

A landscape photograph showing a row of wind turbines on a hill under a sunset sky. The foreground is filled with rows of yellow flowers, likely rapeseed, in a field. In the middle ground, there is a small village with houses and trees. The background shows rolling hills and more wind turbines.

*Materiality of skip rates:
External Assurance*

Report prepared for NESO

DECEMBER 2025

Executive Summary

LCP Delta have been commissioned by NESO to provide independent external assurance of their materiality of skip rates analysis.

We have provided both a quantitative review of NESO’s calculations, and a qualitative review of NESO’s approach and its limitations.

For our quantitative review we independently replicated NESO’s calculations of the cost associated with “Stage 6” skips. Our calculated results, shown on the charts to the right, exactly matched NESO’s own results. Hence, we are satisfied that their calculated costs are accurate. Note that our scope of work was limited to the calculation of costs, not the calculation of the in-merit stack data that fed into this calculation.



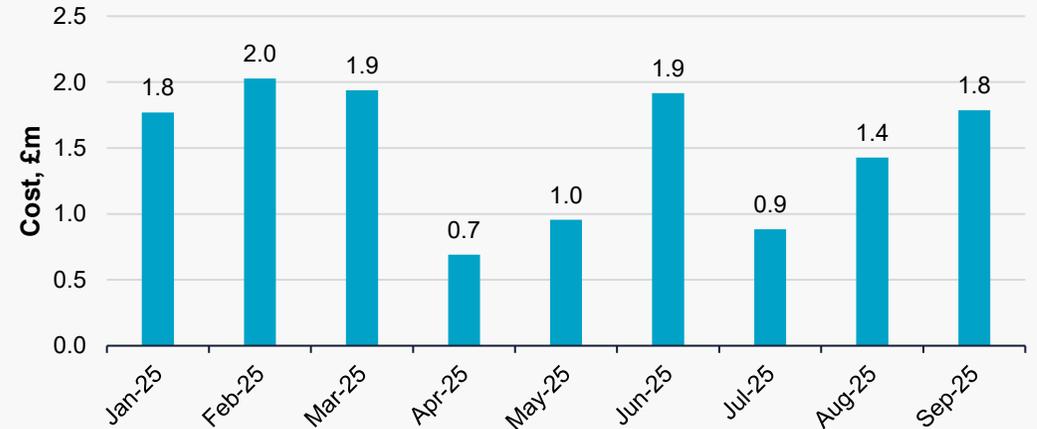
Our independently calculated skip rate costs exactly matched NESO’s own cost calculations.

As part of our qualitative review we have identified several limitations in NESO’s approach. However, the most material of these limitations – including that time periods are treated independently and that perfect foresight is assumed – mean that NESO’s costs are likely to be an overestimate.

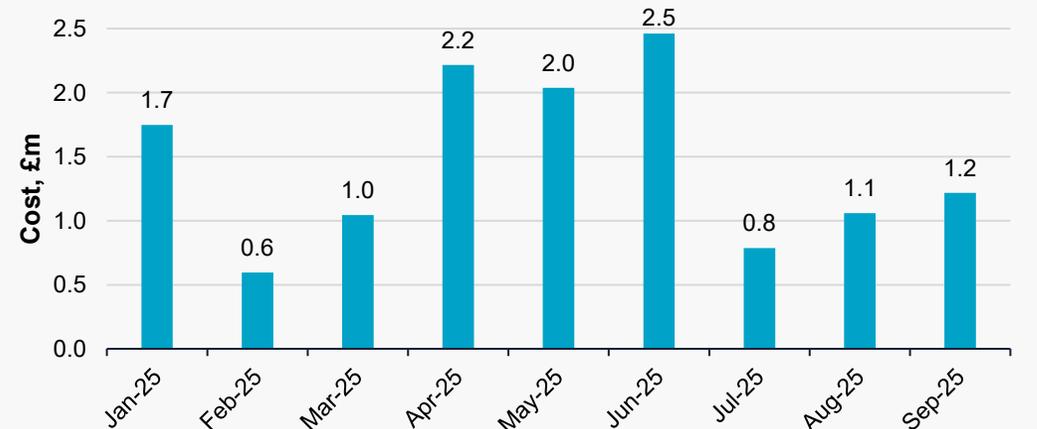
As such, we are comfortable that NESO’s calculation of the costs associated with BM energy action skips is prudent.

