grid Trade Master Agreement Schedule 7a

4A: Boundary flow smoothing

6A: Capacity Reserve Market. NESO tenders for availability during constraint periods.

4C: Redispatch in bid/offer pairs to return SOC change to zero.

Reduce need to redispatch storage assets

5A: Intertrip services

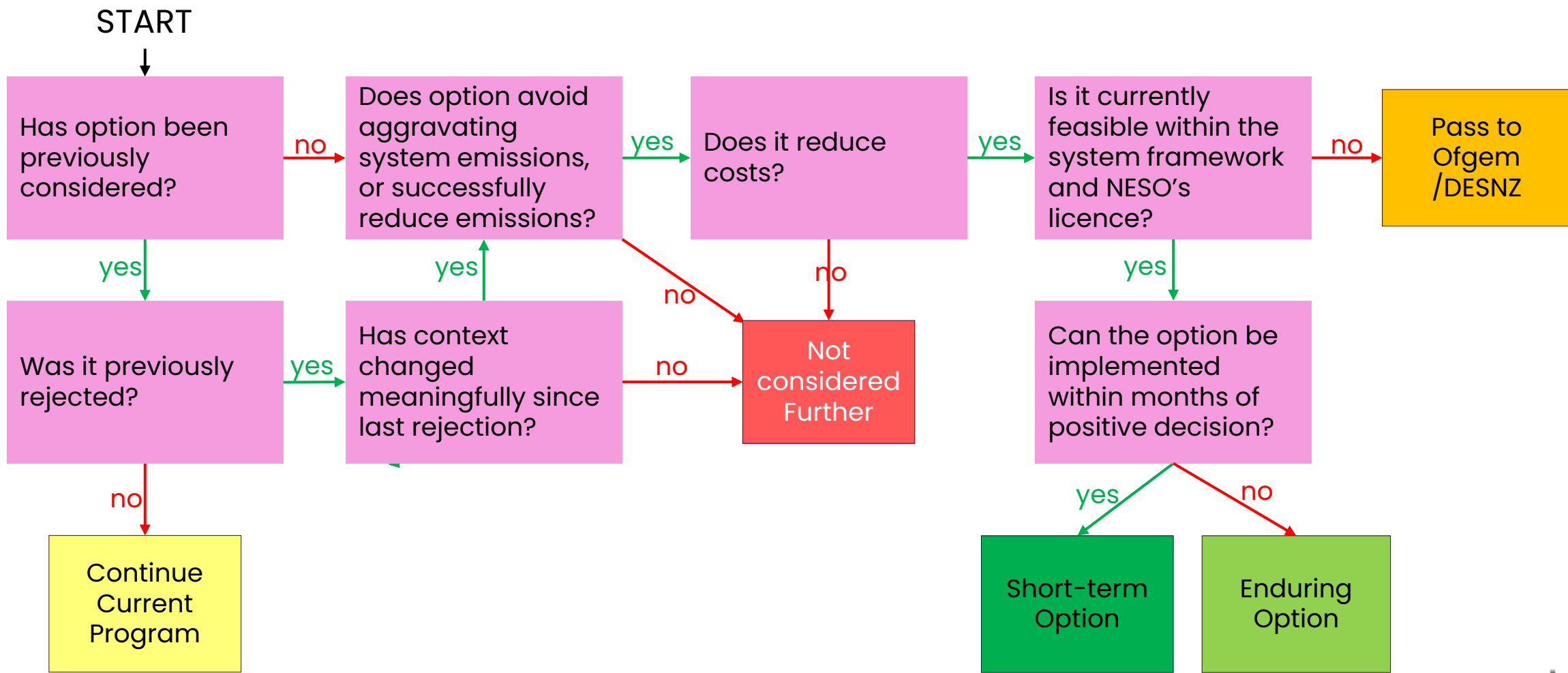
5B: DA information transparency and optimisation

5C: Non-firm / central scheduling of storage assets.

6B: Advanced cost benefit modelling

6C: Guidance on reasonable cycles per day

Storage Behind Constraints: Shortlist Framework



Storage Behind Constraints: Shortlist Decisions

Changes asset behaviour in BM

1A: Redispatch storage, but they can subsequently only discharge at a portion of their PN.

Do Nothing

2A: Dispatch in price order

Change decision making in control room

3A: Dispatch according to order of actions prioritizing generation before storage, through BPS.

