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National Audit Office

REPORT

Energy efficiency installations under the Energy Company Obligation

Department for Energy Security & Net Zero

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Energy efficiency installations under the Energy Company Obligation

Department for Energy Security & Net Zero

Report by the Comptroller and Auditor General

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This report has been prepared under Section 6 of the National Audit Act 1983 for presentation to the House of Commons in accordance with Section 9 of the Act

Gareth Davies
Comptroller and Auditor General
National Audit Office

9 October 2025

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Key facts

External wall insulation installed under Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme (GBIS)

98%

homes that the Department for Energy Security & Net Zero (DESNZ) and Ofgem believe have major issues requiring remediation

6%

homes that DESNZ and Ofgem believe present immediate health and safety risks (part of the 98%)

22,000 to 23,000	homes with external wall insulation installed before 16 January 2025 that DESNZ and Ofgem believe have major issues requiring remediation
4,737	homes already identified through audits as having major issues requiring remediation
1,901	homes with these issues that had been fully remediated by mid-September 2025

Internal wall insulation installed under ECO4 and GBIS

29%

homes that DESNZ and Ofgem believe have major issues requiring remediation

2%

homes that DESNZ and Ofgem believe present immediate health and safety risks (part of the 29%)

9,000 to 13,000	homes with internal wall insulation installed before 16 January 2025 that DESNZ and Ofgem believe have major issues requiring remediation
1,539	homes already identified through audits as having major issues requiring remediation
1,033	homes with these issues that had been fully remediated by mid-September 2025

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What this investigation is about

1 This report is about recent failures with the quality of installations of external and internal wall insulation and suspected fraud on the Energy Company Obligation (ECO). ECO is a government scheme intended to tackle fuel poverty and reduce carbon emissions in Great Britain.[1] It obligates energy suppliers to fund the installation in homes of energy efficiency measures such as insulation. Many organisations are involved in delivering ECO, with responsibilities for quality shared between the private sector and government. In our role of supporting Parliament to hold the government to account, our focus is on the Department for Energy Security & Net Zero (DESNZ) – which is responsible for the design of ECO, and Ofgem (the energy regulator) – which is responsible for ECO's administration in line with government policy. Our report also covers what DESNZ knows about whether wider quality issues exist on these or other government domestic retrofit schemes, including those under different quality arrangements.

2 Under ECO, medium and large energy suppliers are obligated to achieve a minimum level of energy bill savings in homes through energy efficiency installations, based on their relative share of the gas and electricity market. ECO is funded from consumer bills and aimed at low-income households in homes with poor energy efficiency ratings. There are currently two ECO schemes: ECO4 runs from April 2022 to March 2026 (although DESNZ is consulting on extending ECO4 by six to nine months), and the Great British Insulation Scheme (GBIS), with broader eligibility, runs from March 2023 to March 2026.

3 The government expects that the schemes will together deliver £280 million in annual energy bill savings for households. Under ECO4, energy suppliers are obligated to achieve £224 million in annual energy bill savings, with each beneficiary household expected to save up to £450 from their annual energy bills, based on the July 2025 price cap.[2] Under GBIS, energy suppliers are obligated to achieve nearly £56 million in annual energy bill savings, with each household expected to save up to £230, based on the July 2025 price cap. Neither scheme specifies carbon emissions reductions targets; however, the government expects both to contribute to meeting its carbon budgets.

1 The findings from this report cover England, Scotland and Wales, but not Northern Ireland.
2 This expectation of annual energy bill savings is based on DESNZ's understanding of the future impact of typically installed measures in a typical home.

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4 DESNZ sets ECO policy and legislation, including the total obligation across energy suppliers, and is responsible for overseeing the schemes' performance and ensuring they meet their strategic aims and objectives. Ofgem's responsibilities include approving the eligibility of installations reported by energy suppliers, reporting scheme progress to DESNZ, and progressing counter-fraud investigations where allegations of fraud have been made. This does not include assessing the quality of installations, but since January 2025, Ofgem has overseen additional audits of the quality of external and internal wall insulation projects and provided a helpline for affected households.

5 The private sector plays a key role in delivering ECO and assuring the quality of the work.

- Medium and large energy suppliers fund the installation of energy efficiency measures and are responsible for ensuring the installations they report to Ofgem meet eligibility requirements.
- Retrofit businesses contract 'assessors' (who provide information about a home's energy performance for the preparation of a retrofit design), 'coordinators' (who manage the projects) and 'installers' (who install the measures). They must be certified to perform these roles.
- TrustMark – a private not-for-profit company – acts as a government-endorsed quality scheme for energy efficiency retrofits. It collates information on all ECO projects and the audits that have been undertaken of those projects. TrustMark sub-licences 'scheme providers' that register retrofit businesses with it.
- United Kingdom Accreditation Service (UKAS) – a private not-for-profit company – is the UK national accreditation body. It accredits the 'certification bodies' that certify that installers meet the required installation quality standards.
- Certification bodies certify retrofit installers as able to install measures that comply with the relevant standard. Many certification bodies also offer a competent person scheme for retrofit installer staff.
- Scheme providers register retrofit businesses and assess them against the relevant standard. The scheme providers for the installers are also certification bodies.

6 Ofgem reports that 243,900 homes have been upgraded under ECO4 to the end of March 2025, and 60,600 homes under GBIS. Across both schemes combined there have been 28,000 installations of external wall insulation (3% of all measures installed) and 45,200 installations of internal wall insulation (5%). During 2024, TrustMark informed DESNZ of two separate issues on these schemes.

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- In April 2024, TrustMark notified DESNZ of suspected fraud, whereby some retrofit businesses were overclaiming for work undertaken. Undetected fraud in the schemes means that fewer consumers may benefit overall.
- In October 2024, TrustMark notified DESNZ of high levels of external wall insulation installations that were non-compliant with the relevant quality standard. The following month, TrustMark similarly highlighted issues with internal wall insulation. Non-compliance covers a wide range of severity, from major issues that pose immediate risks to the health and safety of the household to minor issues such as missing paperwork.

Both the fraud and quality non-compliance issues could also reduce the effectiveness of ECO in achieving its objectives of achieving energy bill savings for consumers and reducing carbon emissions.

7 DESNZ acknowledges that there have been clear failings with ECO4 and GBIS. In November 2024, it established a workstream to better understand the extent of the problems with non-compliant installations of external and internal wall insulation and to identify remediation options.

8 Our report focuses on DESNZ's and Ofgem's responsibilities and sets out:

- **an overview of ECO:** how the current schemes are intended to work, how the government became aware of issues, and DESNZ's plans for reform (Part One);
- **poor-quality energy efficiency installations:** the scale and severity of the non-compliance issues, the government's immediate response, and progress with remediating problems caused by non-compliance (Part Two);
- **root causes of widespread quality issues:** the likely causes of quality non-compliance, and the system not identifying it sooner (Part Three); and
- **suspected fraud:** what is known about the scale and nature of suspected fraud, how the government has responded, and the system's weaknesses and exposure to fraud (Part Four).

9 We recommend some actions for DESNZ as it seeks to remediate affected homes, develop the forthcoming Warm Homes Plan and manage the future risks of quality non-compliance and fraud in its domestic retrofit schemes.

10 So that we could provide a timely report on what has happened, our investigation is based primarily on information held by DESNZ and Ofgem, which we audit, with support from TrustMark and UKAS, which – as private sector companies – we do not audit. We have not sought to undertake our own inspection of the homes affected, nor to gather evidence directly from the affected households or retrofit businesses. We do not evaluate the overall value for money of ECO or whether it is likely to achieve the expected reductions in consumer bills or carbon emissions. We also do not comment on ongoing investigations on suspected fraud.

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Summary

Key findings

Poor-quality energy efficiency installations

Poor-quality fitting of external and internal wall insulation under ECO4 and GBIS

11 DESNZ and Ofgem believe that nearly all external wall insulation and around a third of internal wall insulation fitted under ECO4 and GBIS have major issues requiring remediation. They commissioned audits of 758 projects which, if extrapolated, found the following.

- **98% of homes with external wall insulation have major issues requiring remediation (between 22,000 and 23,000 homes).** 92% have major issues that will affect the insulation's performance, often creating the risk of water ingress and mould; 6% have health and safety risks that require immediate correction, such as inadequate ventilation, and may also have other major issues.
- **29% of homes with internal wall insulation have major issues requiring remediation (between 9,000 and 13,000 homes).** 27% have major issues that will affect the insulation's performance, often creating the risk of condensation and mould; 2% have health and safety risks that require immediate correction, such as inadequate ventilation and poor electrical safety, and may also have other major issues.

They have not audited homes retrofitted from 16 January 2025 onwards, and we have not included these homes in the estimates above (paragraphs 2.2 to 2.4 and Figure 6).

12 By September 2025, 2,934 of these homes have been remediated but DESNZ does not have a timetable for the completion of all remediation work. This represents 8% (1,901) and 10% (1,033) of the estimated homes with major issues requiring remediation to their external and internal wall insulation respectively. DESNZ is encouraging households contacted for an audit of external or internal wall insulation installed under ECO4 and GBIS to allow an inspection of their home so that remediation can be organised. So far, these audits of homes have identified 4,737 homes with external wall insulation that has major issues requiring remediation and 1,539 homes with internal wall insulation that has major issues requiring remediation. DESNZ has asked TrustMark to confirm that installers have removed immediate health and safety risks flagged by audits within 24 hours. DESNZ also tracks (through TrustMark) whether the issues identified have been remediated to the right standard. It does not track how long this has taken. DESNZ does not yet have a timetable or plan for when or how all other homes affected will be inspected and problems remediated (paragraphs 2.17, 2.18, 2.23 and Figure 10).

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13 **The cost of remediation should normally be between £250 and £18,000 per property if it is done before damage occurs.** DESNZ does not have a full estimate of the total cost of remediating all affected homes. In the most extreme case TrustMark had seen, badly fitted insulation had led to damp, mould and rot costing over £250,000 (including VAT) to remediate. However, it believes that most remediation should cost from £250 to £6,000 per property for internal wall insulation and from £5,000 to £18,000 for external wall insulation, if it can be done before major damage occurs (paragraph 2.19).

14 **There are no specific requirements on energy suppliers for the quality of the retrofitting they pay for.** The government asked them to rely on TrustMark as the quality scheme provider and placed no ECO4 or GBIS specific requirements on energy suppliers with regards to the quality of the projects they paid for, beyond checking with TrustMark they were installed by TrustMark-registered retrofit businesses. However, DESNZ told us that it expects energy suppliers should take responsibility for the work that their contractors undertake. It also told us that since they were alerted to the issues with non-compliance in external and internal wall insulation, some energy suppliers have introduced additional quality checks into their processes (paragraph 2.22).

15 **The original installer is liable for all the cost of remediating non-compliant installations and should have a guarantee in place to cover costs up to £20,000.** DESNZ has stated that no household with a faulty installation should have to pay to fix the issues, but has not clarified how this can be achieved in exceptional cases when the installer or guarantee does not cover the full costs. It is currently relying on the issues being resolved through existing routes to remediation, including recourse to the ombudsman and legal processes. If the installer has ceased to trade, remediation costs up £20,000 should be covered by the 25-year guarantee that TrustMark requires installers to have with its approved third parties (paragraphs 2.20 and 2.21).

16 **Not all installers are fully complying with the remediation process.** TrustMark told us that of the 388 external and internal wall insulation installers registered with it at the end of August 2025 who had completed work under ECO4 and GBIS, 225 installers had between them over 1,500 projects with remediation work that had taken longer than 12 weeks. It also told us that 27 of the 194 registered retrofit businesses with outstanding work were no longer registered with it. It said there was a risk of some directors closing and restarting their businesses to avoid their liabilities, and asking for new registrations (paragraph 2.25).

The quality of installation on other domestic retrofit schemes

17 **Other domestic retrofit measures and schemes can occasionally fail to meet quality standards, but DESNZ believes they do not have the same serious and systemic failures as ECO4 and GBIS external and internal wall insulation.** For other measures covered by TrustMark's consumer protection and quality assurance, DESNZ's audits show the following (paragraph 2.9 and Figures 8 and 9).

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- **Other ECO4 and GBIS measures (such as heat pumps, solar panels and cavity wall insulation):** DESNZ found 212 of the 910 additional measures installed alongside external and internal wall insulation had major issues that will affect the performance of the additional measure (23%), and six (1%) had severe issues, posing immediate health and safety risks. It is not possible to extrapolate these results to all installations under ECO.

- **Social Housing Decarbonisation Fund and Home Upgrade Grant:** These are government-funded domestic retrofit schemes aimed at low-income households and those in social housing. DESNZ commissioned comparable audits of these schemes to the external and internal wall insulation ECO projects. For the Social Housing Decarbonisation Fund (wave 2.1) and Home Upgrade Grant (phase 2), DESNZ's audits found 12% of external wall insulation, 10% of internal wall insulation and 10% of all measures had major issues. If extrapolated across all homes retrofitted under these schemes by March 2025, this implies that around 6,500 homes have major issues requiring remediation. DESNZ expects to have results on earlier waves of these schemes in November 2025. DESNZ has provided grant recipients (housing associations and local authorities) with guidance to identify, and where necessary remediate, properties.

For DESNZ's retrofit schemes covered by other assurance regimes, its information is not directly comparable but shows the following (Figure 9).

- **Previous ECO schemes:** In 2022, Ofgem reported that the ECO3 fail rate for measures was 11%, based on installation quality. These are not based on a representative sample, and it is not clear how serious these failings were.

- **Boiler Upgrade Scheme:** This is the government's other current main retrofit scheme, providing grants to households and small companies installing low-carbon heating measures such as heat pumps. Ofgem estimates that 2% of the measures installed under the scheme in 2024-25 did not fully meet the grant conditions, including failures that are not related to the quality of the installations.

How issues on ECO4 and GBIS emerged and how the government responded

18 In 2021, DESNZ introduced a new consumer protection and quality assurance system for ECO that failed to warn of significant issues with external and internal wall insulation until late 2024. In 2016, the government's *Each Home Counts* review recommended introducing a new framework and industry-wide compliance and enforcement regime.[3] This included a new focus on whether the measures would achieve energy efficiency for the 'whole home', as well as being installed correctly. In July 2021 (before ECO4 was launched), TrustMark became responsible for this new part of DESNZ's consumer protection and quality assurance system and took responsibility from Ofgem for monitoring quality. DESNZ recognised at the start of ECO4 that there continued to be risks of fraud and non-compliance with quality standards. The media reported cases of bad mould in retrofitted homes in 2024, but the government was unaware that these problems were widespread until TrustMark shared analysis of its audit data in October 2024 (paragraphs 1.6 to 1.9).

3 Department for Business, Energy & Industrial Strategy and Department for Communities & Local Government, *Each Home Counts*, December 2016.

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19 **After TrustMark raised concerns, DESNZ and Ofgem took immediate action, but needed to gather more information on who was affected.** For example:

- **DESNZ and Ofgem sought to identify homes in need of remediation and better understand the extent of the issues.** DESNZ immediately asked TrustMark to inspect a further 1,000 properties that TrustMark believed more at risk. In January 2025, DESNZ asked Ofgem to oversee a wider programme of audits by TrustMark, certification bodies and external consultancy services to both better understand the extent of the issue and identify homes needing remediation. The results of the first representative samples were available in August 2025, suggesting the widespread issues set out in paragraph 11 above (paragraph 2.11).
- **DESNZ asked the certification bodies and scheme providers to suspend the worst-performing installers to limit further non-compliance.** DESNZ asked the certification bodies and scheme providers (via TrustMark) to suspend the certificates and TrustMark registration (respectively) of 38 installer businesses to limit further non-compliant installations of external and internal wall insulation. As of September 2025, certification bodies had reinstated 21 of the 38 suspended installers after they had remediated all the problems identified by the initial set of audits (paragraphs 2.13 and 2.26 and Figure 11).
- **DESNZ and Ofgem communicated the issues to the public and directly to potentially affected households.** In January 2025, the Minister for Energy Consumers made a statement in Parliament about ECO4 and GBIS issues, and Ofgem provided a helpline for potentially affected households. Ofgem reports that it had about 3,200 calls and 2,700 emails by August 2025. It also wrote to all 60,000 households with ECO4 and GBIS external and internal wall insulation by mid-February, to set out what would happen next (paragraph 2.14 and 2.15).
- **DESNZ and Ofgem brought in some immediate changes to the system of assurance.** In April 2025, DESNZ agreed a new Memorandum of Understanding with TrustMark, and that it would have an observer on TrustMark's board. It also agreed revisions to the quality standards to require retrofit coordinators to conduct site visits. Ofgem began hosting a weekly roundtable with certification bodies. It also improved the reporting processes for all the audits being undertaken by TrustMark and the certification bodies and those directly commissioned by DESNZ and Ofgem (paragraph 2.16).