Another key limitation is that the analysis is restricted to BM energy actions. The level of skips and associated costs relating to BM system actions is not included in NESO’s analysis, but in our view should be considered in due course.

Offer Skip Rate Cost (All Technologies) – Stage 6



Bid Skip Rate Cost (All Technologies) – Stage 6



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Overview and approach

Project overview

NESO has commissioned LCP Delta to provide external assurance of their analysis assessing the materiality of skip rates.

The key output of NESO's analysis is an estimate of the impact on balancing costs associated with skip rates in the Balancing Mechanism.

The analysis builds on the support LCP Delta provided to NESO in 2024 to define and quantify the level of skips.

LCP Delta's external assurance covers both quantitative and qualitative elements, while at the same time being limited in scope. These scope of these two elements are outlined below.

Qualitative assurance scope

The qualitative assurance covers:

- Confirming that NESO's approach has been implemented as intended and is logically sound.
- Providing a list of limitations in NESO's analysis, and where possible indicating whether these limitations result in the costs being over- or under-estimated, and commenting on their materiality where appropriate.
- Providing recommendations on potential improvements or extensions to NESO's analysis.

Quantitative assurance

In the quantitative assurance, LCP Delta independently calculated the change in balancing costs associated with skip rates.

However, this quantitative assurance is limited in its scope:

- Costs are calculated for the period covering January 2025 to September 2025 (inclusive).
- Costs are only calculated for the final stage, Stage 6, of NESO's skip rate methodology. In addition to the exclusions made in Stages 1-5, this final stage excludes actions involving mandatory frequency response.
- LCP Delta has assumed all the volume and price data provided by NESO are correct, as is the classification of this data. The external assurance is not a review of the underlying data and is limited to the calculation of costs.

Limitations of NESO's analysis

Part 1

We have outlined below and overleaf the key limitations in NESO's analysis. We have also included our view on the materiality of this limitation to the results (Low/Medium/High) and whether the limitation is likely to mean costs are over- or under-estimated .

Limitation	Materiality (LCP view)	Impact on analysis	Explanation	LCP Delta recommendation
Time periods are treated independently	Medium/High	Costs are overestimated	NESO's analysis does not account for the interdependency of time periods. This is likely to have an impact when assessing skips from battery storage in particular, as the number of consecutive periods that an asset can actually deliver is restricted due to their limited durations. <i>Note: NESO carried out analysis on the impact of battery capping and found this to be low if they assumed c.3 battery cycles per day. NESO also looked at trying to remove economic skips from the materiality analysis but this was determined to be too complex and results would not have been transparent.</i>	Further analysis only warranted if the calculated cost of skips is considered to be too high.
State of charge of assets is not considered	Medium	Costs are overestimated	As mentioned above, storage assets are limited by their duration. If a storage asset is almost fully discharged (or fully charged) then its ability to discharge (or charge) will be limited. This is not considered in the analysis.	Further analysis only warranted if the calculated cost of skips is considered to be too high.
Secondary impact on other markets	Medium	Unknown	The impact of skips on other markets such as the intraday & day ahead energy markets, or on ancillary markets is not estimated. This would be extremely complex to capture, and in our view would only have a limited impact on the results.	It is reasonable that the analysis did not attempt to quantify these impacts.
Secondary impacts in the BM on subsequent periods	Medium	Unknown	The impact of skips on subsequent BM periods is not captured – i.e. if different Bids/Offer had been accepted then this would flow through and impact subsequent BM periods. This would be extremely complex to capture, and it is not obvious which way this would move results.	It is reasonable that the analysis did not attempt to quantify these impacts.
Analysis assumes perfect foresight	Medium	Costs are overestimated	The analysis assumes that the control room have perfect foresight of the required bid/offer volumes and therefore all in-merit actions could have been taken ahead of all out-of-merit acceptances. In reality, foresight is limited and will result in some inefficiencies.	It is reasonable that the analysis did not attempt to quantify these impacts.

