



NESO SSEP data controls actions from PwC review

FINAL REPORT

June 2026

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PricewaterhouseCoopers (referred to as “PwC” or “We” or “Our”) have been commissioned by National Energy System Operator Limited (referred to as the “Company” or “NESO”) to **conduct a targeted independent review of the approach, processes, and controls used in the SSEP programme’s modelling exercise. The scope of work to develop this deliverable involved:**

- Review of SSEP modelling documentation.
- Interviews with members of the SSEP Modelling and Risk & Assurance teams.

The following are **out of scope services** and are not the intended purpose of this review of the SSEP programme’s modelling exercise:

- Detailed review or validation of all documentation and processes relating to the SSEP Programme.
- Detailed review or validation of the underlying Plexos model.
- Review of processes related to external parties or programmes external to NESO.
- Formal assessment of current compliance with good or regulatory practices.
- Subsequent follow-up to review completion of actions in line with agreed due dates and owners. PwC has not validated or approved the owners or due dates of actions. Where any action has a due date recorded as “Complete”, this reflects NESO’s own internal assessment and does not represent a conclusion, confirmation or verification by PwC.

This report deliverable has been prepared only for National Energy System Operator Limited and solely for the purpose and on the terms agreed with National Energy System Operator Limited in our engagement letter dated April 2026 and the agreed scope. The report deliverable has been developed using a variety of sources from NESO. We have not sought to establish the reliability of those sources or verified the information so provided.

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Executive Summary

Summary of actions for NESO grouped by theme

Theme	Actions for NESO	Slide ref.
DESNZ data and assumptions alignment	Obtain transparency on input data processes and assumptions from DESNZ to improve transparency and support NESO in responding to external scrutiny on the input data.	<u>Slide 9</u>
	Formalise agreement with DESNZ on ownership of input data and assumptions to improve traceability and version control of inputs.	
SSEP documentation	Establish a formal document trail as evidence of the processes taken to validate and use the DESNZ input data.	<u>Slide 10</u>
	Align and consolidate risk tracking between the Economic Modelling Inputs Database and the Assumptions Log to create a single, consistent view of risks.	
Assumptions process and governance	Assign approvers to each assumption within the Assumptions Log to strengthen accountability and governance.	<u>Slide 11</u>
	Assign review dates for each assumption within the Assumptions Log.	
	Define actions and approval requirements based on the risk and impact classification of assumptions.	
	Introduce additional internal governance for high-risk and high-impact assumptions with additional layers of internal review.	
Modelling QA processes	Expand the use of automated QA processes within the SSEP modelling exercise.	<u>Slide 12</u>
	Review and update SOPs to reflect current processes and controls and improve consistency between modelling documentation and activities.	
	Implement structured QA, including spot-checking samples alongside high-level validation checks of the Economic Modelling Input Database.	
	Integrate QA processes into team activities' routine to support consistent execution and build a culture of assurance within the SSEP modelling team.	
	Appoint named owners for key control processes and documentation, with defined responsibilities for maintenance and updates.	

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Scope and approach

Our scope of work to review the SSEP modelling



Our review
(November 2025)

In November 2025, PwC was commissioned by NESO to undertake a **targeted independent review of the approach, processes, and controls** in the economic modelling within NESO's Strategic Spatial Energy Plan (SSEP) Programme. This review was commissioned following a **refresh of the energy generation cost data from DESNZ** (as outlined in [NESO's open letter to industry](#) dated 20th November 2025), which led to NESO and DESNZ's decision to re-run NESO's SSEP modelling.

Due to the time constraints for NESO to re-run the modelling, our work focused on reviewing the end-to-end modelling process and identifying potential issues and areas for improvement (approach covered on slide 7). This did not constitute a formal audit nor technical validation of the modelling itself.



What was in scope of our November 2025 review

- **Review of seven documents related to SSEP Modelling**, including the Economic Modelling Handbook, Assumptions Log, and QA Tracker (see Annex for the full list).
- **Interviews with four members of the SSEP Modelling and Risk & Assurance teams** to discuss the approach and processes (see Annex for full list).
- Identification of **findings and potential mitigations** for the SSEP Programme's modelling approach.



What was not in scope of our November 2025 review¹

- Detailed review or validation of the underlying Plexos model (e.g. a review of the inputs, algorithms, calculations and outputs from the model or the associated pathways).
- Formal assessment of SSEP Programme's compliance against relevant standards (e.g. HM Treasury Aqua Book).
- Follow-up validation with the SSEP Programme to review development of the modelling exercise against any findings uncovered through our review.