Root causes of widespread quality issues

20 **DESNZ, Ofgem, TrustMark and UKAS suggested potential reasons that retrofit businesses are failing to meet quality standards:** poor workforce skills, including subcontracting work to others who are not competent or registered with TrustMark; uncertainty over how the different standards apply to different jobs; and shoddy work produced as retrofit businesses 'cut corners' in both the design and installation (paragraph 3.2).

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21 DESNZ has undertaken root cause analysis to understand why the issues in ECO4 and GBIS were not identified sooner. DESNZ commissioned reviews on various aspects of ECO and the consumer protection and quality assurance system (paragraph 3.3). It found the following.

- **The government had limited oversight:** DESNZ designed the new ECO consumer protection and quality assurance system to operate at arm's length from the government. In doing so, it retained responsibility for the design and outcome of ECO but gave itself limited oversight and influence. Ofgem was responsible for the administration of the schemes, but was required to rely on TrustMark for the quality of installations. DESNZ also did not fully use the levers it did have. It had limited senior leader attention on ECO, gaps in its internal governance, poor risk management and insufficient in-house technical expertise. This all led its senior leaders to assume the system was working (paragraphs 3.4 to 3.7).

- **The government created an overly complex system that ultimately failed:** There are unclear and fragmented roles, responsibilities and accountabilities among DESNZ, Ofgem, TrustMark, UKAS, certification bodies and scheme providers. These were not properly understood by all stakeholders, with poor process mapping and scenario planning. There was also no meaningful cross-organisational governance, and information sharing between organisations was poor. This made identification and escalation of risks more difficult (paragraphs 3.8 and 3.9).

- **TrustMark's funding arrangements limited its ability to scale up its operations:** TrustMark's analytical systems were not all operational until the latter half of 2024. This meant it had neither the information nor the analysis needed to identify non-compliance trends in a timely manner. TrustMark told us that its funding model meant it did not have the free cashflow to develop its capabilities sooner or to recruit sufficient qualified staff to audit more projects. DESNZ's review found no evidence that it had modelled TrustMark's funding against the expected increase in installed measures under ECO and the assurance requirement (paragraphs 3.10 to 3.12).

- **TrustMark and the certification bodies collectively conducted insufficient audit and monitoring:** TrustMark's funding did not allow it to employ enough trained staff to carry out sufficient audit of the projects. While the certification bodies conducted the amount of audit they were asked to by the relevant standard and based on the information they had, they did not have visibility of the full level of projects completed, the level expected by the standard was not based on a clear understanding of the risk and risk appetite, and it was possible for installers to game the system to reduce the level of audit they experienced. It was also difficult to understand what the audits meant, because until March 2025 they did not have a consistent approach to categorising the nature and severity of audit outcomes in a way that explained the implications for the safety and quality of the installation (paragraphs 3.13 to 3.20).

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Suspected fraud

22 While there are suspicions of fraud in ECO, the overall level is unknown. In November 2024, Ofgem used information provided by TrustMark to estimate that retrofit businesses had falsified claims for ECO installations in between 5,600 and 16,500 homes to potentially claim between £56 million and £165 million from the energy suppliers under the Obligation. We were also told that there are separate suspicions of fraudulent claims on installations in homes and for households that are not eligible, and that installations can be used as part of wider criminal activity. DESNZ and Ofgem do not have data of sufficient quality to accurately estimate the overall level of fraud in ECO (paragraphs 4.2 and 4.3).

23 We identified three weaknesses in DESNZ's approach to fraud in ECO. These are the following.

- **Inherent risks in the scheme design and its operation:** These include the commercial pressure on installers to reduce costs, maximise the stated efficiency savings and identify properties and people as eligible. Despite being originally intended as a control against the incentives on the installer, coordinators are often contracted or employed by the installer and there is therefore an incentive for retrofit coordinators to approve non-compliant installations to maintain business (paragraphs 4.8 and 4.9).
- **DESNZ did not carry out a fraud risk assessment during the design of ECO4 or assign responsibility for managing specific fraud risks:** Ofgem subsequently developed a fraud risk assessment on DESNZ's behalf, starting work in June 2023. As of September 2025, DESNZ was yet to agree ownership of some of the identified fraud risks with other organisations. DESNZ intends this ownership to be agreed in October 2025 (paragraphs 4.10 and 4.11).
- **Ofgem relies on others to detect and report fraud, but the other organisations have no requirement to look for it and poor information sharing hinders their ability to do so:** Ofgem told us that its responsibilities in relation to fraud are limited to progressing counter-fraud investigations where allegations have been made, and it relies on energy suppliers, TrustMark, certification bodies and scheme providers to alert it to any suspicions of fraud. However, these bodies do not have specific responsibilities for detecting and preventing fraud, and have limited incentive to actively seek fraud out. Some told us they nonetheless feel obliged to report potential fraud, but we found weaknesses in the capturing, sharing and reviewing of data and intelligence that hinders their ability to do so (paragraphs 4.12 and 4.13).

System reform

24 DESNZ is considering how to apply lessons to future policies and system reform. It intends to use its learning to inform the design of its future schemes and its forthcoming Warm Homes Plan (paragraphs 1.10 and 1.11).

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Conclusion

25 Energy company obligations and other retrofit schemes are important to help reduce fuel poverty and meet the government's ambitions for energy efficiency. There have been clear failures in the design and set-up of ECO4 and GBIS and their consumer protection and quality assurance system, which have led to widespread issues with the quality of installations and suspected fraud. When DESNZ and Ofgem became aware of these issues, they responded quickly. DESNZ has also been very keen to identify what went wrong, to learn lessons and to understand how to improve the system. But the current system left it with few levers and limited information. The two challenges DESNZ now faces are to ensure that the relevant businesses meet their obligations to remediate all the affected homes as quickly as possible and to reform the system so that this cannot happen again.

Recommendations

26 Some of the issues with fraud and non-compliance set out in this report are not new and have been found in previous retrofit schemes (Appendix One). It is therefore important that DESNZ considers how it can improve the consumer protection and quality assurance system to give consumers confidence. We recommend that DESNZ:

a **takes clear responsibility for its consumer levy funded schemes.** It should publish an updated accounting officer system statement with its 2025-26 annual report and accounts to include how it gains assurance over the outcomes of departmental policy funded by consumers as well as the Exchequer;

b **clarifies its approach to remediation for ECO alongside its Warm Homes Plan**, by starting to monitor and report how long remediation of affected projects takes, setting out a timetable for identifying and remediating other properties affected by poor-quality installations of external and internal wall insulation under ECO, and setting out the process for how households can get the work remediated, including in cases where they are struggling to engage the original installer;

c **reforms the system of consumer protection and quality assurance** for retrofit schemes in response to the lessons arising from this report and summarised in **Figure 1**. It should set out an implementation plan for this reform alongside its upcoming Warm Homes Plan; and

d **reports annually on a statistically robust estimate of the level of fraud and non-compliance in each of its retrofit schemes**, starting in its 2025-26 annual report and accounts, and report how it is acting to reduce these levels.

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Figure 1

Ten key lessons to take from the issues identified in this report for the system of consumer protection and quality assurance for retrofits

As the Department for Energy Security & Net Zero (DESNZ) seeks to reform the system of consumer protection and quality assurance for its retrofit schemes, it should take account of the lessons arising from this report, which we summarise below

Clarity for homeowners: the system needs to empower consumers who have retrofitting to their home to know that it is to the right standard and to get remedy if it is not. The means of remedy need to be easy to understand and to access. DESNZ needs to determine how to secure the remediation in exceptional cases where the original installer or their guarantee does not do so.

Ultimate government accountability and responsibility: DESNZ is ultimately responsible for the value for money of the schemes and whether they meet their objectives. DESNZ must give equal weight to its responsibilities for its government-funded and supplier obligation schemes, including in its oversight, monitoring, reporting and evaluation of the schemes.

DESNZ needs visibility of how the scheme is working: this means DESNZ defining key metrics that it wants to be updated on and arranging for its internal governance to periodically review these. DESNZ then needs the means to intervene (either directly or through others) when the scheme is not working as intended.

Roles and responsibilities must be clear: all parties need to understand how their role relates to others, with scenario testing of how the system is meant to work, and without unnecessary overlap. Both retrofit installers and consumers need to be able to understand who checks what, and who can take what action in the event of problems.

Cross-organisational governance and issue escalation: there should be forums where DESNZ and the different organisations come together to review the delivery of the schemes and to escalate issues in a timely manner. There should also be clear whistleblowing routes through to the government.

Incentives and sanctions: the system needs to give reasonable prospect that action will be taken against non-compliant assessors, coordinators and installers to deter fraud or shoddy work. There also needs to be a realistic prospect of fraudulent and non-compliant measures being rejected.

Funding for the consumer protection and quality assurance system: fees, charges and financing should be based on a model of the assurance needs of the system, given the expected number and flow of installations.

Fraud prevention: this requires clear overall responsibility for identifying and preventing fraud. Organisations then need to share a clear risk assessment, intelligence, information and data that can be used to identify fraud, and to use data analytics to identify and pursue fraud.

Risk appetite: DESNZ needs to set and justify its risk appetite on the level of fraud and number of retrofit installations that it expects to not meet quality standards for both its government-funded and supplier obligation schemes. This should then be used to set the expected level of audit and assurance.

Audit regime: this should be sufficient to deter gaming and provide regular assurance that the level of fraud and non-compliant installations are within DESNZ's risk appetite. The overall outcomes of these audits should be published at least annually.

Note

1 These are key issues identified through this National Audit Office investigation on energy efficiency installations under the Energy Company Obligation. It is not a comprehensive list of the issues a reformed system must address.

Source: National Audit Office analysis of issues identified in this report and following fieldwork discussions with the Department for Energy Security & Net Zero, Ofgem, TrustMark and the United Kingdom Accreditation Service

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Part One

The Energy Company Obligation

1.1 This part sets out:

- an overview of the Energy Company Obligation (ECO);
- how the current ECO schemes are intended to work;
- the risks and emerging issues of quality non-compliance and suspected fraud; and
- the Department for Energy Security & Net Zero's (DESNZ's) plans for reform.[4]

Overview of ECO

1.2 ECO is a government scheme designed to tackle fuel poverty and reduce carbon emissions in Great Britain by funding energy efficiency measures, such as insulation, in low-income homes with poor energy efficiency ratings (**Figure 2** on pages 17 and 18).[5] ECO is funded from consumer energy bills and requires medium and large energy suppliers to achieve minimum levels of energy bill savings in homes through energy efficiency installations.[6] The first ECO scheme ran from January 2013 to March 2015.

1.3 There are currently two ECO schemes: ECO4 and the Great British Insulation Scheme (GBIS). The government expects the two schemes will together deliver £280 million in annual energy bill savings for households. ECO4 runs from April 2022 to March 2026 (although DESNZ is consulting on extending ECO4 by six to nine months). Under ECO4, energy suppliers are obligated to achieve £224 million in annual energy bill savings, with each energy supplier's share of this target based on their relative share of the gas and electricity market. GBIS also promotes energy efficiency installations and operates in a similar way to ECO4, but has broader eligibility and runs from March 2023 to March 2026. Under GBIS, energy suppliers are obligated to achieve nearly £56 million in annual energy bill savings.

4 The Department for Energy Security & Net Zero (DESNZ) was established on 7 February 2023. It took on the energy policy responsibilities of the Department for Business, Energy & Industrial Strategy (BEIS), which was dissolved on that date. BEIS was created in July 2016, when the Department for Energy & Climate Change (DECC) merged with the Department for Business, Innovation & Skills. Mentions of DESNZ in this report therefore refer to DECC prior to July 2016 and to BEIS between July 2016 and February 2023.

5 The findings from this report cover England, Scotland and Wales, but not Northern Ireland.

6 The energy price cap, set by Ofgem, is the maximum amount that energy suppliers can charge consumers on a standard variable tariff for each unit of energy and the standing charge. Based on the July to September 2025 energy price cap, government social and environmental schemes (including ECO4 and GBIS, as well as schemes supporting renewable energy generation) contributed £198 (11.5%) of the £1,720 per year energy price cap for a typical household that uses electricity and gas and pays by direct debit.

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Figure 2

Overview of current Energy Company Obligation (ECO) schemes

There are currently two ECO schemes: ECO4 and the Great British Insulation Scheme (GBIS)

Scheme characteristics	ECO4	GBIS
Timescales, targets and criteria		
Runs from	April 2022 to March 2026[1]	March 2023 to March 2026
Targets	• To achieve more than £224 million in annual energy bill savings for homes. • To install 90,000 external or internal wall insulation measures. • To upgrade a minimum of 150,000 private tenure homes with an energy performance certificate rating of E, F or G.	• To achieve nearly £56 million in annual energy bill savings for homes.
Expected contribution to carbon emissions reductions over fourth, fifth and sixth carbon budgets (MtCO2e)[2]	4.7	2.0
Key eligibility criteria include but are not limited to:[3]	A property with an energy performance certificate rating of D to G (subject to housing tenure type, for example owner-occupied, social rented or private rented) and: • with consumers in receipt of certain benefits; or • where local authorities have referred consumers they identify as low income and vulnerable.	A property with an energy performance certificate rating of D to G (subject to housing tenure type) and: • consumers who are on low incomes; • homes that are in council tax bands A to D in England or A to E in Scotland or Wales; or • where local authorities have referred consumers they identify as low income and vulnerable.
Installations to the end of March 2025[4]		
Value[5]	£4 billion	£226 million
Total number of homes retrofitted	243,900	60,600
Total number of measures installed	810,700	76,900
Number of homes retrofitted with external wall insulation[6]	26,500	1,500
Number of homes retrofitted with internal wall insulation[6]	42,500	2,700
Examples of measures available[7] (those in bold are for both schemes, the others are available only under ECO4)		
• **External and internal solid, hybrid, and cavity wall insulation** • **Loft, pitched, flat, and room-in-roof insulation** • **Underfloor and solid floor insulation** • **Heating controls**	• First time central heating • Electric storage heaters • Boiler upgrades (including heat pumps), repairs or replacements • District heating system connection	• Higher performance external doors • Solar photovoltaic • Draught proofing • Window glazing

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Figure 2 *continued*
Overview of current Energy Company Obligation (ECO) schemes

Notes

1 DESNZ is consulting on extending ECO4 by six to nine months.

2 Neither scheme specifies carbon emissions reductions targets but the government expects both to contribute to meeting its carbon budgets. Carbon emissions are expressed in million tonnes of carbon dioxide equivalent (MtCO2e).

3 This is not a comprehensive list of scheme eligibility requirements. On both ECO schemes, the energy performance certificate eligibility criteria vary depending on housing tenure type. Both schemes also allow for a certain amount of 'in-fill', whereby homes that would not otherwise be eligible can be upgraded under the scheme. Meeting key eligibility criteria does not guarantee that an energy supplier or installer will decide to install energy efficiency measures in a home.

4 Installation numbers are rounded to the nearest 100. Installations from 1 April 2022 to 30 June 2022 could count towards suppliers' ECO3 (interim) or ECO4 obligations, but are all included in the ECO4 totals provided in this figure.

5 'Value' includes the delivery costs and excludes the scheme administrative costs. The figures are not adjusted for inflation.

6 Across both schemes combined 28,000 homes had been retrofitted with external wall insulation (3%) and 45,200 homes had been retrofitted with internal wall insulation (5%) at the end of March 2025. External and internal wall insulation numbers include installations on both cavity walls and solid walls. They exclude the very small number of installations of external wall insulation on park homes and hybrid wall insulation.

7 Factors such as tenure type and starting energy performance certificate rating will influence which measures might be available to a property under the schemes.

Source: National Audit Office analysis of Department for Energy Security & Net Zero and Ofgem documents

1.4 DESNZ and Ofgem record that a total of 304,500 homes were upgraded through ECO4 and GBIS up to the end of March 2025, worth £4.2 billion. DESNZ expects beneficiary households to see annual energy bill savings of up to £450 under ECO4, and up to £230 under GBIS, based on the July 2025 price cap.[7]

How the schemes are intended to work

Roles and responsibilities

1.5 The retrofitting of measures under ECO4 and GBIS broadly follows four stages (**Figure 3**). The government established the schemes with roles and responsibilities shared across government and the private sector (**Figure 4** on pages 20 to 22). In addition, there are further requirements for microgeneration measures such as solar panels and heat pumps, under the Microgeneration Certification Scheme.

7 This expectation of annual energy bill savings is based on DESNZ's understanding of the future impact of a typically installed measure in a typical home, so cannot be applied to individual homes.