Limitations of NESO's analysis

... Continued

Limitation	Materiality (LCP's view)	Impact on analysis	Explanation	LCP Delta recommendation
Skip costs related to system actions are not included	High	Not in scope, means total costs are underestimated	The scope is limited to skips related to BM energy actions, and any costs associated with BM system actions (e.g. thermal constraints) are not quantified.	Further analysis on skips related to system actions should be carried out in due course.
Granularity of data is 5 minutes	Low	Unknown	The data is summarised into 5-minute time periods. Some BM actions will be even shorter than this. However, we would not expect this to have a significant impact on the overall costs.	We think 5-minutes is an appropriate level of granularity.
Costs do not include impact on policy support costs	Low	Impact on consumer costs is overestimated	The cost calculation is limited to the impact on the cost of NESO's balancing actions, but does not extend to the offsetting impact on the change in policy support costs (e.g. curtailed wind no longer receiving CfD/RO payments), which will decrease the impact on consumers. The impact of this limitation is likely to be low, given that the costs associated with supported RES make up a relatively small proportion of overall BM energy action costs.	If the analysis is extended to cover system actions this will be more important and should be considered.
Analysis does not estimate the impact on technology profitability	N/A	Doesn't impact the costs being reported	The technology level results provides a view on the contribution of each technology type to overall costs due to skips. It also provides a view on the impact of skips on each technology type's BM revenues. However, the analysis does not show the impact of skips on the technology's overall profitability. This would require detailed analysis of the underlying costs associated with accepted and skipped bids/offers, including any opportunity costs (for technologies such as storage). This is beyond the scope of NESO's analysis.	Care should be taken when presenting and interpreting technology-level results.

Overall, NESO's approach appears appropriate and proportionate to us. Although there are several limitations to the analysis, the most material limitations (e.g. time periods being treated independently, and assuming perfect foresight) mean that the skip costs associated BM energy actions is likely to be overestimated in NESO's analysis, meaning the estimates are prudent.

BM system actions are not in scope for this analysis, but should be considered in due course.

Approach taken in our quantitative assessment



NESO provided LCP Delta with 9 months of bid/offer acceptance and bid/offer in-merit data, for Stage 6 of their skip rate methodology, at 5-minute granularity.

This contained both volumes and prices for each bid/offer.

Note that the scope of our assessment did not cover reviewing this data and ensuring its accuracy, but we did carry out several sense checks, e.g. checked that total accepted volumes = total in-merit volumes.



We calculated the costs for each acceptance and for each in-merit bid/offer based on the volumes and prices provided by NESO. These were aggregated to monthly level and summarised by technology.

The skip rate cost was determined based on the difference between these two costs (total cost of acceptances total cost of in-merit stack).

Due to the size of the data files provided, our calculations were performed using Python, and then samples were cross-checked using excel.



Our calculations were performed completely **independently**, without sight of NESO's results.

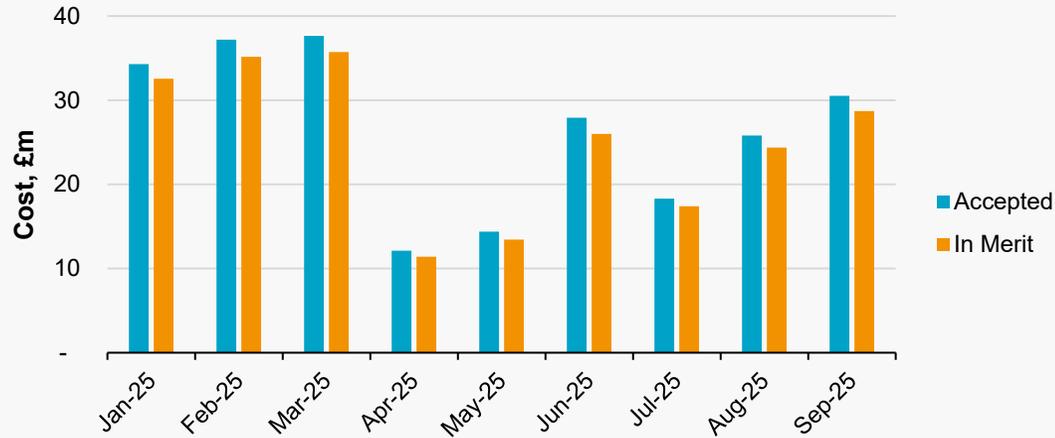
The results of our calculations were provided to NESO and then checked for alignment against their own results.

