



National Audit Office

An Overview of the
**Department for Energy
Security & Net Zero**

for the new Parliament 2023-24

November 2024

OVERVIEW

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1 Introduction to the National Audit Office

Welcome to our Overview of the Department for Energy Security & Net Zero, part of our series of Overviews for the new Parliament, covering government departments and cross-cutting issues.

The National Audit Office (NAO) is the UK's independent public spending watchdog and is responsible for scrutinising public spending for Parliament. We audit the financial accounts of all departments, executive agencies, arm's-length bodies, some companies and charities, and other public bodies. We also examine and report on the value for money of how public money has been spent.

The NAO is independent of government and the civil service. The NAO's wide remit and unique access rights enables us to investigate whether taxpayers' money is being spent in line with Parliament's intention and to respond to concerns where value for money may be at risk.

We support all Members of Parliament to hold government to account and we use our insights to help those who manage and govern public bodies to improve public services. In 2023, the NAO's work led to a positive financial impact through reduced costs, improved service delivery, or other benefits to citizens, of £1.59 billion.

We are funded by, and accountable to, Parliament. As an Officer of the House of Commons, I am committed to ensuring that we support you and your staff in your work as a Member of Parliament, and your scrutiny of public spending and performance.

Our dedicated Parliamentary team can offer you support and put you in touch with our experts on subjects of interest to you and your constituents. If you would like more information about our work, or to arrange a briefing with me or one of my teams, please contact our Parliamentary Relations team at parliament@nao.org.uk.



Gareth Davies

COMPTROLLER & AUDITOR GENERAL
NATIONAL AUDIT OFFICE

Gareth Davies was appointed Comptroller & Auditor General (C&AG) in June 2019. He was appointed by the Monarch, following the approval of the House of Commons.

The C&AG has statutory authority to examine and to report directly to Parliament on whether government departments and other public sector bodies have spent taxpayers' money in the way Parliament intended. The C&AG and his staff are totally independent of government.

Gareth is a Fellow of the Chartered Institute of Public Finance and Accountancy and a Fellow of the Institute of Chartered Accountants in England and Wales. He is a non-executive Board member of the INTOSAI Development Initiative (IDI), which supports Supreme Audit Institutions (SAIs) in developing countries to sustainably enhance their performance and capacity.

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2 How the NAO can help you as a Member of Parliament

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How we support Parliament

We produce reports:

- on the annual accounts of government departments and their agencies;
- on the economy, efficiency and effectiveness with which government has spent public money; and
- to establish the facts where there are concerns about public spending issues.

We do not question government policy objectives. We look at how government has spent money delivering those policies and if that money has been used in the best way to achieve the intended outcome.

What we can offer

Through our website or our Parliamentary Relations team, MPs, peers and staff can:

- request a personal briefing on areas of our work that are of interest to them;
- sign up to receive embargoed copies of our reports on subjects of interest;
- make general queries about public spending, or raise concerns with us about value for money; and
- request advice on understanding and scrutinising departments' annual reports and accounts.

Resources available on our website

- **Reports:** Reviews of public spending and how well government is delivering.
- **Insights:** Learning and best practice to help people across government and the wider public sector.
- **Overviews:** Factual overviews of government departments, sectors and services.
- **Work in progress:** Our schedule of future publications.
- **Briefings:** Background information and factual analysis to support Select Committees.

Keep up to date with our work

- Sign up to our [latest report updates](#)
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How to get in touch

- Via our Parliamentary email inbox: parliament@nao.org.uk.



Auditing the accounts of all government departments and public organisations, helping assure money is being spent the way Parliament intended



Reporting to Parliament on the value for money of how public money has been spent and what has been achieved



Sending you embargoed copies of our reports before they are available to the public



Providing briefings to you or a member of your team on our work



Providing advice and training on examining government departments' annual reports and accounts



Giving evidence to Select Committees



Our fortnightly newsletter with our latest reports and new work



You can write to us with any queries or concerns about the misuse of public money or behaviour in public bodies we audit

3 About this Overview

This report has been produced to provide an introduction to the Department for Energy Security & Net Zero (DESNZ) and the NAO's examination of its spending and performance.

It is intended to support the House of Commons Energy Security and Net Zero Committee and Members across the House in their examination of DESNZ.

It summarises the key information and insights that can be gained from our examinations of DESNZ and related bodies and from DESNZ's annual report and accounts. DESNZ spent more than **£6.5 billion in 2023-24** in support of its aims to secure long-term energy supply, bring down bills and halve inflation.

The report includes:

- the role and remit of DESNZ, how it is structured and other bodies it works with;
- where DESNZ spends its money, and its self-assessed performance in 2023-24;
- DESNZ's budget, recent announcements, and financial management;
- DESNZ's major programmes; and
- more information about our work on DESNZ, and things to look out for.

This report updates our previous report, [Department for Energy Security & Net Zero: Departmental Overview 2022-23](#), published in February 2024.

Focus of NAO work on energy security and net zero

Since our previous overview, we have published reports on: [Decarbonising home heating](#), March 2024; [Carbon Capture, Usage and Storage programme](#), July 2024; [Achieving environmental improvement and responding to climate change](#), October 2024; [Decommissioning Sellafield: managing risks from the nuclear legacy](#), October 2024; and [Energy bills support: an update](#), November 2024.

How we have prepared this report

The information in this report draws on the findings and recommendations from our financial audit and value-for-money work, and from publicly available sources, including the annual report and accounts of DESNZ and its bodies.

We have cited these sources throughout the guide to enable readers to seek further information if required. Where analysis has been taken directly from our value-for-money or other reports, details of our

audit approach can be found in the Appendix of each report, including any evaluative criteria and the evidence base used.