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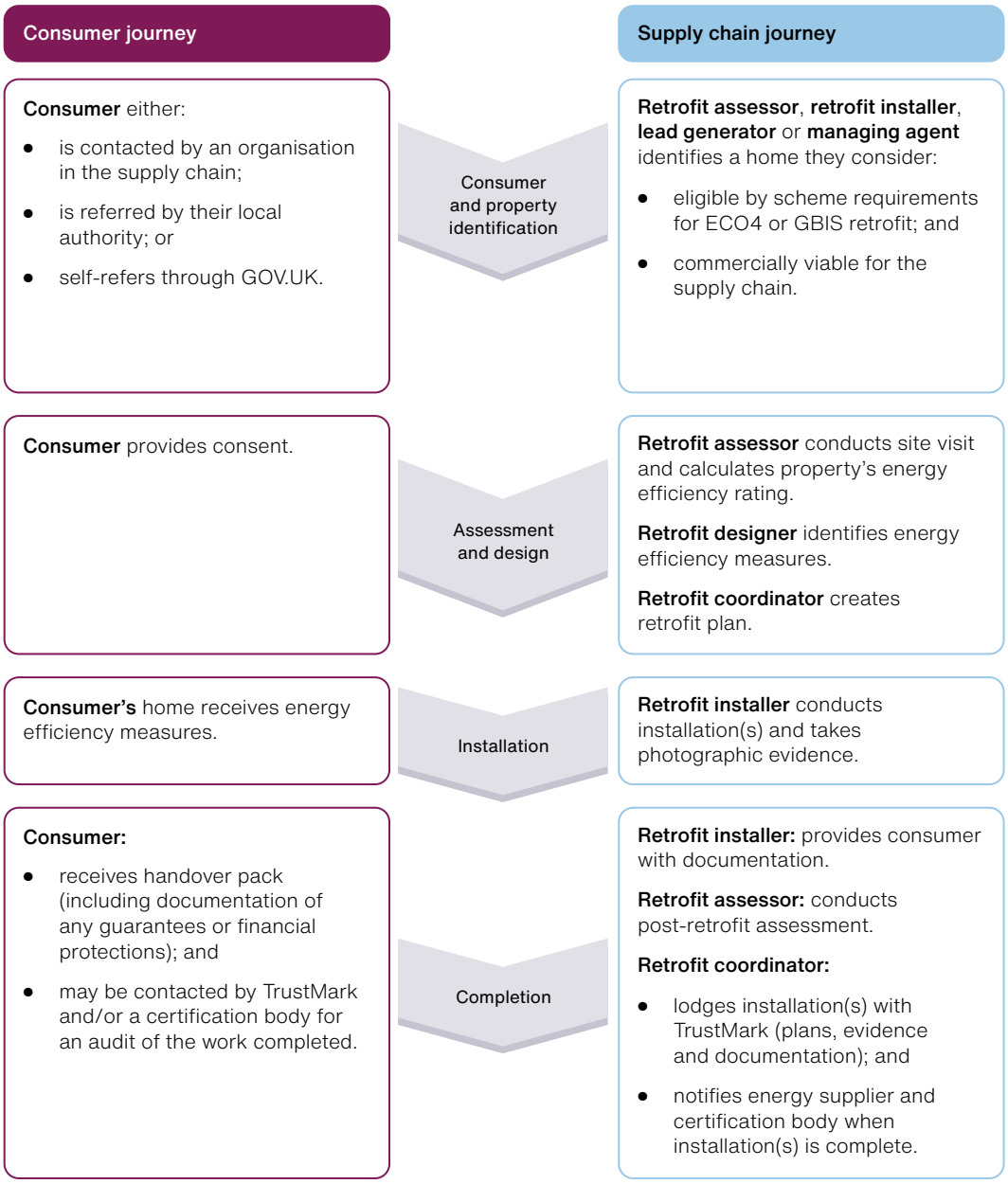
Figure 3

How an Energy Company Obligation (ECO) retrofit project works

ECO4 and Great British Insulation Scheme (GBIS) projects go through a four-stage process



Notes

1 The supply chain comprises retrofit assessors, installers and coordinators that are businesses registered with TrustMark and certified, either by a scheme provider sub-licensed by TrustMark or by a certification body accredited by the United Kingdom Accreditation Service. The supply chain also includes some other roles that do not require certification, including lead generators, managing agents and retrofit designers. For further information on the roles and responsibilities of organisations and entities delivering ECO4 and GBIS, see Figure 4.

2 This figure simplifies a complex multi-stage process to draw out aspects particularly relevant to this report, and as a result some processes are omitted.

Source: National Audit Office analysis of Department for Energy Security & Net Zero and Ofgem documents

Figure 4

Current roles and responsibilities in the Energy Company Obligation (ECO)

ECO roles and responsibilities are shared across different organisations

Organisation or individual	Key roles and responsibilities
Scheme design and performance	
Department for Energy Security & Net Zero (DESNZ)	Setting ECO policy and legislation, including the total obligation across energy suppliers; overseeing schemes' performance and ensuring they meet their strategic aims and objectives.
Scheme administration	
Ofgem	Administering the schemes on behalf of DESNZ; calculating obligations for energy suppliers and reporting the extent to which energy suppliers are meeting obligations to DESNZ; considering enforcement action where obligations are not met; developing scheme guidance; monitoring and approving eligibility of installations reported by energy suppliers; progressing counter-fraud investigations where allegations of fraud have been made.
Other central government functions	
Ministry of Housing, Communities & Local Government (MHCLG)	Responsible for all building regulations, including those that relate to retrofit installations. To carry out this responsibility, MHCLG is supported by the independent Building Safety Regulator, which oversees the building control profession and competent person schemes, and provides advice to MHCLG on building regulations. MHCLG is also responsible for the Energy Performance Certificate (EPC) assessment regime, to which the methodology used by retrofit assessors to calculate a home's energy performance aligns.
Department for Business & Trade	Licensing TrustMark to operate as the government-endorsed quality scheme.
Assuring installations meet quality and energy efficiency standards	
TrustMark	Managing the quality assurance framework intended to verify compliance with standards and procedures; sub-licensing scheme providers that register retrofit businesses (assessors, coordinators and installers) with TrustMark; overseeing scheme providers in respect of meeting the requirements of the relevant standard (PAS 2035); auditing a sample of installations; reporting installations to Ofgem.
Scheme providers	There are three types of scheme provider licenced by TrustMark. Those that certify retrofit assessors to provide information about a home's energy performance for the preparation of a retrofit design against the relevant standard (PAS 2035); those that certify retrofit coordinators to oversee retrofit projects against the relevant standard (PAS 2035); and those that certify retrofit installers.
United Kingdom Accreditation Service (UKAS)	Checking the checkers of installers; UKAS accredits the certification bodies (against PAS 2031 and ISO 17065) that certify that installers are competent to meet the required quality standard (PAS 2030).
Certification bodies	Certifying retrofit installers in accordance with PAS 2031 and checking that the installers are installing energy efficiency measures that comply with the relevant standard (PAS 2030). Many certification bodies also offer a competent person scheme for retrofit installer staff. For external and internal wall insulation they also act as scheme providers for the installers.
Assessment, design and installation of energy efficiency measures	
Retrofit assessors	Providing information about a home's energy performance for the preparation of a retrofit design, including complying with the relevant standard (PAS 2035).
Retrofit coordinators	Overseeing retrofit projects including ensuring they comply with the relevant standard (PAS 2035).
Retrofit installers	Installing energy efficiency measures in homes that comply with the relevant standard (PAS 2030).
Other private entities	Providing services to key organisations in this figure as, for example, lead generators, managing agents and retrofit designers; however, these do not have roles and responsibilities that require licensing or certification.
Other	
Energy suppliers	Funding the installation of measures to meet their obligations and ensuring the installations they report to Ofgem meet eligibility requirements; mitigating the risk of fraud and reporting fraud to Ofgem.

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The consumer protection and quality assurance system for external and internal wall insulation under ECO

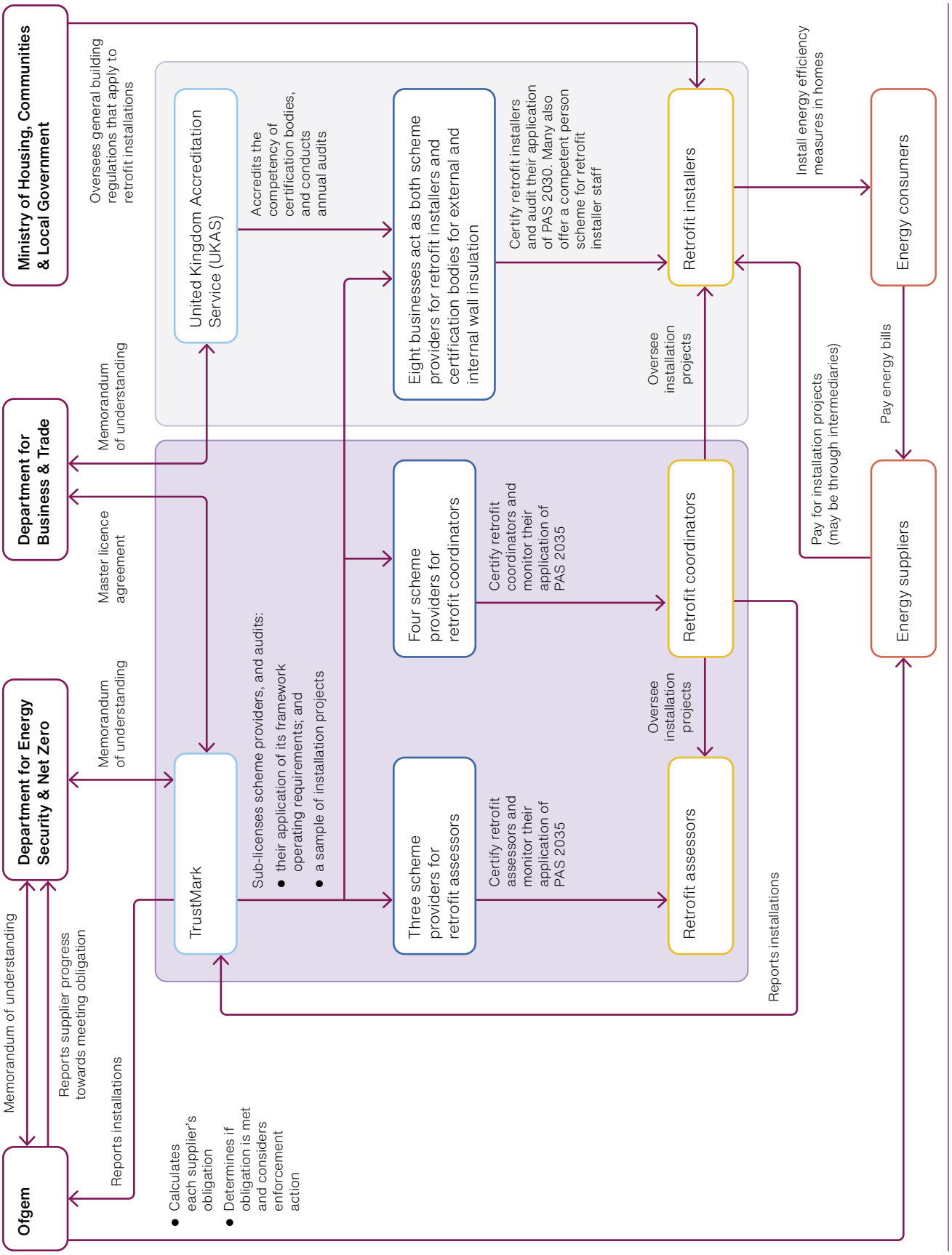

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Figure 4 *continued*
Current roles and responsibilities in the Energy Company Obligation (ECO)

- Central government organisations
- Not-for-profit companies that license or accredit other organisations
- Businesses acting as certification bodies (accredited by UKAS) and/or scheme providers (sub-licensed by TrustMark)
- Businesses registered by scheme providers with TrustMark to deliver retrofit projects (some businesses combine these roles)
- Energy suppliers and energy consumers
- Quality assurance for energy efficiency against the relevant standard: PAS 2035 *Retrofitting dwellings for improved energy efficiency*[4]
- Quality assurance for installations against the relevant standard: PAS 2030 *Installation of energy efficiency measures in homes*[7]
- → Interaction

Notes

1 This figure simplifies a complex system to draw out aspects particularly relevant to this report, and as a result some organisations, roles, interactions and processes are omitted.

2 There are currently two ECO schemes: ECO4 runs from April 2022 to March 2026, and the Great British Insulation Scheme (GBIS), with broader eligibility, runs from March 2023 to March 2026. DESNZ is consulting on extending ECO4 by six to nine months.

3 For the installation of external and internal wall insulation, the eight scheme providers for retrofit installers are NICEIC, The IAA, Simply Certification, British Assessment Bureau, The BBA, NAPIT, Blue Flame Certification, and (since March 2025) NetRet group. The three scheme providers for retrofit assessors are Elmhurst Energy, ECMK, and Quidos Accreditation. The four scheme providers for retrofit coordinators are Elmhurst Energy, ECMK, Quidos Accreditation, and Sterling Accreditation.

4 Publicly Available Specification (PAS) 2035:2023, *Retrofitting dwellings for improved energy efficiency*, British Standards Institution, revised September 2023. PAS 2035:2023 supersedes PAS 2035:2019, which was withdrawn on 30 March 2025.

5 PAS 2031:2019, *Certification of energy efficiency measure installation in existing buildings and insulation in residential park homes*, British Standards Institution.

6 International Organization for Standardization and the International Electrotechnical Commission, *Conformity assessment — Requirements for bodies certifying products, processes and services (ISO/IEC 17065:2012(en))*.

7 PAS 2030:2023, *Installation of energy efficiency measures in existing dwellings*, British Standards Institution, revised September 2023. PAS 2030:2023 supersedes PAS 2030:2019, which was withdrawn on 30 March 2025.

Source: National Audit Office analysis of Department for Energy Security & Net Zero (DESNZ), Department for Business & Trade, Ministry of Housing, Communities & Local Government, Ofgem, the United Kingdom Accreditation Service (UKAS) and TrustMark documents, and interviews with DESNZ, Ofgem, UKAS and TrustMark

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Risks and emerging issues

Consumer protection and quality assurance system

1.6 Since 2012, the United Kingdom Accreditation Service (UKAS), the national accreditation body, has accredited certification bodies that certify that installers are competent to meet the required quality standards set out in Publicly Available Specification (PAS) 2030, which was sponsored by DESNZ and its development was facilitated by the British Standards Institution.[8] In 2016, the government's *Each Home Counts* review had made recommendations to address long-standing quality issues in previous energy efficiency schemes.[9] It recommended a new "overarching standards framework document for the end-to-end delivery of retrofit of energy efficiency and renewable energy measures", and to "put in place a robust and joined-up industry-wide compliance and enforcement regime coordinated nationally". This included a new focus on whether the measures would achieve energy efficiencies for the 'whole home', as well as whether they were installed correctly.

1.7 In 2021 (before ECO4 was launched), DESNZ introduced a new consumer protection and quality assurance system, in which TrustMark became responsible for this new part of the quality regime focused on the 'whole home'. The installation of specific measures continues to be overseen by certification bodies accredited by UKAS (under the existing PAS 2030 standard) and their suitability within the whole home is overseen by scheme providers and TrustMark (under a new PAS 2035 standard).[10] TrustMark also took responsibility from Ofgem for collating data on the number of measures and projects and the results of audits of their quality.

8 Publicly Available Specification (PAS) 2030:2023, *Installation of energy efficiency measures in existing dwellings*, British Standards Institution, revised September 2023. PAS 2030:2023 supersedes PAS 2030:2019, which was withdrawn on 30 March 2025.

9 Department for Business, Energy & Industrial Strategy and Department for Communities & Local Government, *Each Home Counts*, December 2016.

10 PAS 2035:2023, *Retrofitting dwellings for improved energy efficiency*, British Standards Institution, revised September 2023. PAS 2035:2023 supersedes PAS 2035:2019, which was withdrawn on 30 March 2025.

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Risks of fraud and quality non-compliance

1.8 Despite the new consumer protection and quality assurance system, DESNZ recognised at the start of ECO4 that there continued to be risks of fraud and non-compliance with quality standards. In 2022, DESNZ identified the following.

- **Fraud risks to consumers:** In July 2022, DESNZ added a risk to its director general-chaired Net Zero Buildings portfolio risk register that scheme designs may not sufficiently protect consumers against fraud or gaming. The unmitigated risk rating was "very high" impact and "very likely" to occur.
- **Risks to quality, assessments and standards:** In November 2022, DESNZ identified a risk in its ECO4 and GBIS project risk register that TrustMark might not carry out compliance checks on time or to the correct standard. DESNZ determined the risk was high impact but "very unlikely" to materialise and was therefore a risk it could tolerate and not escalate to the portfolio level. In June 2023, it also identified that failures in the wider compliance and assurance processes could limit installation quality. It judged this risk was of medium impact and "possible" to materialise.