3AA: As 3A but storage can charge

3B: No charging of storage behind constraints

3C: Only dispatching storage assets up to a single cycle per constraint period.

3CA: As 3C but charging unrestricted

New markets to change storage behaviour

4B: Grid Trade Master Agreement Schedule 7a

4A: Boundary flow smoothing

6A: Capacity Reserve Market. NESO tenders for availability during constraint periods.

4C: Redispatch in bid/offer pairs to return SOC change to zero.

Reduce need to redispatch storage assets

5A: Intertrip services

5B: DA information transparency and optimisation

5C: Non-firm / central scheduling of storage assets.

6B: Advanced cost benefit modelling

6C: Guidance on reasonable cycles per day

| | | | |
|---|------------------------|---------------------------------------|--------------------------|
| ■ | Not considered further | ■ | Continue current program |
| ■ | Long-term Option | ■ | Pass to Ofgem/DESNZ |
| ■ | Short-term Option | ■ | Status Quo |

Storage Behind Constraints: Our Shortlist

SHORT TERM (3 – 6 MONTHS)

Option 3A

Change NESO's balancing rules; Prioritise redispatch actions on generation before storage behind export constraints.

- ✓ Breaks the repetitive re trading loop.
- ✓ Removes the cost externality without removing storage from wholesale or ancillary markets.
- ✓ Resolves tension between merit order and NESO's economic dispatch obligation.
- Short term option that does not fully resolve the issue

Option 3AA

As 3A but enables in-merit charging behind constraints without curtailing discharge.

- ✓ Preserves storage activity in BM
- ✓ Storage absorbs cheap or excess renewable energy mid-congestion.
- Does not remove the feedback loop; potential for more unwanted dispatch behind constraints with limited decarbonisation benefit.
- More complex to implement than 3A.

ENDURING (1 – 2 YEARS)

Options for Cost-Benefit Assessment

3C: Single dispatch per constraint period
NESO would call on a storage asset to reduce output once per constraint period.

3CA: 3A, with charging unrestricted

No limits on charging during congestion but can only bid back a single discharge.

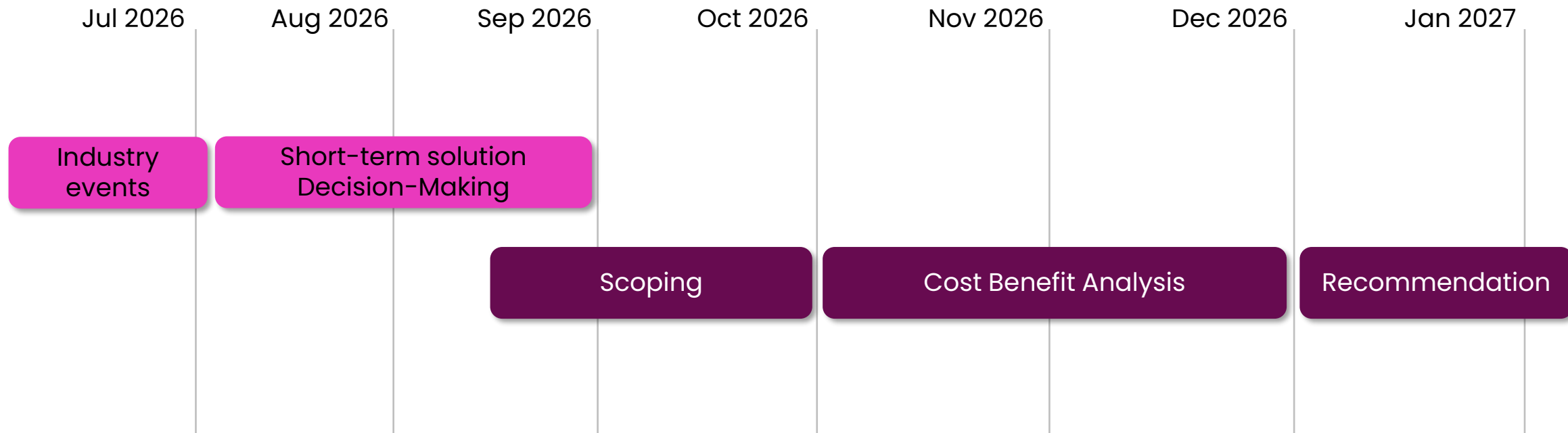
4B: GTMA Schedule 7A Expansion

Extend current trading platform to agree positions with BMUs before gate closure.