Results of our quantitative assessment

Results

Cost due to skips (Stage 6) – Offers

Offer Cost of Acceptance Stack vs In-Merit Stack (All Technologies)



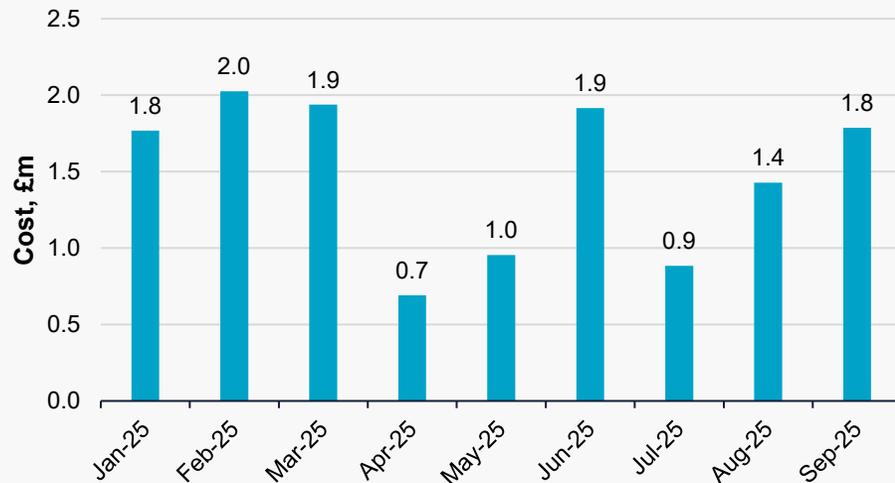
The top chart compares the monthly cost of accepted offers to the cost of the in-merit stack of offers.

The difference between the two represents the monthly cost incurred to NESO due to skipped offers, and is shown on the chart below.

These results are for Stage 6 of NESO’s skip rate methodology, applying all exclusions from Stage 5 plus exclusions for mandatory frequency response (MFR).

- The monthly variation in skip rate cost is similar to the variation in acceptance cost, with skip rate cost being approx. 6% of the cost of in-merit acceptances on average.
- The average monthly skip rate cost from offers was £1.49m over the 9 months of analysis, with a total offer skip rate cost over January to September 2025 of £13.49m.

Offer Skip Rate Cost (All Technologies)

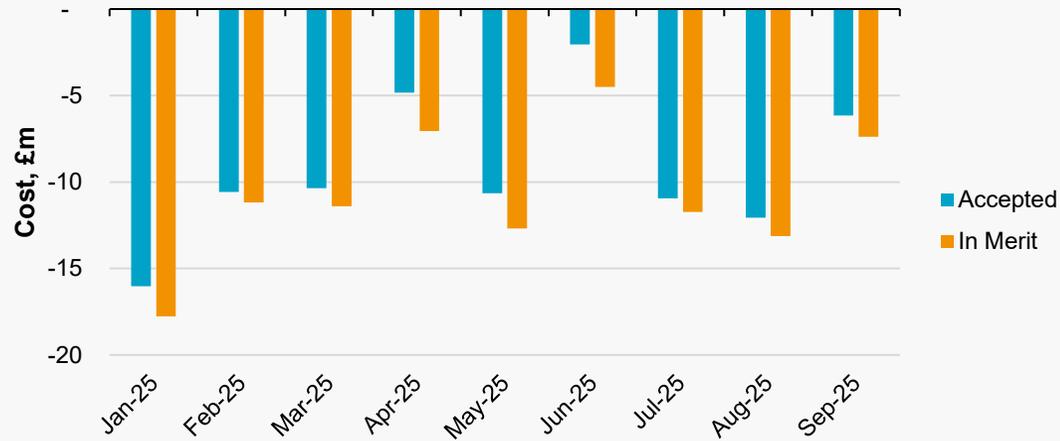


These results exactly match those produced by NESO’s own calculations.