Emergence of issues

1.9 The government was generally unaware that these risks had materialised until 2024, when TrustMark informed DESNZ of suspected fraud and non-compliance with quality standards far higher than expected on ECO4 and GBIS.

- **Suspected fraud:** In April 2024, TrustMark informed DESNZ that through data analytics and on-site inspections, it had identified suspected fraud involving the falsification of building criteria to enable members of the supply chain to claim greater payment from the scheme.
- **Non-compliant installations:** In October 2024, TrustMark informed DESNZ that it had identified high levels of external wall insulation that were non-compliant with the relevant quality standards, based on its risk-based audit sample. In November, TrustMark reported similar issues with internal wall insulation to DESNZ. There had been media reports of individual cases of bad mould in retrofitted homes earlier in 2024, but the government was unaware that the problems were widespread until TrustMark shared its analysis.

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System reform

1.10 DESNZ is seeking to learn lessons from the issues that the schemes face, and is considering how to apply these to future policies and system reform. It aims to fix the system to achieve the following:

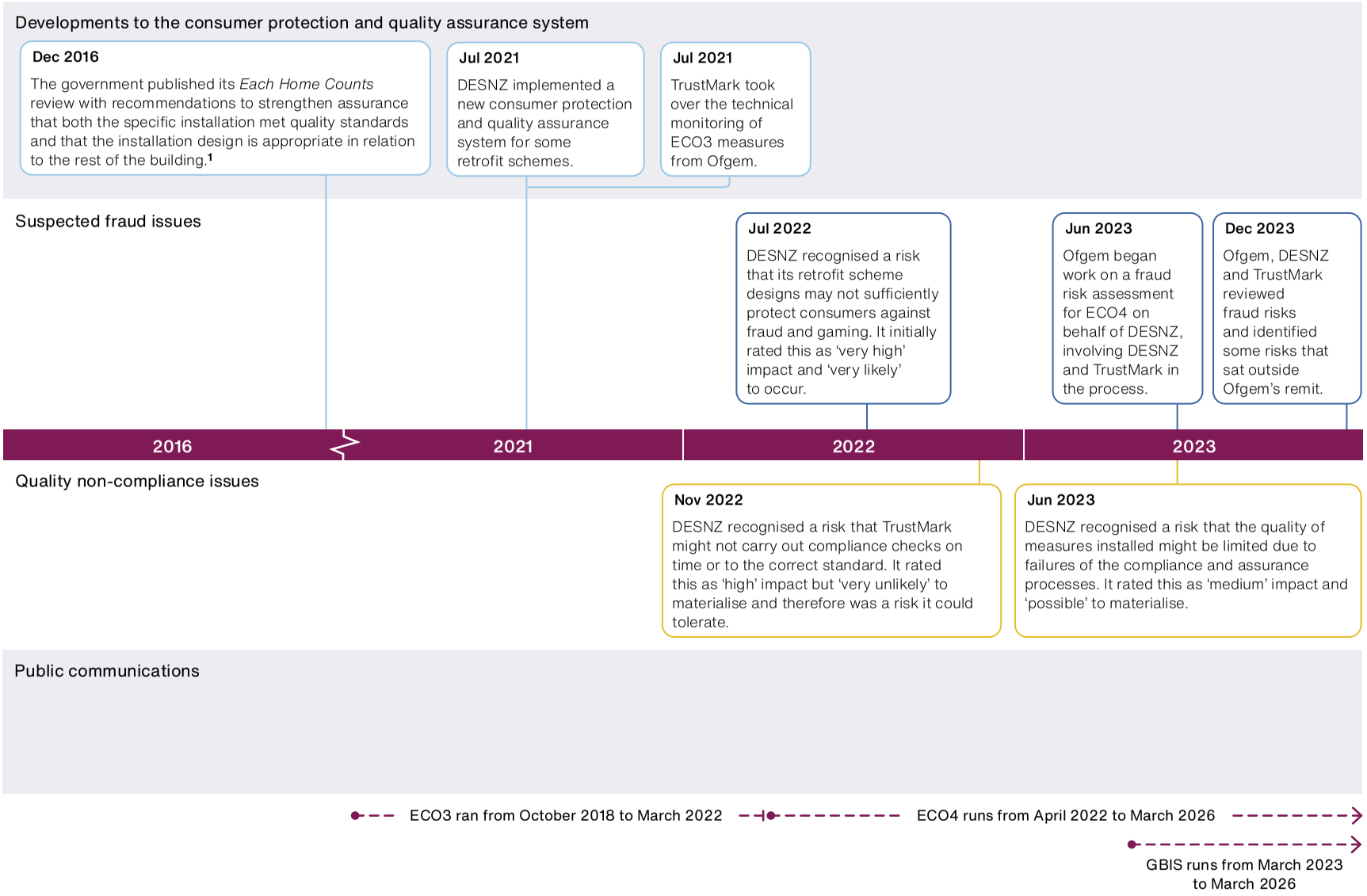
- **Ensure consumers get the intended benefits of schemes:** Undetected non-compliance and fraud in the schemes mean that fewer may benefit overall.
- **Ensure consumers do not end up paying more than they should:** Where work for which energy suppliers have already paid is later identified as not compliant with the requirements of the ECO scheme and is rejected, energy suppliers may need to commission additional work to meet their obligations. Suppliers may therefore lobby Ofgem to increase the price cap to cover their increased costs.
- **Maintain consumer confidence in energy efficiency schemes:** The government considers these schemes to be necessary for the carbon emissions reductions required for it to achieve its carbon budgets and net zero by 2050.

1.11 DESNZ intends to use its learning to inform the design of its future schemes, and its forthcoming Warm Homes Plan. The rest of this report sets out more details on what the government knows about the issues, and how it has responded, in relation to poor-quality installations (Parts Two and Three) and suspected fraud (Part Four). **Figure 5** on pages 26 to 28 presents a timeline of the events this report covers.

Figure 5

Timeline of key events and information related to quality non-compliance and suspected fraud under Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme (GBIS), 2016 to 2025

The government implemented a new consumer protection and quality assurance system in 2021, and TrustMark notified the Department for Energy Security & Net Zero (DESNZ) of suspected fraud and high levels of non-compliant installations in 2024



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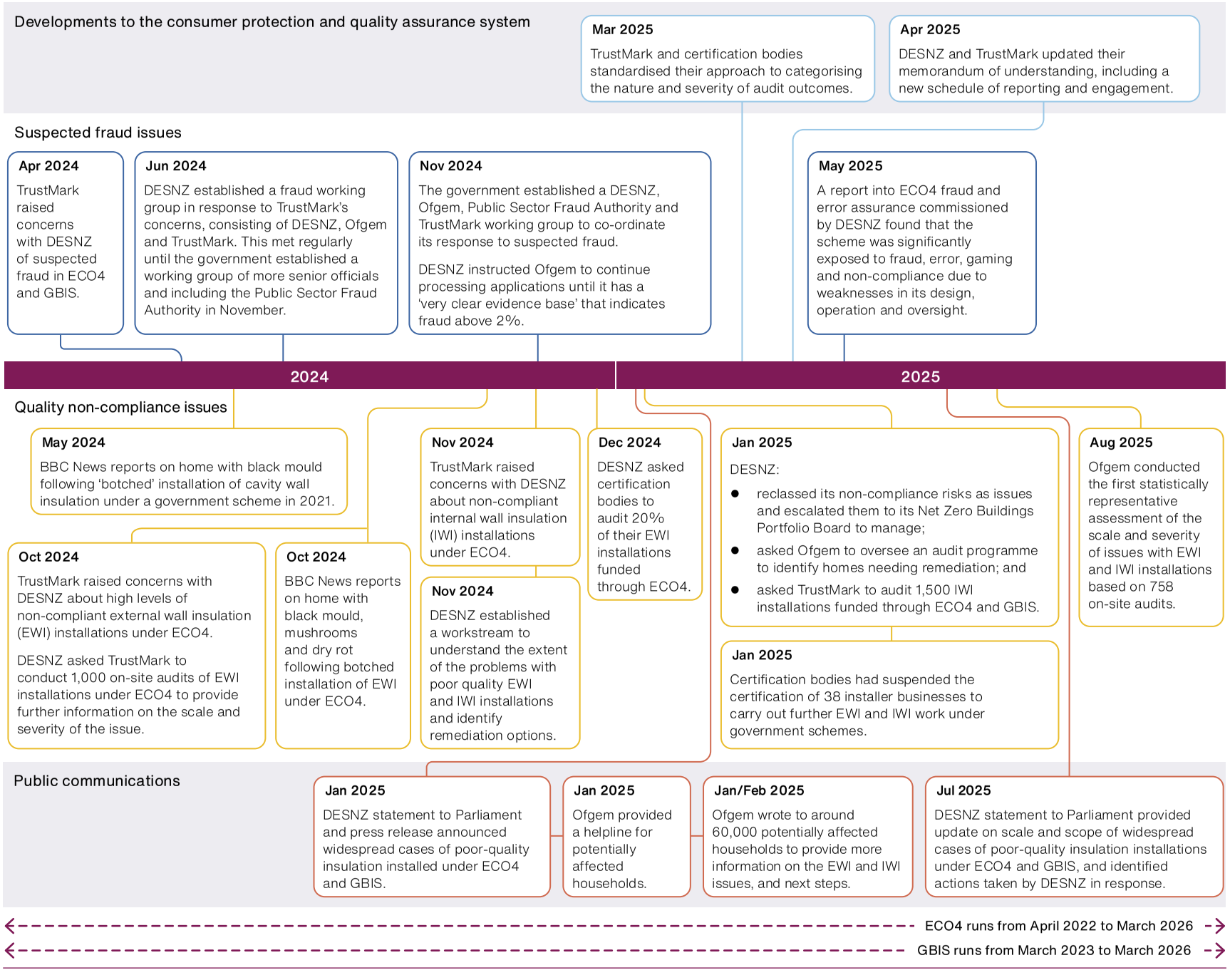

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Figure 5 *continued*

Timeline of key events and information related to quality non-compliance and suspected fraud under Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme (GBIS), 2016 to 2025

Notes

1 Department for Business, Energy & Industrial Strategy and the Department for Communities & Local Government, *Each Home Counts*, December 2016.

2 There are currently two ECO schemes: ECO4 runs from April 2022 to March 2026, and GBIS, with broader eligibility, runs from March 2023 to March 2026. DESNZ is consulting on extending ECO4 by six to nine months.

3 External and internal wall insulation (respectively EWI and IWI) are measures available under ECO4 and GBIS.

4 This figure only reflects some key events relevant to the categories (developments to the consumer protection and quality assurance system, suspected fraud issues, quality non-compliance issues, public communications) and therefore years without relevant events are omitted.

Source: National Audit Office analysis of Department for Energy Security & Net Zero and Ofgem documents

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Part Two

Poor-quality energy efficiency installations

2.1 This part sets out:

- the scale and severity of the issues with non-compliant installations;
- the government's immediate response; and
- the progress with remediating problems caused by non-compliance.

Scale and severity of the issues

External wall insulation

2.2 The Department for Energy Security & Net Zero (DESNZ) and Ofgem believe that almost all Energy Company Obligation (ECO) 4 and Great British Insulation Scheme (GBIS) external wall insulation installations have major issues requiring remediation (98%, or between 22,000 and 23,000 homes[11]). Their audits found (**Figure 6** on page 31):

- 92% had major issues requiring remediation because they will affect the insulation's performance, often creating the risk of water ingress and mould;
- 6% had major issues posing health and safety risks that require immediate correction, such as poor ventilation and electrical safety (these may also have other major issues);
- 1% had minor issues that may affect insulation performance over time; and
- 1% fully met the PAS 2035 standard.

11 Ranges in paragraphs 2.2 and 2.3 are given at the 95% confidence interval against homes retrofitted before 16 January 2025. Numbers are rounded.

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Internal wall insulation

2.3 DESNZ and Ofgem believe that around a third of ECO4 and GBIS internal wall insulation installations have major issues requiring remediation (29%, or between 9,000 and 13,000 homes). Their audits found:

- 27% had major issues requiring remediation because they will affect the insulation's performance, often creating the risk of condensation and mould;
- 2% had major issues posing health and safety risks that require immediate correction, such as poor ventilation and electrical safety (these may also have other major issues);
- 35% had minor issues that may affect insulation performance over time; and
- 35% fully met the PAS 2035 standard.

Audits of external and internal wall insulation

2.4 These estimates are based on site visits carried out from June to August 2025, to a statistically representative random sample of 758 homes, designed to represent the population of all external and internal wall insulation projects fitted before 16 January 2025. Ofgem's auditors contacted 3,798 homes to offer an audit. Of the 1,186 they were able to establish contact with, around 40% (428) refused entry. In these cases, the auditors picked another home to visit and tried to keep the overall sample as representative of the characteristics of the full population as possible. This may have affected the results, but DESNZ and Ofgem do not believe it overly distorts the overall findings.

2.5 These results, available in August 2025, are similar to the results of TrustMark's audit of 1,794 external wall insulation and 2,674 internal wall insulation homes, that aimed to target the riskier projects. The separate 4,703 completed audits of external wall insulation measures by certification bodies found only around half had major issues that will affect the insulation's performance. Ofgem told us it is working with the certification bodies and TrustMark to understand this difference. It may in part be due to the different scope of their audits, with the certification bodies focusing on individual measures rather than the performance of the whole property.

2.6 DESNZ believes that the non-compliance rate will be lower for installations from 16 January 2025 onwards due to changes it has made to ECO and the consumer protection and quality assurance system (paragraph 2.16). However, it does not have an estimate of the current non-compliance rates.

Figure 6

Non-compliant external and internal wall insulation installations under Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme (GBIS)

Non-compliances range from major issues that pose immediate risks to the health and safety of the household, to minor issues such as missing paperwork

Non-compliant audit outcome categories	Estimated % (approximate number) of properties with external wall insulation	Estimated % (approximate number) of properties with internal wall insulation	Examples of non-compliance	Potential impact for household
Major issues that pose immediate health and safety risks	6% (900 to 2,000 homes)	2% (300 to 1,400 homes)	Insufficient ventilation for the gas boiler	Risk of carbon monoxide poisoning due to boiler system waste gases
			Boiler flues too close to windows, doors or other openings	Risk of exhaust gas re-entering the property
			Live electricity cabling is left exposed	Risk of fire or electrocution
			Other structural and safety risks	Risk of harm from trips and falls
Major issues that will affect insulation performance	92% (20,700 to 21,900 homes)	27% (8,300 to 11,600 homes)	Poorly installed external insulation that permits water ingress, for example where roof eaves have not been effectively extended to fully cover the insulation	Risk of water ingress leading to damp in the home over time
			Inadequate ventilation, leading to increased levels of moisture and pollutants	Risk of condensation build-up and mould growth within the home, with potentially serious health impacts
Minor issues that may affect insulation performance over time	1% (Up to 600 homes)	35% (11,200 to 14,700 homes)	Weak points in external wall insulation around existing features of the home, such as gas supply pipes	Risk of a thermal bridge where heat is transferred into or out of the home, thus reducing the home's energy efficiency, and where condensation can build up leading to mould growth
			Drainage and gutters have not been reinstated	Risk of damage to wall over time due to leaking
Minor issues that will not materially affect insulation performance			Missing documentation	Little impact for household unless they require the information (for example, to sell the property)
			Installers leave waste behind at the home	Household members must deal with the waste themselves
Pass	1% (Up to 400 homes)	35% (11,200 to 14,700 homes)	–	–

Notes

1 Since March 2025, audits of energy efficiency installations under ECO use the standardised categories for non-compliances set out in this table.

2 The percentage estimates are based on audits of a statistically representative random sample of 378 external wall insulation properties and 380 internal wall insulation properties where the project was completed before 16 January 2025. The total number of external and internal wall insulation projects completed before 16 January 2025 was 23,269 and 36,384 respectively.

3 We have estimated the numbers of homes affected by applying these percentage estimates to the full population of homes with external and internal wall insulation completed before 16 January 2025. We present the 95% confidence intervals, rounded to the nearest 100.

Source: National Audit Office analysis of Department for Energy Security & Net Zero and Ofgem documents

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Impact on consumers

2.7 We have not collected evidence directly from affected households. However, Ofgem surveyed people who had contacted it for support. The survey questions focused on Ofgem's customer service, but some respondents used the survey to share their experience of the issues. We set out some comments that represent the issues raised in the survey in **Figure 7**. We have not verified their experience and cannot say how representative the comments are of the experience of all households.

2.8 It is not clear to what extent non-compliances will also affect the expected energy efficiency gains, and therefore whether the expected reductions in energy bills and carbon emissions will be achieved.