This report
(June 2026)

The findings and potential mitigations identified through our review were communicated with NESO in December 2025. These have been reviewed by the SSEP Modelling team and accepted by NESO in full to take forward as actions for the SSEP Programme in March 2026. This report presents these findings, with a **formalised set of actions for NESO to address**. As part of this report, we have reviewed additional documentation to further inform and strengthen the proposed actions.

While the findings and actions are independent to PwC and our review, the assignment of owners and due dates for each action has been provided by NESO.

Our approach to review the SSEP modelling

Our review of the SSEP's modelling in November 2025 looked at the approach taken by NESO to manage and validate new input data received from DESNZ, identify and log modelling assumptions, and implement assurance controls.



Data Capture and Management

Review the process to capture, validate and upload data to Plexos modelling tool

Activities include:

- Check and challenge of data capture, validation, and upload processes to the Plexos modelling tool.
- Assessment of approach for how source data is identified, captured, and version controlled.
- Check and challenge of data documentation and audit trail maintenance, limited to key documentation relevant to the data modelling process.



Assumptions Management

Review the process to identify, define and review assumptions

Activities include:

- Check and challenge of the process to identify, define, and document assumptions for the modelling.
- Assessment of the approach to review and validate assumptions, and the trigger parameters used for re-assessment.



Approach to Modelling Controls

Overview of approach to controls

Activities include:

- Check and challenge of existing modelling controls in place for the SSEP and their operational effectiveness.
- Review of documentation and evidence supporting control operation, limited to key documentation relevant to the data modelling process.
- Support to suggest potential additional controls or improvements to embedded controls to enhance robustness.

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Findings and actions

Actions - DESNZ data and assumptions alignment

Reference	Area	Findings from review	Action	Input provided by NESO	
				NESO owner	Due date
1	Source data documentation	NESO has limited insight to the inputs and modelling assumptions underlying the DESNZ forecast cost data, and there could be high-levels of scrutiny from external stakeholders.	Obtain transparency on input data processes and assumptions from DESNZ – Obtain further detail from DESNZ on how their energy generation cost data has been constructed, including input data sources and underlying assumptions, and process for adherence to modelling and quality assurance best practice. This would help to improve transparency and support NESO in responding to external scrutiny on the input data. To support efficient scrutiny, consider sharing the Assumptions Log with DESNZ to provide an additional layer of governance in line with Aqua Book guidance.		27/02/2026
2		There is the risk that NESO will receive new forecast data from DESNZ which will result in further delays to progress of SSEP modelling.	Formalise agreement on input data and assumptions – Obtain agreement with DESNZ (e.g. via formal email confirmation) setting out the energy generation cost data it has provided, the methodology used in its construction (including QA processes), and confirmation that it is the final input for SSEP modelling. This would improve traceability, version control, and clearly establish formal ownership of the input data from DESNZ in the event of any issues being identified in the future.		27/02/2026

Actions - SSEP documentation

Reference	Area	Findings from review	Action	Input provided by NESO	
				NESO owner	Due date
3	Data validation processes	The actions taken by NESO to validate the DESNZ forecast data and use in Plexos will be scrutinised by external stakeholders.	Establish a formal document trail as evidence of the processes taken to validate and use the DESNZ input data – Clearly document how input data received from DESNZ, and other sources have been validated and used within the SSEP modelling process. This documentation should provide sufficient detail to evidence validation steps and withstand external scrutiny of how input data has informed the SSEP pathways. Update the Economic Modelling Handbook to provide a comprehensive overview of the modelling approach. In addition, maintain supporting documentation, such as the Economic Modelling Inputs Database and the Assumptions Log, to serve as integral components of the overall document trail.		27/02/2026
4	Version control of source data	The risk assessment in the Economic Modelling Inputs Database has significant overlaps with the Assumptions Log.	Streamline risk tracking across data and assumptions – Align and consolidate risk tracking between the Economic Modelling Inputs Database and the Assumptions Log, to create a single, consistent view of risks and remove duplication.		27/02/2026