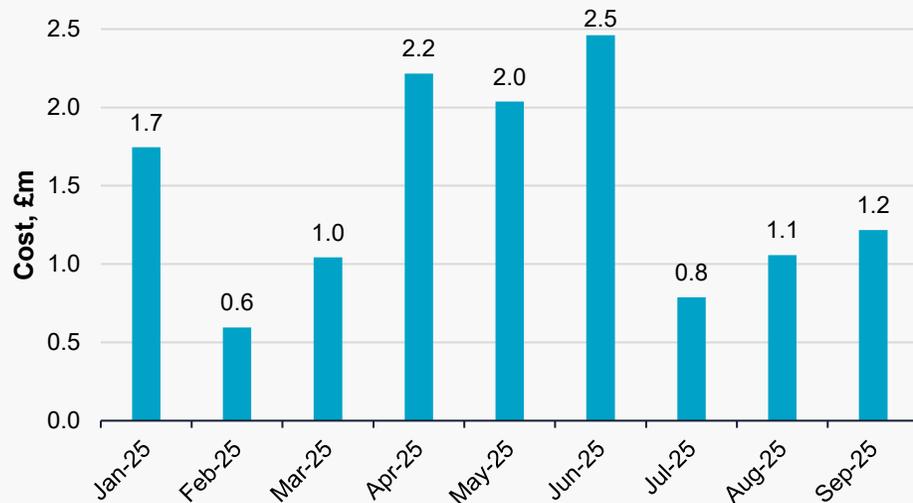
Results

Cost due to skips (Stage 6) – Bids

Bid Cost of Acceptance Stack vs In-Merit Stack (All Technologies)



Bid Skip Rate Cost (All Technologies)



The top chart compares the monthly cost of accepted bids to the cost of the in-merit stack of bids.

The difference between the two represents the monthly cost incurred to NESO due to skipped bids, and is shown on the chart below.

These results are for Stage 6 of NESO’s skip rate methodology, applying all exclusions from Stage 5 plus exclusions for MFR.

- Compared to offers, the monthly variation in skip rate cost shows less similarity to the variation of in-merit bid costs, with June 2025 having the largest monthly skip rate bid cost but the smallest monthly in-merit bid cost. This is partly due to the influence of negatively priced bids from supported wind and solar plants, that have a positive accepted and in-merit bid cost, whilst other technologies have negative bid costs.
- The average monthly skip rate cost from bids was £1.46m over the 9 months of analysis, with a total of £13.16m.

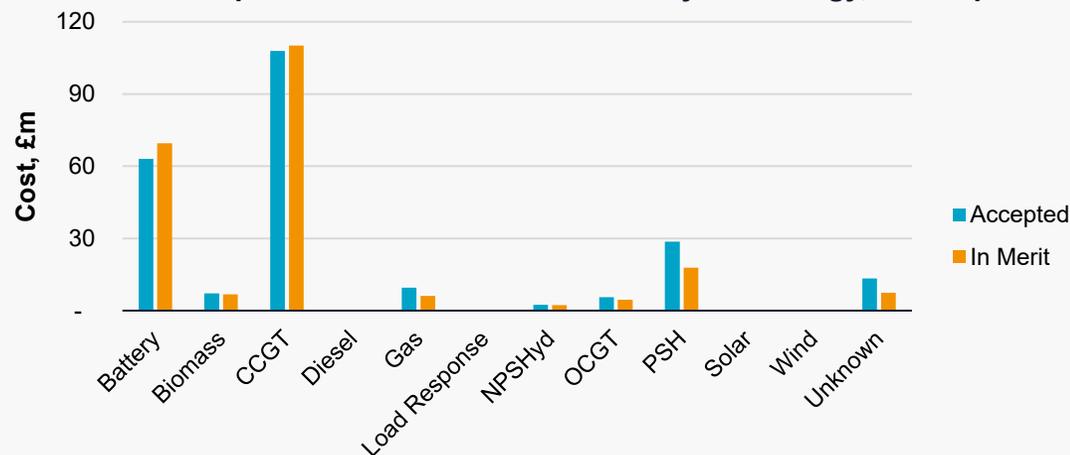


These results exactly match those produced by NESO’s own calculations.