Figure 7

Examples of the impact on households of poor-quality external and internal wall insulation installations under Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme, as reported to Ofgem through its survey of people who used its helpline

Poorly installed measures can have negative impacts on the building, the health of the occupants and the performance of the measure, as well as wider impacts on the occupants' lives

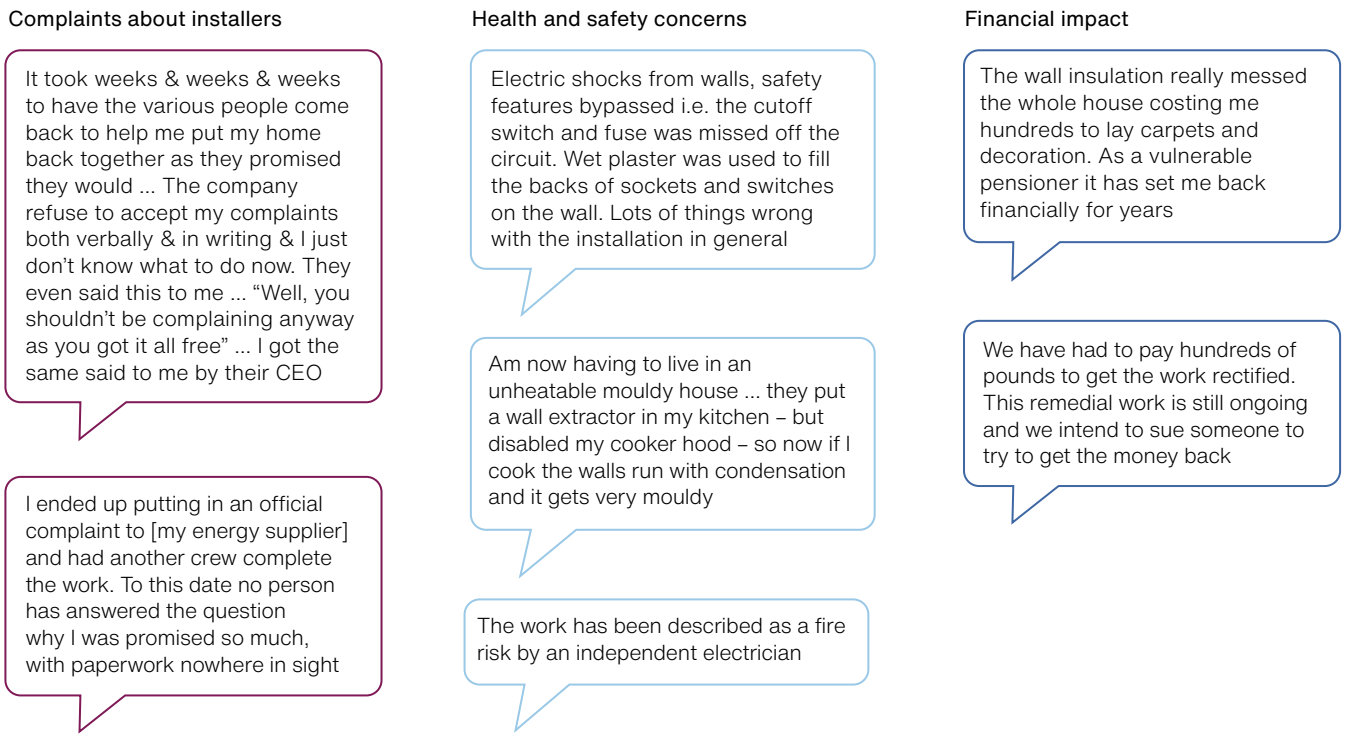

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Figure 7 *continued*

Examples of the impact on households of poor-quality external and internal wall insulation installations under Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme, as reported to Ofgem through its survey of people who used its helpline

Poor workmanship

The insulation on inside walls was left in a mess they were not plastered, they ripped my nice windowsills out and put cheap nasty plywood to replace them, the heat pump outside was not insulated properly and left on a gravel floor, we had leaks in the bathroom ceiling, which has not been repaired, they had not connected the fan resulting in the water coming through

The condition my home was left in meant I couldn't live in it for nearly a month. And when I did move back in, there was nowhere to sit or sleep

Damage to property

Broke my mirror on the wall, broke my patio table, also broke a lamp

[My installer] has damaged my house. 4 ceilings still not repaired, live wires showing, causing a cat 1 fail [immediate health and safety risk], (now repaired) holes in walls, not repaired burst in loft ruining a bedroom ceiling still not repaired, burst in bathroom where they blew my shower pump off its pipes, water damage caused my floor tiles to lift and now cannot open the bathroom door fully

Delays and incomplete work

The installation took over a year, with 2 reworks. We were left for the winter without central heating. We had to seek alternative accommodation for over 8 weeks which we have not been fully compensated for

Notes

1 These are examples of specific perceptions and experiences that we extracted from Ofgem's survey. Analysis by Ofgem identified the categories above as the most relevant themes. We have selected the quotes that were most representative of the issues faced by respondents according to each theme. However, the survey primarily focused on consumer experiences with the helpline, which we have not covered.

2 Where needed, we have corrected spellings to improve clarity and readability and removed personally identifiable information.

3 The Ofgem ECO helpline can be contacted at 0808 169 4447 or ECOhelp@ofgem.gov.uk.

Source: National Audit Office analysis of Ofgem's survey data

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Other retrofit schemes and measures

2.9 Other measures on ECO (such as heat pumps, solar panels and cavity wall insulation) and other domestic retrofit schemes can occasionally fail to meet quality standards. However, DESNZ believes they do not have the same serious and systemic failures as ECO4 and GBIS external and internal wall insulation. **Figure 8** on pages 36 to 37 and **Figure 9** on pages 38 to 39 set out the other measures and retrofit schemes, and what DESNZ knows about quality non-compliance. For example, for the Social Housing Decarbonisation Fund (wave 2.1) and Home Upgrade Grant (phase 2), DESNZ commissioned audits that found 12% of external wall insulation, 10% of internal wall insulation and 10% of all measures require remediation to address immediate health and safety risks or major issues that will affect the measure's performance. If extrapolated across all homes retrofitted under these schemes by March 2025, this implies that around 6,500 such homes require remediation. DESNZ has provided grant recipients (housing associations and local authorities) with guidance to identify, and where necessary remediate, properties affected. While DESNZ does not have comparable audit data for the other retrofit schemes, the available information shows that all have some element of non-compliance, but at much lower levels than external and internal wall insulation under ECO4 and GBIS.

The government's immediate response

2.10 TrustMark's initial concern in October 2024 was based on its sample of the riskier projects and did not give a clear indication of how many or which homes were affected. In November 2024, DESNZ established a workstream to better understand the extent of the problems with poor-quality installations of external and internal wall insulation and identify remediation options. This response work required TrustMark and Ofgem to work outside of their business-as-usual remits for ECO.

Identifying homes in need of remediation and better understanding the extent of issues

2.11 DESNZ immediately asked TrustMark to inspect a further 1,000 properties that TrustMark considered as having a higher risk of having non-compliant installations. In January 2025, DESNZ asked Ofgem to oversee a wider programme of audits by TrustMark, certification bodies and external consultancy services to both better understand the extent of the issue and identify homes needing remediation. In May 2025, Ofgem commissioned audits of a statistically representative random sample of properties with external and internal wall insulation, which provided the first proper estimates of the scale of the issues in August 2025 (paragraphs 2.2 to 2.4). DESNZ also commissioned audits of its other retrofit schemes that use the TrustMark consumer protection and quality assurance system.

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2.12 DESNZ has committed £1.5 million over 2024-25 and 2025-26 to externally commissioned audit contracts. This does not include the costs to TrustMark and the certification bodies of their additional audits (for which DESNZ has not provided additional funding), the cost of Ofgem and DESNZ officials or the opportunity costs of redirecting them from other activities. We were told that at least some certification bodies are charging installers for projects that require remediation to reassess the quality of the installation.

Suspending installers to limit further non-compliance

2.13 In December 2024, the government considered a range of options to prevent further non-compliant installations. DESNZ asked the certification bodies and scheme providers, via TrustMark, to proceed with a targeted suspension of installer businesses based on failure rate as the fastest and most targeted route to stopping non-compliant installations. By the end of January 2025, 38 installer businesses had their certificates and TrustMark registration suspended by their certification bodies and scheme providers respectively, preventing them from carrying out new external and internal wall insulation work under government schemes. We discuss the recertification process for installers in paragraph 2.26.

Communicating with affected households

2.14 In January 2025, the Minister for Energy Consumers made a statement in Parliament about ECO4 and GBIS issues, and Ofgem set up a helpline for potentially affected households.[12] Ofgem reports it had around 3,200 calls and 2,700 emails by August 2025. Ofgem identified around 190 high-priority cases through these calls and referred them to TrustMark for consideration as part of its audit programme.

2.15 By mid-February 2025, Ofgem had written to all 60,000 affected households to provide an overview of the external and internal wall insulation quality issues, an update on the audit status of their home, information on next steps and a unique reference number from TrustMark to track their audit and remediation status.

Immediate changes to the system of assurance

2.16 During 2025, DESNZ has taken steps to improve and formalise its oversight of TrustMark's activities. For example, it appointed a Senior Responsible Owner for resolving the non-compliance issues. In April 2025, DESNZ agreed a new Memorandum of Understanding with TrustMark, and that it would have an observer on TrustMark's board. It also agreed revisions to the PAS 2035 standard to require retrofit coordinators to conduct site visits. Ofgem began hosting a weekly roundtable with certification bodies. It also improved the reporting processes for all the audits being undertaken by TrustMark and the certification bodies and those directly commissioned by DESNZ and Ofgem.

12 The Ofgem ECO helpline can be contacted at 0808 169 4447 or ECOhelp@ofgem.gov.uk.

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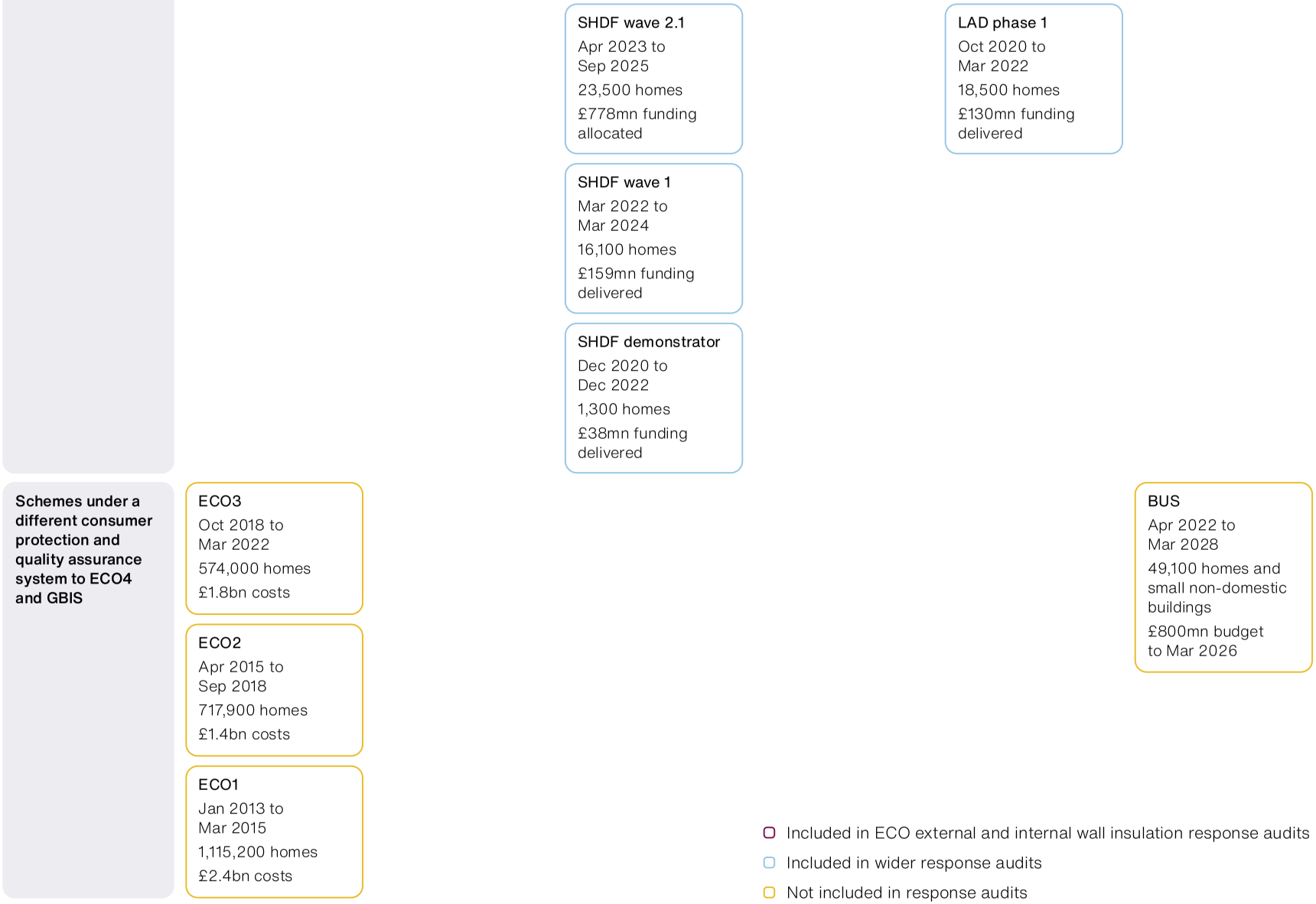
Figure 8

Department for Energy Security & Net Zero (DESNZ) response activity on other measures and other domestic energy efficiency and low-carbon heating retrofit schemes

DESNZ has a partial view on wider non-compliance issues

Domestic energy efficiency and low-carbon heating retrofit schemes

Scheme funding type	Supplier funded		Government funded			
Scheme	Energy Company Obligation (ECO)		Social Housing Decarbonisation Fund (SHDF)	Home Upgrade Grant (HUG)	Local Authority Delivery (LAD) scheme	Boiler Upgrade Scheme (BUS)
Scheme aims	Obligates medium and large energy suppliers to install energy efficiency measures in homes, aimed at low-income households in homes with poor energy efficiency ratings.	Obligates medium and large energy suppliers to install energy efficiency measures in homes, aimed at homes with poor energy efficiency ratings.	Provides funding to local authorities, registered providers of social housing and registered charities that own social housing to install energy efficiency upgrades and low-carbon heating measures to social housing in England.	Provides funding to local authorities for energy efficiency upgrades and low-carbon heating measures to low-income households in the worst-performing, off-gas-grid homes in England.	Provided funding to local authorities and Local Net Zero Hubs for energy efficiency upgrades and low-carbon heating to low-income households in the worst-performing homes in England.	Provides up-front capital grants to home and small business owners for replacing existing fossil fuel heating with low-carbon heating systems (heat pumps and biomass boilers).
Schemes under the same consumer protection and quality assurance system as ECO4 and the Great British Insulation Scheme (GBIS)	**ECO4** Apr 2022 to Mar 2026 243,900 homes £4.0bn costs to Mar 2025	**GBIS** Mar 2023 to Mar 2026 60,600 homes £226mn costs to Mar 2025	**SHDF wave 3** Apr 2025 to Sep 2028 Measures data not available £1.3bn funding allocated	**HUG phase 2** Sep 2023 to Mar 2025 10,500 homes £240mn funding delivered	**LAD phase 3** Jan 2022 to Sep 2023 19,500 homes £224mn funding delivered	
			SHDF wave 2.2 Apr 2024 to Mar 2026 1,800 homes £80mn funding allocated	**HUG phase 1** Jan 2022 to Sep 2023 4,000 homes £65mn funding delivered	**LAD phase 2** Apr 2021 to Sep 2022 20,500 homes £172mn funding delivered	



Notes

1 The number of homes retrofitted under each scheme is given as of March 2025 and rounded to the nearest 100. The number reported for Boiler Upgrade Scheme installations is the number of installations by March 2025 for which the grant redemption had been confirmed by May 2025 – more grant redemption applications were made during the reporting period and may be recognised in later statistical releases.

2 The costs of each scheme are to March 2025 for ECO4 and GBIS, the actual funding provided where the scheme has finished, and the allocated budget for all other schemes.