6A: Capacity Reserve Market

A competitive market where storage bids to be available during congestion periods.

Storage Behind Constraints: What Happens Next?



KEY: Short-term Enduring

SBC: We Want To Hear From You

- Are the shortlisted options the right focus? Is anything missing?
- Is the proposed treatment of storage behind constraints fair and workable?
- What evidence would provide sufficient confidence to support one of the short-term options?
- What should we prioritise in the longer-term cost-benefit analysis?
- How can NESO engage with you better as this work develops?

Thanks for your participation



We welcome your feedback & questions – please do get in contact with us at skiprates@neso.energy



Slides from today's session will be published shortly after the event. In the meantime, you can access content from our earlier events, webinars and focus groups [here](#).



Subscribe to our new NESO newsletter 'Energising Progress' [here](#) – please select **Future of Balancing Services (inc Balancing Programme & Skip Rates)** to keep up to date.

Storage Behind Constraints (SBC)

PRE-READ: KEY INFORMATION AT A GLANCE

A quick reference on every option considered

This operational review is aiming to increase the net value that storage provides to society

NESO places significant value on increasing storage on the system to deliver the flexibility needed to achieve Clean Power 2030

CP30, and the Review of Electricity Market Arrangements, recognise that the existing market and system design in GB does not currently deliver the most efficient use of the new types of assets that will deliver CP30

This operational review aims to get us a step closer to delivering the system that gets the best social value of the assets which are essential for CP30

Operability challenge: repetitive re-trading

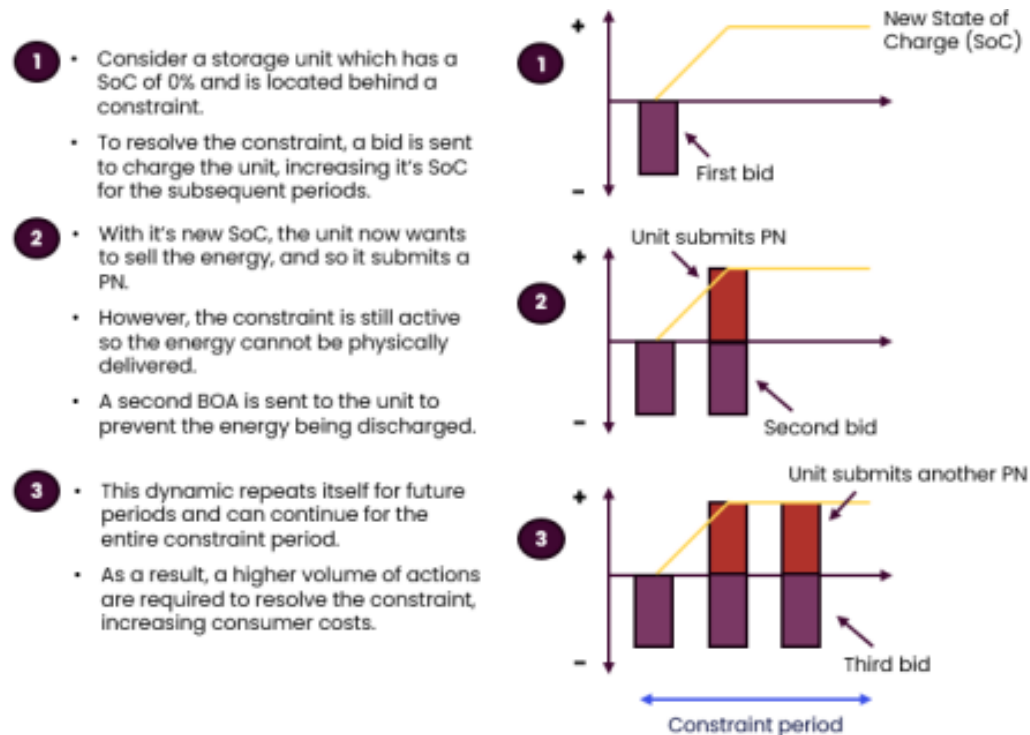


Figure 9: Illustrative example of inefficient management of storage units

- When storage assets are redispatched by NESO, it can create knock-on impacts as the units then have a different energy position than they expected. This then impacts on the availability or unavailability of energy in the market in future hours.
- This means that when constraints are active for multiple periods, the energy volume constrained off in storage units can perpetuate, leading to additional future constraint actions to buy out the same volume again in future periods; this dynamic is known as “repetitive re-trading”.