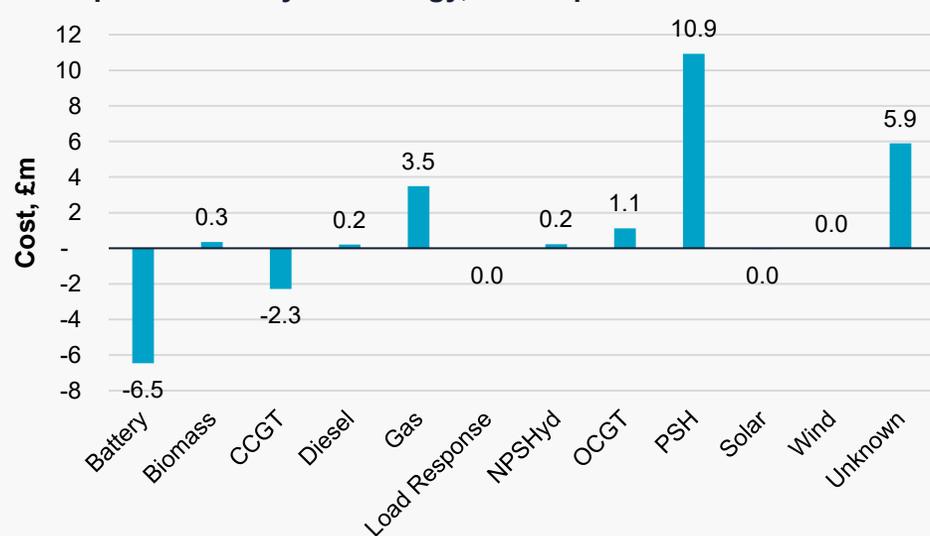
Results

Cost due to skips (Stage 6) – Offers by technology

Offer Cost of Acceptance Stack vs In-Merit Stack by technology, Jan-Sep 2025



Offer Skip Rate Cost by technology, Jan-Sep 2025



The top chart compares the contribution of each technology type to the cost of offer acceptances for January to September 2025 inclusive, to its contribution to the cost of the in-merit offer stack for the same time period.

The difference between each technology's accepted cost and in-merit cost is then shown below, representing the cost to NESO associated with each technology due to skipped offers.

Where the accepted stack is greater than the in-merit stack, the analysis shows there is a net cost to NESO associated with the technology type (a positive value on the bottom chart). This also means that the technology receives higher BM revenues* due to skipped offers.

- The results show that batteries and CCGTs have lower accepted costs, and hence receive lower BM revenues due to skipped offers.
- Pumped Storage Hydro (PSH), Gas (excl. CCGT and OCGT), OCGT, and Unknown fuel types receive higher BM revenues as a result of skipped offers, due to occasions where they were accepted out of merit.
- The skip rate cost for offers associated with PSH was £10.93m over the 9 months, whilst batteries resulted in a net cost of -£6.45m.