Source: National Audit Office analysis of Department for Energy Security & Net Zero and Ofgem documents

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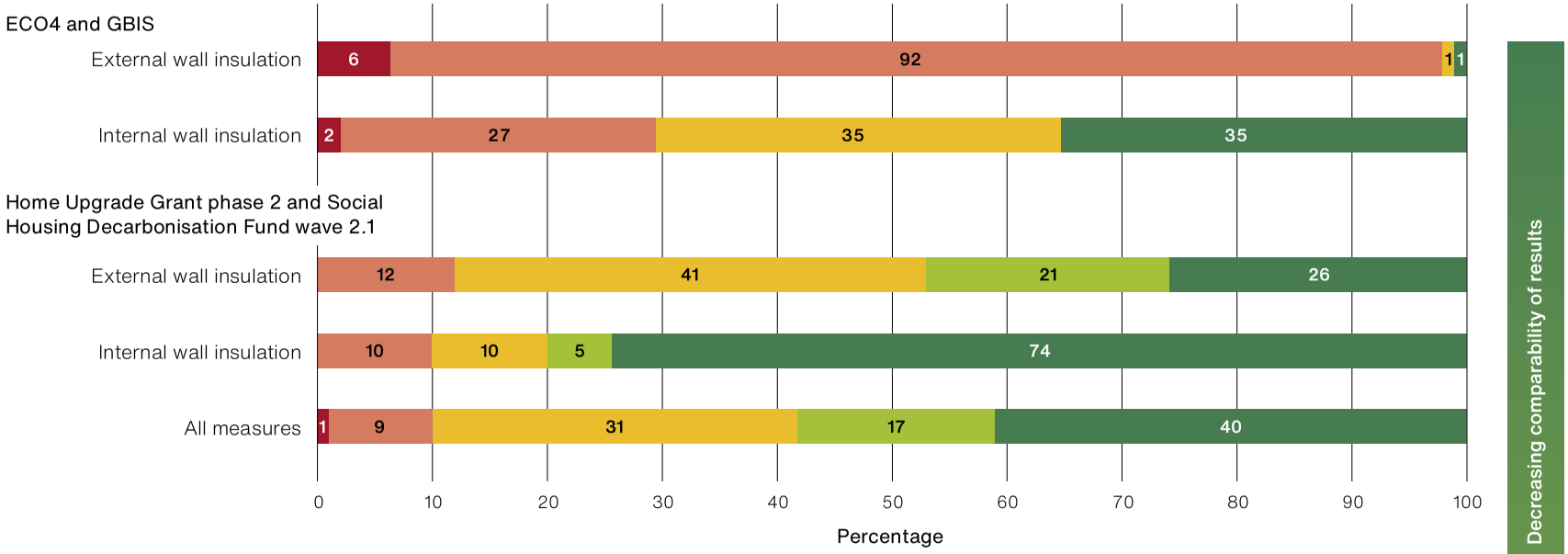
Figure 9

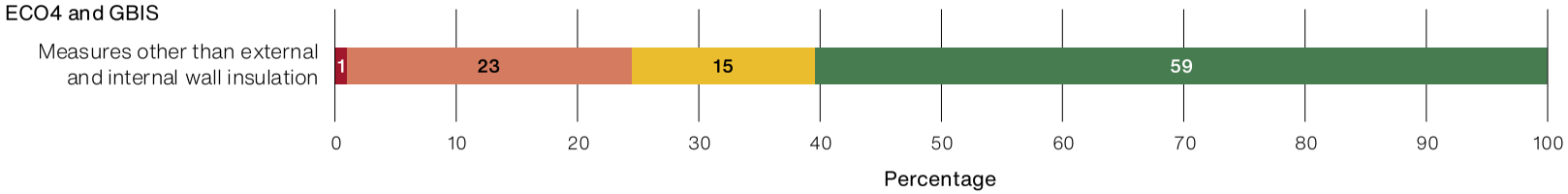
The Department for Energy Security & Net Zero's (DESNZ's) evidence on quality non-compliance on domestic retrofit schemes

Although the information DESNZ has for other domestic retrofit schemes is not always directly comparable to the Energy Company Obligation (ECO) 4 or the Great British Insulation Scheme (GBIS), it shows that these retrofit schemes have some non-compliance – but at much lower levels than external and internal wall insulation under ECO4 and GBIS

A) Non-compliance evidence based on randomly sampled audits – results can be extrapolated to estimates of the true scale

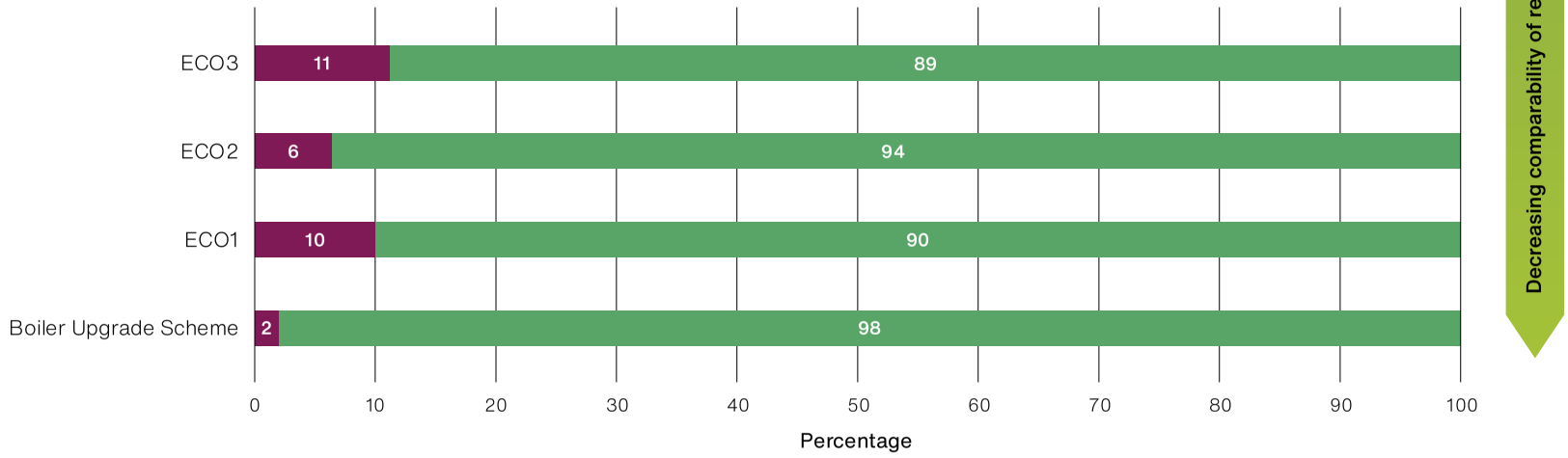


B) Non-compliance evidence with audit results categorised on a comparable basis to group A but not randomly sampled – results cannot be extrapolated



- Major non-compliance – immediate health and safety risk
- Major non-compliance – will affect measure performance
- Minor non-compliance – may affect measure performance over time
- Minor non-compliance – will not materially affect measure performance
- Passes relevant quality standards

C) Non-compliance evidence where the audit results are not categorised on the same basis as groups A and B – may refer to compliance issues that are unrelated to the quality of the installation and do not necessarily indicate remediation is necesssary



Notes

1 Percentages have been rounded to the nearest whole number. Some totals do not sum to 100% due to rounding or where data is missing because measures within the audit samples were not accessible to auditors or the audit outcome is not recorded. The bar lengths against the axis relate to the total of data with known audit outcomes, while the percentages shown in the data labels are those of all sampled data, necessary for extrapolation purposes. They do not always match exactly.

2 ECO4 and GBIS quality non-compliance information is based on installations before 16 January 2025. External and internal wall insulation estimates are from randomly selected audits of 378 and 380 homes (respectively). Information on non-compliance of other ECO4 and GBIS measures is based on the 910 additional measures installed alongside external and internal wall insulation within these samples, of which 212 had major issues that will affect the additional measure's performance and six had severe issues posing immediate health and safety risks. These may not provide an accurate estimate for non-compliance rates beyond this sample.

3 Social Housing Decarbonisation Fund wave 2.1 and Home Upgrade Grant phase 2 estimates are based on a random statistical sample of 188 external and internal wall insulation measures, plus a random statistical sample of a further 96 other measures and four specifically identified 'high-risk' installations. DESNZ expects to have results on earlier waves of the two schemes and the Local Authority Delivery scheme in November 2025.

4 Quality non-compliance rates from previous ECO schemes are not based on representative samples and therefore do not provide an accurate estimate for non-compliance across the schemes. The audits were also conducted to different standards and do not differentiate between the severity of different non-compliances. ECO1 fail rates were based on 100,731 measures audited and ECO2 fail rates were based on 126,746 measures audited. We do not know how many measures were audited for quality compliance on ECO3.

5 Ofgem reports undertaking 414 statistical audits of installations that received Boiler Upgrade Scheme grants in 2024-25. Based on these, Ofgem estimates that 2% of installations funded through the scheme in 2024-25 did not fully meet the grant conditions, including failures that are not related to the quality of the installations. Common forms of non-compliance include that the system installed could not meet the property's space and water needs, and that ineligible technology was installed.

Source: National Audit Office analysis of Department for Energy Security & Net Zero and Ofgem documents

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Remediating problems caused by non-compliance

Remediation process

2.17 DESNZ is encouraging households contacted for an audit of external or internal wall insulation installed under ECO4 and GBIS to allow an inspection of their home so that remediation can be organised. Where these audits identify non-compliances, DESNZ has asked that installers:

- remove immediate health and safety risks within 24 hours (for example, this could mean turning off the boiler if there is insufficient ventilation); and
- remediate major issues that will affect the insulation's performance, and minor non-compliances, within 12 weeks.

2.18 DESNZ tracks (through TrustMark) whether the issues identified have been remediated to the right standard. Installers must provide evidence of this to TrustMark, or to the certification body where the failure was identified by a certification body audit. DESNZ does not track how long remediation has taken; installers are not required to provide evidence on this information.

Remediation costs and liability to pay for them

2.19 DESNZ does not have an estimate of the likely total cost of remediating all affected homes. Advice from TrustMark to DESNZ suggests that most remediation to the quality required by PAS 2035 (excluding repairing any property damage) should cost from £250 to £6,000 per property for internal wall insulation and from £5,000 to £18,000 for external wall insulation, if it can be done before major damage occurs. TrustMark showed us how, in the most extreme case it had seen, damp, mould and rot as a result of badly fitted insulation had led to remediation costs of over £250,000 (including VAT). However, DESNZ believes that most of the issues will be simpler and quicker to resolve.

2.20 Installers are liable for the cost of remediation of any non-compliance with PAS 2030 or 2035. If the original installer has ceased to trade, remediation should be covered by the 25-year guarantee that TrustMark requires installers to have in place with TrustMark-approved third parties. TrustMark told us these guarantees should cover costs up to £20,000; however, DESNZ, Ofgem and TrustMark did not have the full details of the guarantees that are in place.

2.21 DESNZ has stated that no household with a faulty installation should have to pay to fix the issue and any damage it has caused, but has not clarified how this can be achieved in exceptional cases when the installer or guarantee does not cover the full costs. It is currently relying on consumers having recourse to the ombudsman or legal proceedings. Energy suppliers may also take legal proceedings on behalf of consumers or where an installer has failed to deliver what it has paid the installer to do.

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2.22 There are no specific requirements on energy suppliers for the quality of the retrofitting they pay for. The government asked them to rely on TrustMark as the quality scheme provider and placed no ECO4 or GBIS specific requirements on energy suppliers with regards to the quality of the projects they paid for, beyond checking with TrustMark they were installed by TrustMark-registered retrofit businesses. However, DESNZ told us that it expects energy suppliers should take responsibility for the work that their contractors undertake. It also told us that since they were alerted to the issues with non-compliance in external and internal wall insulation, some energy suppliers have introduced additional quality checks into their processes.

Remediation progress

2.23 DESNZ does not yet have a timetable or plan for when or how all homes affected will be inspected and problems remediated. TrustMark confirmed that by mid-September 2025, 2,934 homes with major issues requiring remediation had been fully remediated, bringing the work to the required standard (**Figure 10** overleaf).[13] Of the estimated 22,800 affected homes with external wall insulation, 1,901 (8%) have been remediated. Of the estimated 10,900 affected homes with internal wall insulation, 1,033 (10%) have been remediated.

2.24 There are an additional 2,836 and 506 homes with external and internal wall insulation respectively where audits have found major issues requiring remediation, but TrustMark has not yet had confirmation that the remediation work has been completed to the required standard. A small part of this is likely because there is a time lag on the review of remediation evidence by TrustMark and certification bodies, including a process that can involve requesting further evidence from installers.

2.25 Not all installers are fully complying with the remediation process. For example, TrustMark told us that of the 388 external and internal wall insulation installers registered with it at the end of August 2025 who had completed work under ECO4 and GBIS, 225 installers had between them over 1,500 projects with remediation work that had taken longer than 12 weeks. It also told us that 27 of the 194 registered retrofit businesses with outstanding work were no longer registered with it. It said there was a risk of some directors closing and restarting their businesses to avoid their liabilities, and asking for new registrations.

13 This includes installations that are non-compliant due to immediate health and safety risks or major issues that will affect the insulation's performance. It does not include installations that only had minor non-compliances.

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Figure 10

Progress with the remediation of homes with non-compliant external or internal wall insulation installed under the Energy Company Obligation (ECO), by mid-September 2025

2,934 homes with major issues have been remediated, which is 47% of all homes found with these issues by audits but less than 10% of all homes the government believes to be affected

Audit outcome[2]	Estimated number of homes with non-compliant installations[3]	Actual number of homes found through audits to have non-compliant installations[4,5]	Actual number of homes with immediate health and safety risks resolved (% of homes found to have non-compliant installations)[6]	Actual number of homes fully remediated (% of homes found to have non-compliant installations)[7]
External wall insulation				
Major issues that pose immediate health and safety risks	900 to 2,000	293	165 (56%)	92 (31%)
Major issues that will affect insulation performance	20,700 to 21,900	4,444	–	1,809 (41%)
Total external wall insulation with major issues	**22,400 to 23,100**	**4,737**	**–**	**1,901 (40%)**
Internal wall insulation				
Major issues that pose immediate health and safety risks	300 to 1,400	123	116 (94%)	97 (79%)
Major issues that will affect insulation performance	8,300 to 11,600	1,416	–	936 (66%)
Total internal wall insulation with major issues	**9,200 to 12,500**	**1,539**	**–**	**1,033 (67%)**
Total external and internal wall insulation with major issues	**31,900 to 35,300**	**6,276**	**281**	**2,934 (47%)**

Notes

1 The information in this figure is correct to 11 September 2025.

2 Homes are categorised according to the most severe non-compliance identified. For example, a home counted in the 'Major issues that pose immediate health and safety risks' row may also have major issues that will affect insulation performance, or minor issues.

3 The estimated number of homes with non-compliant installations is based on audits of a statistically representative random sample of 378 external wall insulation properties and 380 internal wall insulation properties where the project was completed before 16 January 2025. We have applied these results to the full population of homes with external and internal wall insulation completed before 16 January 2025. We present the 95% confidence intervals, rounded to the nearest 100. The ranges for individual outcome categories therefore cannot be added together to reach the total ranges.

4 The actual number of homes found to have non-compliant installations is based on individual homes identified through audits (including the statistically representative sample) conducted by TrustMark, certification bodies and external consultancy services as of 11 September 2025. This excludes homes identified through audits that were not yet complete or were still under review.

5 There may be some double counting between the external and internal wall insulation audits and remediation, where homes include both, but we believe this double counting to be very small.

6 Installers are asked to remediate immediate health and safety risks within 24 hours and all other issues within 12 weeks. The 'actual number of homes with immediate health and safety risks resolved' column tracks the remediation of these risks only. Other less severe non-compliances in the home may still be outstanding. Installers are not required to provide evidence on whether they remediate health and safety issues within 24 hours.

7 A home only counts as fully remediated once all non-compliances have been resolved and TrustMark and certification bodies have reviewed and confirmed evidence. There is a time lag on their review of remediation evidence, so it is likely that installers have remediated more homes than indicated in this figure.

8 In addition to the non-compliant homes set out in this table, 35% of homes retrofitted with internal wall insulation before 16 January 2025 are estimated to have minor non-compliances that may affect its performance over time, and 1% of external wall insulation. This table does not include the number of homes identified with minor non-compliances or those that have been remediated.

Source: National Audit Office analysis of Ofgem and TrustMark data

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Reinstating suspended installers

2.26 As of September 2025, the certification bodies have reinstated the certificates of 21 (55%) of the 38 suspended installer businesses, meaning they can once again install external and internal wall insulation on government schemes. TrustMark has confirmed that these installers have remediated all installations identified as non-compliant by TrustMark audits and have plans for ensuring all other installations meet quality standards and certification body requirements. The relevant certification body has also confirmed that the installer has remediated non-compliances identified through their audits and met their other requirements. A further nine (24%) have resolved all the non-compliances identified by TrustMark but the certification bodies have not yet confirmed the installers have remediated issues found in their audits (**Figure 11** overleaf).

2.27 This reinstatement process only covers remediation work identified by the audit of 1,109 external wall insulation installations, before it was understood how widespread the major failures against the quality standard were.