Actions - Assumptions process and governance

Reference	Area	Findings from review	Action	Input provided by NESO	
				NESO owner	Due date
5	Approach to review and validate assumptions	There are no specified approvers given for each assumption.	Define clear ownership and approval for assumptions – Assign approvers to each assumption within the Assumptions Log to strengthen accountability and governance. This will add a layer of independent review to assumptions in alignment with Aqua Book guidance on clearly defining the approvers for key decisions (Chapter 5.1), beyond the analytical team defining the assumptions.		31/08/2026
6		There are no dates for when assumptions will be re-assessed.	Introduce structured review cycles for assumptions – Assign review dates for each assumption within the Assumptions Log, prioritising higher-risk and/or higher-impact assumptions for earlier review ahead of key modelling milestones. This process should ensure assumptions remain appropriate for the modelled SSEP pathways and are reviewed ahead of key stage-gates.		31/08/2026
7		The consequence of an assumption being categorised as amber- or high-risk is unclear and requires further definition.	Apply tiered governance based on assumption risk and impact – Define actions and approval requirements based on the risk and impact classification of assumptions to ensure that the most important assumptions are prioritised for review and receive a proportionate level of scrutiny to their impact and risk.		31/03/2026
8		There is the risk that other SEP Programmes will be making contradictory assumptions to the SSEP.	Strengthen the governance of high-impact assumptions – Introduce additional internal governance for high-risk and high-impact assumptions, including additional layers of internal review and approval across other elements of the SEP portfolio. This will mitigate the possibility of contradicting modelling assumptions being made across the SEP portfolio.		27/02/2026

Actions - Modelling QA processes

Reference	Area	Findings from review	Action	Input provided by NESO	
				NESO owner	Due date
9	Data validation processes	Manual QA checks for data quality create the risk of human error not spotting errors.	Automate QA checks for data quality – Expand the use of automated QA processes within the SSEP modelling exercise. This could include validation tools to compare input datasets and identify any errors quickly (e.g. sum totals to check totals of columns and rows remain within a margin of error). The outputs of the checks should be stored to maintain a traceable QA audit trail in line with Aqua Book guidance on documentation (Chapter 8.3).		31/08/2026
10	Operation of existing controls	Some of the controls processes and evidence as outlined in the SOP are not being undertaken.	Align SOPs with actual control practices – Review and update SOPs (including the Modelling Inputs Database User Guide SOP and Modelling QA Data SOP) to reflect current processes and controls. This will improve consistency between modelling documentation and activities.		27/02/2026
11			Introduce a proportionate level of QA review into the Input Database – Implement structured QA, including spot-checking samples alongside high-level validation checks of the Economic Modelling Input Database following each new set of inputs to the model, in alignment with the controls in the Modelling QA Data SOP document.		27/02/2026
12		Assurance activities are occurring within the SSEP modelling, but further work could be done to embed the controls within day-to-day activities.	Embed QA controls into day-to-day activities – Integrate QA processes into team activities' routine (e.g. adding QA tasks into team planners, sprint tasks, and regular check-ins). This will support consistent execution and build a culture of assurance within the SSEP modelling team as outlined in the Aqua Book (Chapter 4).		27/02/2026
13			Assign ownership for key control processes – Appoint named owners ('champions') for key control processes and documentation, with defined responsibilities for maintenance and updates, as proposed in the Aqua Book for large analytical exercises (Chapter 4.2.3). This should include ownership of regular review cycles and tracking of QA activities to ensure controls remain up to date and effective and contribute to building a culture of assurance throughout the SSEP modelling team.		27/02/2026

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Annex

Annex

Documents reviewed

Ref	Document
SSEP Modelling documentation	
01	DESNZ Generation Cost Update for SSEP
02	Economic Modelling Input Database
03	Assumptions Log
04	SSEP QA Tracker
05	Economic Modelling Handbook
SSEP Modelling SOPs	
06	SSEP Modelling Inputs Database SOP
07	SSEP Modelling QA SOP

Stakeholders interviewed

Interviewee	Programme Role	Date
		11/11/2025 and 1/12/2025
		12/11/2025
		24/11/2025 and 1/12/2025
		12/12/2025

Out of scope services

The following services were out of scope for this review:

- **Detailed review or validation of the underlying Plexos model:** Our review did not include a review of the inputs, algorithms, calculations and outputs from the Plexos model or the associated pathways.
- **External Dependencies:** Where applicable, the review assessed whether appropriate dependency links and governance processes are in place to support the SEP portfolio. However, it did not include a review of other external parties or programmes external to NESO.
- **Other NESO programmes:** The review did not consider the programme management of other programmes outside of the SEP portfolio.
- **Formal assessment of current compliance:** The support did not include a formal assessment of each Programme’s current compliance with good or regulatory practices (e.g. HM Treasury’s Green Book) within the SEP portfolio.
- **Addressing the actions from the review:** We provided NESO with insight into how to address the issues found through the review. However, NESO is responsible for addressing the actions from the review. Subsequent follow-up of these actions to review their completion in line with agreed due dates and owners is not in scope of the review. PwC has not validated or approved the owners or due dates of actions. Where any action has a due date recorded as “Complete”, this reflects NESO’s own internal assessment and does not represent a conclusion, confirmation or verification by PwC.

Thank you

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