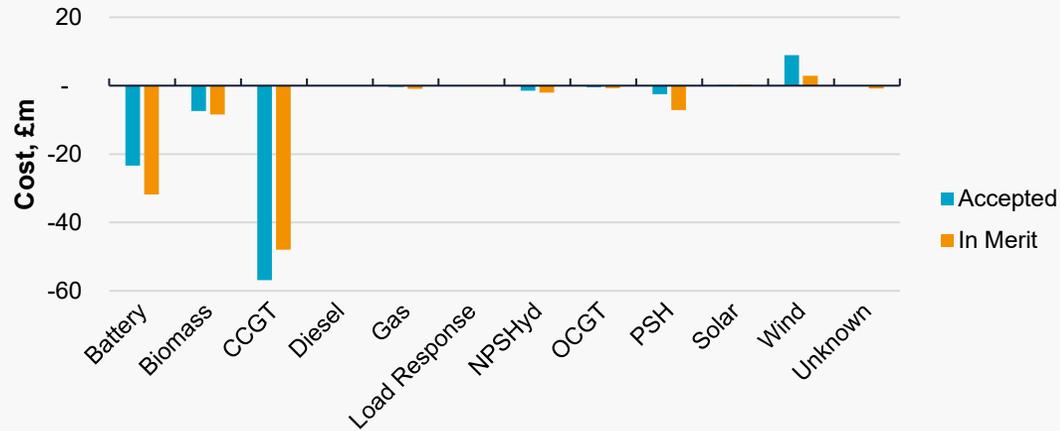
These results exactly match those produced by NESO's own calculations.

* As noted in our limitations section, this does not provide an indication of how the technology's overall profitability was impacted.

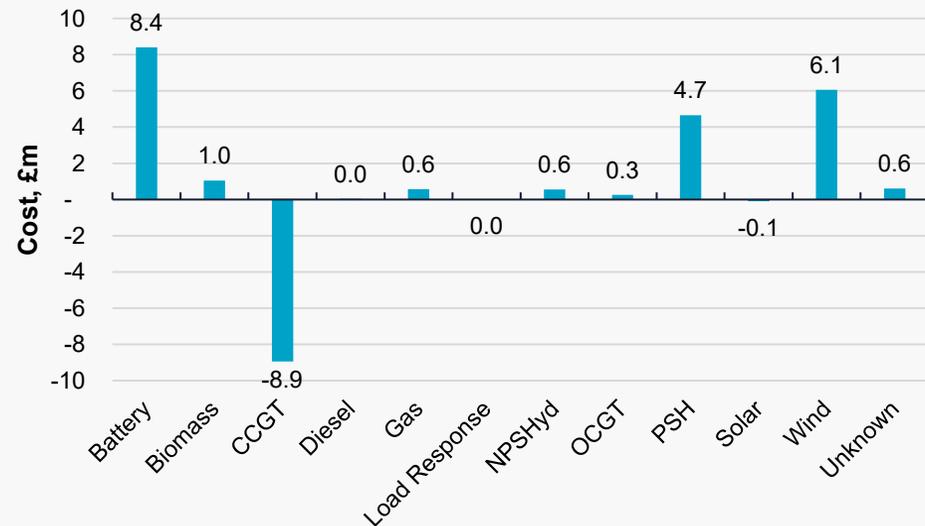
Results

Cost due to skips (Stage 6) – Bids by technology

Bid Cost of Acceptance Stack vs In-Merit Stack by technology, Jan-Sep 2025



Bid Skip Rate Cost by technology, Jan-Sep 2025



The top chart compares the contribution of each technology type to the cost of bid acceptances for January to September 2025 inclusive, to its contribution to the cost of the in-merit bid stack for the same time period.

The difference between each technology’s accepted cost and in-merit cost is then shown below, representing the cost to NESO due to skipped bids.

Where the cost of the accepted stack is greater (or less negative) than the in-merit stack, the analysis shows a net cost to NESO from the technology type and that the technology receives higher BM revenues* due to skipped bids.

- Similar to offers, the skip rate cost incurred to NESO from CCGT bids is negative, meaning that CCGTs receive lower net BM revenues (by making higher payments to NESO) due to skipped bids.
- All other technology types resulted in a net cost to NESO due to skipped bids, meaning they receive higher net BM revenues* (i.e. make lower payments to NESO). This is typically a result of lower accepted bid volumes for these technologies, resulting in lower payments to NESO.
- In particular, battery skips resulted in a cost to NESO of £8.4m, wind a cost of £6m, and PSH a cost of £4.7m.