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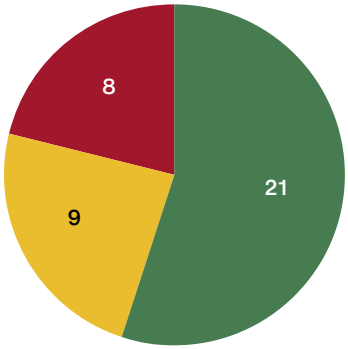
Figure 11

Number of suspended and reinstated external and internal wall insulation installer businesses, as at September 2025

Twenty-one of the 38 installer businesses originally suspended from government work have been reinstated by TrustMark and certification bodies



- Number of suspended businesses that have been fully reinstated by certification body (reinstated)
- Number of suspended businesses that have resolved all TrustMark identified non-compliances but are not yet reinstated by certification body (not reinstated)
- Number of suspended businesses that have not yet resolved all TrustMark identified non-compliances (not reinstated)

Notes

1 There are currently two Energy Company Obligation (ECO) schemes: ECO4 runs from April 2022 to March 2026, and the Great British Insulation Scheme (GBIS), with broader eligibility, runs from March 2023 to March 2026. DESNZ is consulting on extending ECO4 by six to nine months.

2 Certification bodies suspended 38 installer businesses by the end of January 2025, due to their high rates of non-compliant installations under ECO.

3 The reinstatement process covers remediation work identified by TrustMark's audit of 1,109 external wall insulation installations.

Source: National Audit Office analysis of Department for Energy Security & Net Zero data and documents

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Part Three

Root causes of widespread quality issues

3.1 This part sets out the likely root causes of:

- quality non-compliance; and
- the consumer protection and quality assurance system not identifying quality non-compliance sooner.

Likely causes of quality non-compliance

3.2 The Department for Energy Security & Net Zero (DESNZ), Ofgem, TrustMark and the United Kingdom Accreditation Service (UKAS) suggested potential reasons that retrofit businesses are failing to meet quality standards.

- **Poor workforce skills:** The workforce for government insulation schemes may be less well qualified than on other government energy efficiency and low-carbon heating retrofit schemes. For example, certified installers may subcontract to others who are not competent or registered with TrustMark.
- **Uncertainty over how the different standards apply to different jobs:** ECO and other government retrofit schemes must meet PAS 2030 and PAS 2035, whereas the same installations made outside of government schemes must only meet building regulations. This may mean that some fitters are operating to standards they do not understand, which might account for some of the less severe non-compliance.
- **Shoddy work produced as retrofit businesses 'cut corners':** Some poor-quality work may be intentional; for example, as retrofit businesses attempt to minimise costs or use designs that are not bespoke to the property. They may have little incentive to meet quality standards when there is limited oversight and where consumers lack the expertise to identify poor-quality work.

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Likely causes of the system not identifying quality non-compliance sooner

3.3 DESNZ has sought to understand what went wrong with the consumer protection and quality assurance system for ECO. It has commissioned reviews on various aspects of the system, which helped it to identify why the system was slow to identify the non-compliance.

Limited government oversight of the schemes

3.4 DESNZ designed both ECO and the new consumer protection and quality assurance system to operate at arm's length from the government. In seeking to give TrustMark a level of independence as the 'owner' of this system, DESNZ retained responsibility for the design and outcome of ECO but gave itself limited oversight and influence. In contrast to the government-funded retrofit schemes (such as the Social Housing Decarbonisation Fund), it has not established an agent to oversee ECO4 and the Great British Insulation Scheme (GBIS). It also did not have accurate and formal reporting on audit results, its own representative on TrustMark's board, or its own relationship with the scheme providers, certification bodies or installers. As a result, DESNZ could not act as an 'intelligent client'.

3.5 DESNZ also did not fully use the levers it did have to oversee the schemes. There were significant gaps within its internal governance framework. For example, there was no process for the supply chain team to secure senior oversight. DESNZ also identified that it lacked sufficient risk management: it was not managing the risks to installation quality or standards as part of its Net Zero Buildings portfolio (until January 2025), it had not defined its risk appetite, and it did not have a dashboard reporting against key delivery risks.

3.6 DESNZ also identified cultural issues in its oversight of ECO. It experienced churn in staff, limited senior leadership on supply chain and consumer protection issues, and focused on 'policy' over 'delivery'. DESNZ has also identified that it has insufficient technical building expertise to fully understand the retrofit landscape. The lack of oversight, the gaps in governance and the cultural issues meant senior leaders assumed the system was working.

3.7 Ofgem's administrative role is also more limited than in previous iterations of ECO, where it oversaw both the administration and the monitoring and compliance regime. This had included checking eligibility requirements were met and overseeing quality assurance of the installations and the accuracy of the savings reported by suppliers. Although Ofgem retains responsibility for determining that energy suppliers meet their obligations, the new system requires Ofgem to rely on energy suppliers to check eligibility requirements and on TrustMark and the scheme providers for quality assurance.

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The government created an overly complex system that ultimately failed

3.8 The consumer protection and quality assurance system, and ECO arrangements, create an overly complex system with many different actors, complicated relationships and fragmented roles, responsibilities and accountabilities among DESNZ, Ofgem, TrustMark, UKAS, certification bodies and scheme providers. Nobody we spoke to could give a comprehensive explanation of how the system was meant to work. There is also no central document that clearly sets out how the consumer protection and quality assurance system and its governance should operate across different organisations, processes and systems. The process mapping, which DESNZ delegated to TrustMark, was also not adequate to enable organisations to scenario plan.

3.9 There was also no meaningful cross-organisational governance and the information sharing among organisations was poor. Until 2025, there were insufficient forums or regular meetings that brought together the different organisations at a senior level. DESNZ's review also found that what management information was shared was poor and "too little, too late". The processes are also overly bureaucratic. For example, TrustMark receives over 30 forms for each project, making it hard for TrustMark to analyse its own data and know what to escalate.

TrustMark's funding arrangements limited its ability to scale up for ECO4

3.10 TrustMark took over technical monitoring of ECO from Ofgem in July 2021. To perform its role on the new ECO4 scheme, TrustMark needed to rapidly expand its team and develop its data analytics as the scheme accelerated, with ECO4 installations increasing from 88,505 in 2022-23 (the scheme's first year) to 308,889 in 2024-25 (an increase of 249% over two years). TrustMark needed to do the following.

- **Expand its team:** TrustMark told us it grew from four employees in 2018 to 74 in 2025, to deliver its quality assurance responsibilities across government retrofit schemes.
- **Develop its analytical systems:** TrustMark needed to develop new capabilities to analyse the information provided to it, generate insights and better target its audit programme. In 2019, TrustMark received a grant from DESNZ of £660,000 to develop its data warehouse.[14] The data warehouse was operational from 2020, but it did not receive funding to develop its analytical capabilities to interrogate that data. These were not all operational until the latter half of 2024.

14 This is now known as the 'retrofit portal', but for consistency we use its original name throughout this report.

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3.11 As a result, TrustMark had neither the information nor the analysis needed to identify non-compliance trends until late 2024, three years after it took responsibility for technical monitoring from Ofgem. An independent review commissioned by DESNZ found no evidence that DESNZ had modelled TrustMark's funding, people, systems or processes against the expected increase in ECO measures and the assurance requirement.

3.12 DESNZ's review found part of the problem to be the way TrustMark is financed, and questioned whether it is a sustainable business model. TrustMark is primarily funded by a £45 'lodgement fee' for each installation registered with it, which meant it had to develop its systems before it had revenue. As a non-profit distributing company, TrustMark's ability to raise finance is limited. It received over £3 million of loans from DESNZ to help it with the transition, of which it has repaid £2.3 million. It told us that the repayment profile of its loans and its lack of free cashflow had hindered its ability to invest in its people and systems.

TrustMark and the certification bodies collectively conducted insufficient audit and monitoring

3.13 DESNZ found that there had been a decline in on-site auditing of ECO during Covid-19, which did not recover after TrustMark took over technical monitoring of ECO3 measures from Ofgem in July 2021. There has been insufficient audit and monitoring of the quality of installations under ECO4 and GBIS – in part because the relevant standards did not specify the level of assurance over quality required, TrustMark's funding was not sufficient to cover the level of audit required, and installers were able to game the system.

The level of assurance required was not defined

3.14 There are two different types of on-site inspection under ECO4 and GBIS that should pick up problems with the quality of installations. These are the certification bodies' risk-based audits that check measures installed meet the requirements of PAS 2030, and TrustMark's audits that check projects lodged in its data warehouse meet the requirements of PAS 2035.

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3.15 These audits are meant to be on a risk basis designed to bring about the inspection and remediation of issues. But while it is clear what each audit was trying to achieve on each measure or project, it was not clear what level of assurance they were collectively meant to provide on the overall scheme based on a clear understanding of the risk and risk appetite – for instance, no-one asked if they were adequate to collectively show that most ECO measures were installed correctly.

- The rules set by TrustMark for itself do not stipulate how a 'risk-based' approach is to be done, or the level of assurance to be provided.
- The standard for the certification bodies (PAS 2031)[15] requires them to audit between 3% and 7% of external wall insulation and between 4% and 10% of internal wall insulation installed by each installer, depending on the outcome of previous audits with that installer. In December 2024, DESNZ asked the certification bodies to conduct a 20% sample of all ECO4 external wall insulation.

TrustMark found it difficult to fund enough trained staff

3.16 TrustMark told us that its funding did not allow it to employ enough trained staff who could audit against PAS 2035 (paragraph 3.12).

It was possible to game the system

3.17 UKAS told us that its accreditation process had confirmed certification bodies were conducting the expected number of audits set out in PAS 2031 against the information the certification bodies held. However, it said it had subsequently found that the certification bodies' records understated the number of installations compared to the installations lodged in TrustMark's data warehouse. This may be because the installers understated their number of installations to the certification bodies to reduce the level of audit.

3.18 It was also possible for installers to 'game' the audit process by either being certified by multiple certification bodies or transferring their certification between bodies. This meant they would have less history with each, and be more likely to have a level of audit at the lower end of the range stipulated in the standard – 3% to 4%, rather than 7% to 10%. It is also possible that it was commercially beneficial to installers to remediate the small proportion of projects subject to audit rather than meet the required PAS standards across all their projects.

3.19 In February 2025, TrustMark gave certification bodies access to its data in its data warehouse on the overall size of the market for those who signed data-sharing agreements. DESNZ and Ofgem also agreed with UKAS and the certification bodies that installers should no longer be able to be certified by more than one certification body at a time on a given measure. They told us they are working out how this will be controlled.

15 PAS 2031:2019, *Certification of energy efficiency measure installation in existing buildings and insulation in residential park homes*, British Standards Institution.

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There was a lack of standardised categorisation

3.20 TrustMark and the certification bodies did not have a consistent approach to categorising the nature and severity of audit outcomes in a way that explained the implications for the safety and quality of the installation. TrustMark and UKAS told us that this was due to the way the different standards they had inherited had been developed. This meant that it was difficult to interpret what the findings from the audits meant. DESNZ and Ofgem encouraged TrustMark and the certification bodies to agree, in March 2025, the standardised categorisation of the severity of audit failings used in Part Two of this report.

We discussed these lessons with the different organisations

3.21 We discussed these lessons with the different organisations and concluded that, ultimately, the system left no organisation taking full responsibility for the quality of the installations and the experience of consumers, with all pointing at shortcomings in the work of others. Once DESNZ realised the extent of the issues in autumn 2024, it brought together organisations to work in new ways – such as asking Ofgem to commission audits (paragraph 2.11) and asking TrustMark to work with the certification bodies to force installers to remediate substandard work.

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Part Four

Suspected fraud

4.1 This part sets out:

- what is known about the scale and nature of suspected fraud;
- how the government responded to suspected fraud; and
- the system's weaknesses and exposure to fraud.

What is known about the scale and nature of suspected fraud

4.2 In April 2024, TrustMark notified the Department for Energy Security & Net Zero (DESNZ) of suspected fraud whereby some retrofit businesses were overclaiming for work undertaken under the Energy Company Obligation (ECO). This led Ofgem to analyse the data and investigations are ongoing.

4.3 The overall level of fraud in ECO is unknown, but Ofgem believes it to be higher than in other energy efficiency and low-carbon heating retrofit schemes. In November 2024, Ofgem estimated that businesses could have potentially claimed between £56 million and £165 million from the energy suppliers under the Obligation. This was based on TrustMark's estimate that retrofit businesses had falsified claims for ECO4 installations in between 5,600 and 16,500 homes. This would be between 1.3% and 3.9% of the £4.2 billion scheme delivery costs to the end of March 2025. We were also told that there are separate suspicions that some installers are fraudulently claiming payment for installations in homes and for households that are not eligible, and that installations can be used as part of wider criminal activity. However, DESNZ and Ofgem do not have data of sufficient quality to accurately estimate the overall level of fraud in ECO. They also do not know the extent to which suspected frauds overlap with quality non-compliance.

4.4 In comparison, DESNZ and Ofgem report the estimated levels of fraud and error on two other retrofit schemes annually. They estimate the level of fraud and error in 2024-25 was 1% (£10 million) on the Renewable Heat Incentive and 2% (£5 million) on the Boiler Upgrade Scheme (see Figure 9).[16,17]

16 Department for Energy Security & Net Zero, *Annual Report and Accounts 2024-25*, HC 1274, September 2025.
17 Office of Gas and Electricity Markets (Ofgem), *Annual Report and Accounts 2024-25*, HC 1210, July 2025.

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How the government responded to suspected fraud

4.5 In November 2024, the government established a cross-government working group to coordinate its response to suspected fraud in ECO, involving DESNZ, Ofgem, TrustMark and the Public Sector Fraud Authority. In March 2025, the Public Sector Fraud Authority recommended that DESNZ take actions including investing in its counter-fraud capability, encouraging audit activities to look for potential fraud, reviewing its powers relating to potential fraud, and creating a fraud response plan for dealing with different fraud suspicions.

4.6 In November 2024, DESNZ asked Ofgem to continue processing installations in line with DESNZ's departmental counter-fraud strategy. This adopts an 'averse minimalist' risk appetite.[18] DESNZ recognises that the risk of fraud is ever present but considers it would be incapable of discharging essential functions if it adopted a more risk-averse position. DESNZ therefore instructed Ofgem to continue until it has a 'very clear evidence base' that indicates fraud above 2% of all the scheme's installations.

The system's weaknesses and exposure to fraud

4.7 In September 2024, DESNZ agreed funding for an external review to provide assurance over fraud and error in ECO4, which reported in May 2025. This review sought to understand the extent to which there are weaknesses in the scheme design and controls. It found weaknesses in its design, operation and oversight that expose ECO4 to fraud, error, gaming and non-compliance.

There are inherent risks in the scheme design and its operation

4.8 Commercial arrangements put in place by energy suppliers under ECO4 create incentives for retrofit assessors, coordinators and installers to overclaim. The price that retrofit businesses can charge energy suppliers for a project depends on the annual energy bill savings it generates. This means that installers are incentivised to:

- maximise the efficiency savings of a project, risking manipulation of energy efficiency assessment scores;
- identify properties and residents as eligible, risking manipulation of eligibility evidence; and
- minimise costs to maximise profits, risking installers cutting corners.

18 Government Finance Function, *Risk Appetite Guidance Note*, August 2021. Of the five risk appetite categories, 'averse' is the most cautious, and 'minimal' is the next most cautious.

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4.9 The separation of retrofit assessor and coordinator roles was designed to help counter the risks posed by the incentives on installers. The retrofit assessor's energy efficiency assessments would mitigate the risk of assessment score manipulation, and the retrofit coordinator's review of the plan and installation would mitigate the risk of poor quality or fraudulent installations. However, in practice, retrofit assessors and coordinators are often contracted and paid by the installer – and sometimes employed by the same business – so there is no real segregation of roles. Retrofit coordinators, for example, may be incentivised to approve non-compliant installations to maintain business with installers.

DESNZ did not carry out a fraud risk assessment when designing ECO4 or the Great British Insulation Scheme (GBIS), or agree responsibilities for managing the risk

4.10 DESNZ did not complete a fraud risk assessment at the outset of ECO4 or GBIS. While DESNZ carried out the preparatory work for ECO4 in 2021-22, before a fraud risk assessment became a requirement of *Managing Public Money* for any new major area of spend in March 2022,[19] it would still have been considered expected good practice at the time to complete a full risk assessment.[20]

4.11 The lack of a fraud risk assessment meant that some of these risks had no mitigations or owner. In June 2023, Ofgem began work on this assessment on behalf of DESNZ, involving DESNZ and TrustMark in the process. In December 2023, they identified some risks that sat outside Ofgem's remit. These include the following.

- Risks associated with local authorities and their role in determining eligibility outside the standard criteria, which Ofgem believed should be owned by DESNZ.
- Risks associated with TrustMark's quality assurance framework and registered businesses, including manipulation of assessment scores and eligibility evidence, which Ofgem believed would fit best with TrustMark. However, TrustMark was not established with a fraud management remit and does not have counter-fraud expertise.