We have discussed a long-list of options with an industry workgroup

Initial list aimed at capturing **the full range of options**, including ones which may be deemed out of scope, out of NESO's remit, or that don't achieve the objectives of the review.

Change asset behaviour in BM

1A) Redispatch storage, but they can subsequently only discharge at a portion of their PN

Do nothing

2A) Dispatch in price order

Change decision making in control room

3A) Dispatch according to order of actions prioritising generation before storage, through BPS

3B) No charging of storage behind constraints

3C) Only dispatching storage assets up to a single cycle per constraint period

New markets to change storage behaviour

4A) Boundary flow smoothing project

4B) Grid Trade Master Agreement (GTMA) Schedule 7a

4C) Redispatch in bid/offer pairs to return SOC change to zero

Reduce need to redispatch storage assets

5A) Intertrip services

5B) DA information transparency and optimisation

5C) Non-firm / central scheduling of storage assets

Other options have also been suggested by the industry workgroup and included for consideration

- 6a Capacity reserve market
- 6b Advanced cost-benefit modelling of RRT to evaluate against BOA price differences in real-time
- 6c NESO provide a guidance document on reasonable number of cycles per storage asset and NESO empowered to skip bids beyond this

Storage Behind Constraints: All Options Considered

| Option | Name | Description |
|--------|---|---|
| 1A | Limit post-redispatch output | Restricts generators' ability to return to higher output after being redispatched to manage constraints. Limits the symptom, not the cause. |
| 2A | Dispatch in price order | This is the current approach. The baseline that generated over £58m in costs. |
| 3A | Prioritize generation before storage behind constraints | Changes dispatch sequence so generation is utilized before storage when managing constraints. Cleanest break, clear instructions for control room. |
| 3AA | As 3A, but redispatch to charge | As 3A but still permits redispatch of storage assets to charge while prioritizing generation for bid actions. Compromise option, smaller cost savings. |
| 3B | No charging of storage behind constraints | No redispatch of storage assets to charge, but would redispatch any discharge to 0. Doesn't maximise benefit and has no impact on behaviours. |
| 3C | One dispatch cycle per constraint event | Limits dispatch actions during a constraint event to a single cycle to avoid repeated feedback effects. Hard to track consistently. |
| 3CA | As 3C, but unrestricted charging | Maintains one-cycle dispatch but allows redispatch of storage to charge within the constraint. Likely produces more storage cycles per day. |
| 4A | Boundary flow smoothing | Smooths power flows across network boundaries to reduce the severity of constraint actions. CCP already running an innovation programme to target physical causes of constraints but it operates upstream of dispatch so cannot address what happens when storage is already sited behind an active constraint. |
| 4B | Grid Trade Master Agreement Schedule 7a | Expands pre-gate trades to replace balancing actions and reduce redispatch volumes. Already exists, expansion without unintended consequences targeted. |



Storage Behind Constraints : All Options Considered

| Option | Name | Description |
|--------|--|---|
| 4C | Redispatch in bid/offer pairs to return SOC change to zero | Coordinates matching bids and offers across time frames to maintain no change to storage state of charge. Beyond NESO licence remit to implement. |
| 5A | Intertrip services | Expands automated protection schemes that reduce output when constraints are triggered allowing higher pre-fault flows. Helps at the edges of constraints, does not touch dispatch issue. |
| 5B | DA information transparency and optimisation | Provides earlier visibility of expected constraints to inform market behaviour. This won't alter behaviour alone, if incentive remains to re-trade. |
| 5C | Non-firm / central scheduling of storage | Moves storage toward centrally coordinated or non-firm operation within constraints. Fundamental redesign of how storage participate in markets. |
| 6A | Capacity Reserve Market | Storage would bid to be available during congestion periods. Constraint cover procured competitively, with prices set through bidding. Design is hinged on Ofgem clarifying whether availability payments constitute a regulated service. |
| 6B | Advanced cost benefit modelling | Factors cost of repetitive re-trading into merit price stack that is visible to control engineers for decision making. Current tech does not support predicting market behaviour in real-time. |
| 6C | Guidance on reasonable cycles per day | Sets limits or guidance on how frequently storage can cycle within a day. Enforcement mechanism non-existent. 'Reasonable' will also need to be defined. |