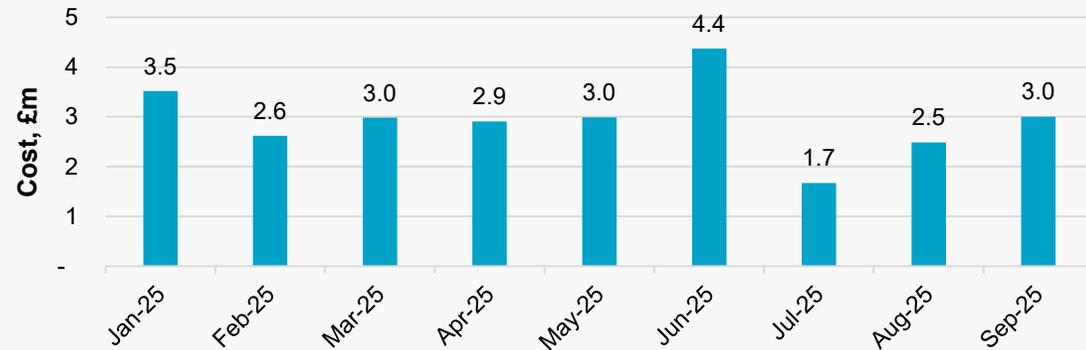
These results exactly match those produced by NESO’s own calculations.

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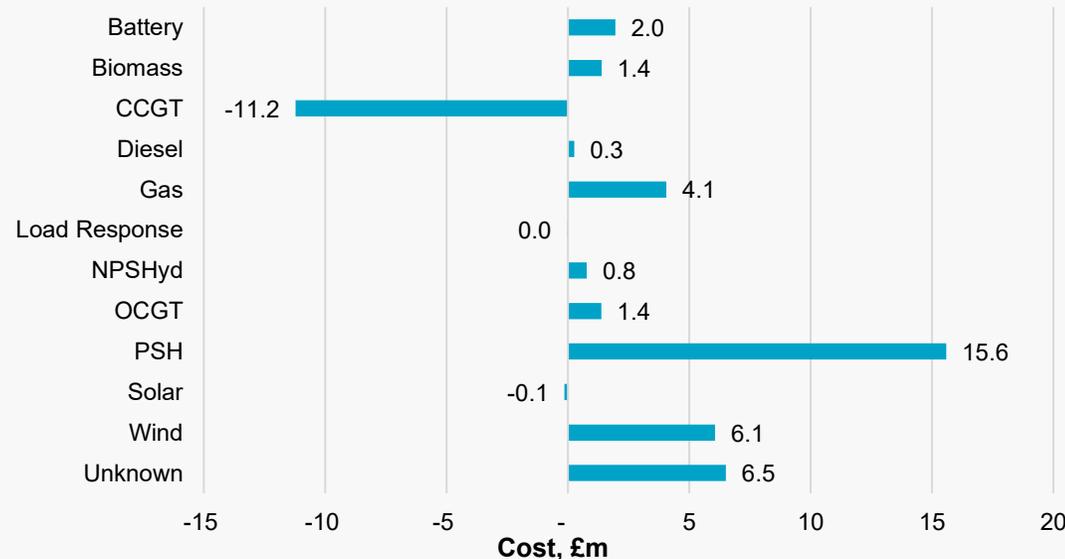
Results

Cost due to skips (Stage 6) – Combined bids and offers

Cost of Skips by month, combined bids and offers



Cost of Skips by technology, combined bids and offers, Jan-Sep 2025



The top chart shows the monthly cost incurred to NESO due to skipped bids and offers combined.

The bottom chart compares this cost for each technology. As in the previous slides, a positive value represents a cost to NESO associated with the technology's skips and means that the technology itself receives higher net BM revenues* due to skips.

- The average monthly skip rate cost from bids and offers combined was £2.95m over the 9 months of analysis, with a total skip rate cost over January to September 2025 of £26.56m.
- The technologies with the largest increase in BM revenues due to skips are pumped-storage hydro (PSH), Wind and Unknown plants. Over January-September 2025 inclusive, PSH had a £15.6m net increase due to skips.
- The technology that had the largest net decrease in BM revenues due to skips was CCGT, with a £11.2m decrease due to skips as a technology over January-September 2025 inclusive.



These results exactly match those produced by NESO's own calculations.

* As noted in our limitations section, this does not provide an indication of how the technology's overall profitability was impacted.

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