As of September 2025, DESNZ had yet to agree the ownership and management of these risks with other organisations. DESNZ told us it intends to agree them in October 2025.

19 HM Treasury, *Managing Public Money*, June 2025.
20 See for example National Audit Office, *Good practice guidance: Fraud and error,* March 2021.

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Ofgem relies on others to detect and report fraud, but the other organisations have no requirement and little incentive to look for it, and poor information sharing hinders their ability to do so

4.12 A fraudulent installation will count toward the energy supplier's obligation unless Ofgem has sufficient evidence of fraud to reject the installation. Undetected fraud therefore means a reduction in the overall energy bill savings delivered by the scheme or ineligible households benefitting from the energy bill reductions. However, Ofgem told us its responsibilities in relation to fraud are limited to progressing counter-fraud investigations where allegations have been made and rejecting any fraudulent measures from its final determinations of whether energy suppliers have met their obligations. It relies on energy suppliers, TrustMark, certification bodies and scheme providers to alert it to any suspicions of fraud. While these bodies have responsibilities to report fraud that they have identified, they have no requirement and limited incentive to proactively identify fraud so that they can report it. For example:

- Under their licence agreements, suppliers are required to identify and mitigate likely risks of consumer harm but they are not specifically required to identify or report fraud under the ECO scheme. Once energy suppliers have paid the supply chain and lodged installations as counting towards their obligation, there is little financial incentive for them to seek to detect and report any fraud to Ofgem. DESNZ told us that it believed the energy suppliers would nonetheless feel obliged to report potential fraud in their supply chains.
- TrustMark, the certification bodies and scheme providers have key roles in checking that measures have been installed correctly, but no official remit for detecting or preventing fraud. While some certification bodies and scheme providers told us that they nonetheless felt obliged to report potential fraud, they also reported that they were hindered in doing so by a lack of data.
- In some circumstances the retrofit assessors, installers and coordinators have incentives to overstate their claims. While the audit regimes over quality should confirm that measures have been installed correctly and the intended energy efficiency savings achieved, these audits provide limited deterrent to bad actors and do not provide enough data to detect them (see also paragraphs 3.13 to 3.20).

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4.13 We found weaknesses in the capturing, sharing and reviewing of data and intelligence that could be used to detect and prevent fraud, including:

- Some of the information that would help detect and prevent fraud is contained in the supporting information held by TrustMark, but not captured as structured data in its database shared with other organisations such as Ofgem. This reduces the scope tor targeted, risk-based audits.
- There is scope for doing more with the data that already exist in the system. Despite having access to all data lodged with TrustMark, Ofgem told us that its ability to use this to prevent and detect fraud is limited by gaps in data, time lags on data checks, and the format in which information is available.
- Data sharing is limited. System stakeholders individually gather information through their quality assurance, monitoring and auditing activities, but they share limited data with each other. For example, one of the certification bodies told us it wanted to check for fraud but its ability to do so had been hindered by a lack of access to the full details of projects lodged with TrustMark. Certification bodies were given more access in February 2025.

4.14 Ofgem told us it had rejected 6,868 ECO installations to the end of June 2025. ECO4 and GBIS end in March 2026 and Ofgem intends to make its final determinations on which installations count towards energy suppliers' obligations (and whether energy suppliers met their obligations) six months later.[21]

21 DESNZ is consulting on whether to extend ECO4 by six to nine months.

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Appendix One

Previous National Audit Office findings on government retrofit schemes

1 We have previously reported on other government retrofit schemes where we have identified issues with scheme design and delivery that are similar to the issues we have identified on Energy Company Obligation (ECO) 4 and the Great British Insulation Scheme. We summarise some of the key findings from earlier reports in **Figure 12**.

Figure 12

Related findings from previous National Audit Office (NAO) reports on relevant government schemes, 2016 to 2024

We have previously identified similar issues with the design and delivery of other schemes

Issue	Previous NAO report	Finding	Web link
An overly complex system	*Green Homes Grant Voucher Scheme* (2021)	The Department for Energy Security & Net Zero (DESNZ) never properly reconciled the tensions between delivering a scheme that would deliver both a short-term economic boost and long-term decarbonisation outcomes. This resulted in an overly complex scheme that could not be delivered to a satisfactory level of performance within the short delivery timeframe.	https://www.nao.org.uk/reports/green-homes-grant/
Limited DESNZ oversight	*The government's support for biomass* (2024)	DESNZ has overall responsibility for the government's approach to supporting biomass, but Ofgem administers the relevant schemes, with arrangements for assuring compliance with sustainability criteria set out in legislation. DESNZ considers the assurance arrangements a proportionate approach that provide it with sufficient confidence in the credibility of the sustainability criteria for existing schemes. However, we found that DESNZ and Ofgem had not evaluated whether the arrangements were providing adequate assurance that firms were complying with sustainability requirements.	https://www.nao.org.uk/reports/the-governments-support-for-biomass/
	Low-carbon heating of homes and businesses and the Renewable Heat Incentive (2018)	DESNZ was responsible for ensuring the scheme's expenditure was in line with Parliament's intentions, including for any wastage due to non-compliance to be at an acceptably low level. However, DESNZ had insufficient oversight of Ofgem's approach to measuring non-compliance. It had not reviewed Ofgem's calculation and the underpinning assumptions, nor the quality assurance arrangements Ofgem had put in place to ensure accuracy.	https://www.nao.org.uk/reports/low-carbon-heating-of-homes-and-businesses-and-the-renewable-heat-incentive/

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Figure 12 *continued*
Related findings from previous National Audit Office (NAO) reports on relevant government schemes, 2016 to 2024

Issue	Previous NAO report	Finding	Web link
Insufficient information on non-compliance	*Low-carbon heating of homes and businesses and the Renewable Heat Incentive* (2018)	Ofgem did not know which types of non-compliance had the biggest financial impact, meaning it could not target its audits to installations with the greatest financial risk.	https://www.nao.org.uk/reports/low-carbon-heating-of-homes-and-businesses-and-the-renewable-heat-incentive/
Limited understanding of extent of non-compliance	*Low-carbon heating of homes and businesses and the Renewable Heat Incentive* (2018)	DESNZ could not reliably estimate the amount it had overpaid to non-compliant participants. It relied on Ofgem to estimate the impact of non-compliance, but we found weaknesses in Ofgem's approach, such as unrepresentative samples. DESNZ did not review Ofgem's estimate and so was unaware of its unreliability. DESNZ also did not assess the extent and potential financial impact of gaming.	
Missing key data to understand if intended outcomes are achieved	*Green Deal and Energy Company Obligation* (2016)	DESNZ did not collect all cost information required to track accurately whether it was achieving its aims of improving harder-to-treat homes more efficiently and getting households to bear more of the cost of measures. For example, it lacked data on households' contribution towards the measures installed and the cost of each measure to suppliers. It was also unable to assess the impact of the scheme on fuel poverty, in part because it did not have access to household income data.	https://www.nao.org.uk/reports/green-deal-and-energy-company-obligation/
Data systems not ready	*Green Homes Grant Voucher Scheme* (2021)	DESNZ launched the scheme before the digital voucher application system for the scheme was ready, instead relying on more manual processing of applications than was initially anticipated. This contributed to the development of a backlog. The system was not fully implemented by the time the scheme closed.	https://www.nao.org.uk/reports/green-homes-grant/
Lack of incentive to identify and report fraud or non-compliance	*Low-carbon heating of homes and businesses and the Renewable Heat Incentive* (2018)	The part of Ofgem that administered the scheme, with responsibilities including minimising rates of non-compliance, was also responsible for estimating rates of non-compliance. There was therefore a risk that its non-compliance estimates lacked independence and objectivity. However, Ofgem did not subject its estimates of the scale of non-compliance to independent review.	https://www.nao.org.uk/reports/low-carbon-heating-of-homes-and-businesses-and-the-renewable-heat-incentive/

Notes

1 DESNZ was established on 7 February 2023. It took on the energy policy responsibilities of the Department for Business, Energy & Industrial Strategy (BEIS), which was dissolved on that date. BEIS was created in July 2016, when the Department for Energy & Climate Change (DECC) merged with the Department for Business, Innovation & Skills. Mentions of DESNZ therefore refer to DECC prior to July 2016 and to BEIS between July 2016 and February 2023.

2 This table is based on a review of previously published NAO reports with findings relevant to this investigation on energy efficiency installations under ECO. Our review prioritised energy efficiency and low-carbon heating retrofit schemes, but we have also included findings from our report on biomass. This is not a comprehensive list of previous findings that may be relevant to this report.

Source: National Audit Office (NAO) analysis of published NAO reports

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Appendix Two

Our audit approach

Our scope

1 This report is about recent failures with the quality of installations of external and internal wall insulation and suspected fraud on the Energy Company Obligation (ECO). ECO is a government scheme intended to tackle fuel poverty and reduce carbon emissions in Great Britain.[22] It obligates energy suppliers to fund the installation in homes of energy efficiency measures such as insulation. Many organisations are involved in delivering ECO, with responsibilities for quality shared between the private sector and government. In our role of supporting Parliament to hold the government to account, our focus is on the Department for Energy Security & Net Zero (DESNZ) – which is responsible for the design of ECO, and Ofgem (the energy regulator) – which is responsible for ECO's administration in line with government policy. Our report also covers what DESNZ knows about whether wider quality issues exist on these or other government domestic retrofit schemes, including those under different quality arrangements.

2 Our report sets out:

- **an overview of ECO:** how the current schemes are intended to work, how the government became aware of issues, and DESNZ's plans for reform;
- **poor-quality energy efficiency installations:** the scale and severity of the non-compliance issues, the government's immediate response, and progress with remediating problems caused by non-compliance;
- **root causes of widespread quality issues:** the likely causes of quality non-compliance, and the system not identifying it sooner; and
- **suspected fraud:** what is known about the scale and nature of suspected fraud, how the government has responded, and the system's weaknesses and exposure to fraud.

22 The findings from this report cover England, Scotland and Wales, but not Northern Ireland.

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Our evidence base

3 We conducted our fieldwork from April to September 2025. So that we could provide a timely report, our investigation is based primarily on information held by DESNZ and Ofgem, which we audit, with support from TrustMark and the United Kingdom Accreditation Service (UKAS), which – as private sector companies – we do not audit. We invited the eight certification bodies for external and internal wall insulation to share any relevant information. We did not undertake our own inspection of the homes affected nor gather evidence directly from the affected households or retrofit businesses. We also do not comment on ongoing investigations on suspected fraud.

Document review

4 In April 2025, we asked DESNZ and Ofgem to provide us with key documents related to our audit questions. The high-level questions were:

a What are ECO4 and the Great British Insulation Scheme (GBIS), how are they intended to work, and what other schemes does the government think could be affected?

b What issues is the government aware of in ECO4 and GBIS, and how did it become aware?

c How is the government responding?

d What lessons has the government learnt and applied?

5 We subsequently made more specific requests based on the documents initially received and information shared by interview participants.

6 In total, we received around 200 documents and other supporting information from DESNZ and Ofgem. We also reviewed around 30 documents provided by third parties and around 90 publicly available documents. We reviewed the documents against our audit questions. Documents included legislation, ministerial and accounting officer briefings, memoranda of understanding, licence agreements, publicly available specifications (quality standards to which certification bodies and retrofit installers, assessors and coordinators must operate), scheme operating manuals and process maps, risk registers, finance and management information, reviews commissioned by the government from external consultants, and correspondence between DESNZ and the Public Sector Fraud Authority.

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Interviews

7 We interviewed DESNZ and Ofgem officials, as well as stakeholders such as TrustMark, UKAS and Citizens Advice.

Data analysis

8 We did not conduct any primary data collection for this report. We analysed the government's publicly available statistics on ECO4, GBIS and other government retrofit schemes. We also analysed the results of retrofit scheme audits commissioned by DESNZ and Ofgem.

Statistical audits of external and internal wall insulation under ECO4 and GBIS

9 In May 2025, Ofgem commissioned statistical audits to estimate the scale of quality non-compliance on external and internal wall insulation installed under ECO4 and GBIS. Previous audits completed by TrustMark and certification bodies had not been randomly sampled and some had risk-based sampling.

10 To calculate the estimated ranges of homes affected, we applied the results of these audits to the total number of homes with external and internal wall insulation completed under ECO4 and GBIS before 16 January 2025 (see next paragraph). We present the 95% confidence intervals, which means that it is 95% certain that the actual number of non-compliant external and internal wall insulation measures falls within that range (assuming the sample was not biased). The ranges for individual outcome categories therefore cannot be added together to reach the total ranges. The range estimates in Figures 6 and 10 are rounded to the nearest hundred. Range estimates in the Key Facts, Summary and paragraphs 2.2 and 2.3 are rounded to the nearest thousand.

11 Of the 378 audits of external wall insulation, 37 (10%) initially identified major issues that pose immediate health and safety risks. However, in 13 homes these risks were resolved by the provision of additional documentation that evidenced compliance, leaving 24 homes (6%) where remedial action was required to remove the immediate health and safety risks. We have not counted these 13 cases as having immediate health and safety risks, and instead counted them against their next most serious non-compliance. We took a similar approach with the 380 audits of internal wall insulation, which initially identified 17 homes (4%) with major issues that pose immediate health and safety risks. In eight homes these risks were resolved by the provision of additional documentation, leaving nine homes (2%) where remedial action was required to remove the immediate health and safety risks.

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12 There are some key limitations to using these audit results.

- The samples of 378 external wall insulation and 380 internal wall insulation projects were drawn from the pool of projects completed under ECO4 or GBIS before 16 January 2025 (23,269 and 36,834 projects respectively). During 2025, DESNZ has taken steps to improve the system of consumer protection and quality assurance for ECO (paragraph 2.16). It therefore believes the level of non-compliance will have reduced during 2025 and that the rates should not be extrapolated to projects completed from 16 January 2025 onwards. The estimates of scale reported in Part Two therefore extrapolate the audit results to the total number of measures installed before 16 January 2025, and do not account for the non-compliant projects completed from 16 January onwards. These estimates will likely underestimate the total number of non-compliant projects completed to date.
- The samples excluded measures that had previously been audited, some of which had been selected for audit based on their higher risk profile. This could have had the effect of artificially lowering the level of non-compliance estimated by the statistical audits, but the impact will be minimal, especially given the very high non-compliance rates identified.
- In total, the auditors contacted 3,798 randomly selected homes to offer an audit, using a randomly ordered list to replace homes where they were unable to establish contact or the households refused the audit. The auditors were able to establish contact with 1,186 households, of which around 40% (428) refused entry. This may have skewed the results. For example, households who suspect an issue with their insulation may be more likely to accept an audit than those who are content with the work completed. However, DESNZ and Ofgem do not believe this potential bias distorts the overall findings significantly.
- Information on non-compliance on other ECO4 and GBIS measures is based on the 910 additional measures installed alongside external and internal wall insulation within these samples, of which 212 had major issues that will affect the additional measure's performance and six had severe issues posing immediate health and safety risks. As they are not based on a random sample, these results may not provide an accurate estimate for non-compliance rates beyond this sample.

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Statistical audits of the Social Housing Decarbonisation Fund, Home Upgrade Grant and Local Authority Delivery scheme

13 In December 2024, DESNZ started assessing whether the Social Housing Decarbonisation Fund (SHDF), Home Upgrade Grant (HUG) and Local Authority Delivery (LAD) scheme could also be affected by high levels of non-compliance with quality standards. As part of this work, DESNZ commissioned comparable statistical audits of the three schemes.

14 At the time of publishing, results were available for SHDF wave 2.1 and HUG phase 2 only. We used these results to estimate the number of homes with affected measures requiring remediation installed up to the end of March 2025.

15 There are some key limitations to using these audit results.

- The audit results are based on a random statistical sample of 188 external and internal wall measures, plus a random statistical sample of a further 96 other measures and four specifically identified 'high-risk' installations. The sample was drawn from the 37,947 measures under the relevant scheme wave and phase that were completed by 14 December 2024. This excluded a small number of non-compliant measures that were already being investigated through a separate audit series. We have extrapolated these results to all measures installed under SHDF wave 2.1 and HUG phase 2 to the end of March 2025, which assumes no change in the rate of non-compliance since 14 December 2024. We made this assumption because there have not been any changes to the way these schemes have been managed.
- Where auditors were unable to access a randomly selected home, they selected a replacement home to mirror the original sample, in terms of grant recipient (for example, local authority), measure type and supplier, to maintain a similar risk profile. We do not have any information on the reasons why auditors could not access homes or what bias entry refusal may have introduced to the sample.

16 DESNZ expects to have results on LAD, earlier waves of SHDF, and HUG phase 1 in November 2025.

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