Other analysis in the guide has been directly drawn from publicly available data and includes the relevant source as well as any appropriate notes to help the reader understand our analysis.

Other relevant publications

More information about our work on DESNZ, as well as information about our other recent and upcoming reports can be found on the [NAO website](#).



4 The Department for Energy Security & Net Zero's (DESNZ's) role and remit

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DESNZ was created in February 2023, following machinery of government changes which saw it take on the energy portfolio of the former Department for Business, Energy & Industrial Strategy (BEIS). It works with 20 organisations to achieve its objectives, of which by far the largest in terms of expenditure is the Nuclear Decommissioning Authority. DESNZ is responsible for:

- delivering security of energy supply;
- ensuring properly functioning energy markets;
- encouraging greater energy efficiency; and
- seizing the opportunities of net zero to lead the world in new green industries.

DESNZ's longer-term objectives include the following:

- Ensuring properly functioning energy markets.
- Coordinating net zero objectives across government.
- Bringing external delivery expertise to bear on its portfolio of major projects.

In its first annual report and accounts (for the year 2023-24), published in November 2024, DESNZ reported its performance against four priority outcomes:

- 1 Energy security:** Setting the UK on a path to greater energy independence.
- 2 Consumer security:** Bringing bills down, and keeping them affordable, and making wholesale electricity prices among the cheapest in Europe.
- 3 Climate security:** Supporting industry to move away from expensive and dirty fossil fuels.
- 4 Economic security:** Playing our part in reducing inflation and boosting growth, delivering high skilled jobs for the future.



William
stock.adobe.com

5 How DESNZ is structured

DESNZ is led by the Secretary of State for Energy Security and Net Zero, and the Permanent Secretary (Jeremy Pocklington CB).

The Second Permanent Secretary (Clive Maxwell CBE) and Chief Scientific Adviser (Professor Paul Monks) are also members of DESNZ's leadership team. DESNZ is organised into business units, each led by a director general.

Energy Markets and Supply	Energy Infrastructure	Net Zero Buildings and Industry	Net Zero, Nuclear and International
<p>Jonathan Mills CB Responsible for the following areas:</p> <ul style="list-style-type: none"> energy supply energy markets energy affordability strategy analysis 	<p>Ashley Ibbett Responsible for the following areas:</p> <ul style="list-style-type: none"> energy systems and networks renewable electricity carbon capture, usage and storage (CCUS) energy development energy security offshore oil and gas regulation 	<p>Ben Rimmington Responsible for the following areas:</p> <ul style="list-style-type: none"> heat and business energy home and local energy smart metering implementation 	<p>Lee McDonough Responsible for the following areas:</p> <ul style="list-style-type: none"> net zero strategy international net zero: climate finance, energy and trade science and innovation for climate and energy nuclear protection, development and decommissioning

Note

1 Business units are supported by corporate services functions.

Source: National Audit Office analysis of Department for Energy Security & Net Zero information on gov.uk



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DESNZ works with 20 arm's-length and other bodies to deliver its objectives.

These bodies have a wide range of policy and operational responsibilities.

Departmental group

Department for Energy Security & Net Zero (DESNZ)

DESNZ's non-departmental and other public bodies:

- Civil Nuclear Police Authority
- Coal Authority
- Committee on Fuel Poverty
- Committee on Radioactive Waste Management
- Nuclear Decommissioning Authority
- Oil and Gas Authority (operating as North Sea Transition Authority)
- Salix Finance Ltd
- UK Atomic Energy Authority
- Climage Change Committee
- British Nuclear Fuels Ltd
- Bulb Energy Ltd
- Electricity Settlements Company Ltd
- Enrichment Holdings Ltd
- Great British Nuclear Ltd
- Low Carbon Contracts Company Ltd
- Sizewell C Ltd
- Sizewell C (Holding) Ltd

Wider departmental group

One non-ministerial department:

- Office of Gas and Electricity Markets (Ofgem)

One public corporation:

- National Nuclear Laboratory Limited

One central government fund:

- Nuclear Liabilities Fund

Notes

- 1 The 'Departmental group' excludes some organisations that are separate legal entities, but their accountability flows from the organisations represented in the figure.
- 2 The 'Wider departmental group' includes other organisations not in the 'Departmental group' that work to achieve DESNZ's objectives.
- 3 In 2021 the government took Bulb Energy Ltd (Bulb) into a Special Administration Regime (SAR), after it emerged Bulb could no longer continue trading. In 2022 parts of Bulb were sold to another energy supplier, with the government continuing to oversee those elements of Bulb which remained within the SAR. As a result, Bulb Energy Ltd was classified as belonging to central government, and features as a DESNZ body in its 2023-24 Annual report and accounts.

Source: National Audit Office analysis of information from Department for Energy Security & Net Zero, [Annual report and accounts 2023-24](#); Comptroller and Auditor General, [Investigation into Bulb Energy](#), Session 2022-23, HC 1202, National Audit Office, March 2023

7 Where DESNZ spends its money

DESNZ spent **£6.5 billion in 2023-24** on a range of activities and arm's-length bodies.

Key areas of spending in 2023-24

£3 billion

Funding to the Nuclear Decommissioning Authority, for purposes that include tackling the nuclear legacy by funding the decommissioning carried out by operating companies. Also see our October 2024 report [Decommissioning Sellafield: managing risks from the nuclear legacy](#) (see sections 11-12).

£1.1 billion

Increasing DESNZ's shareholding in Sizewell C, a new large-scale nuclear power station under construction.

£845 million

Funding for 'Delivering affordable energy' including through DESNZ's energy prices support schemes. Also see our November 2024 report [Energy bills support: an update](#).

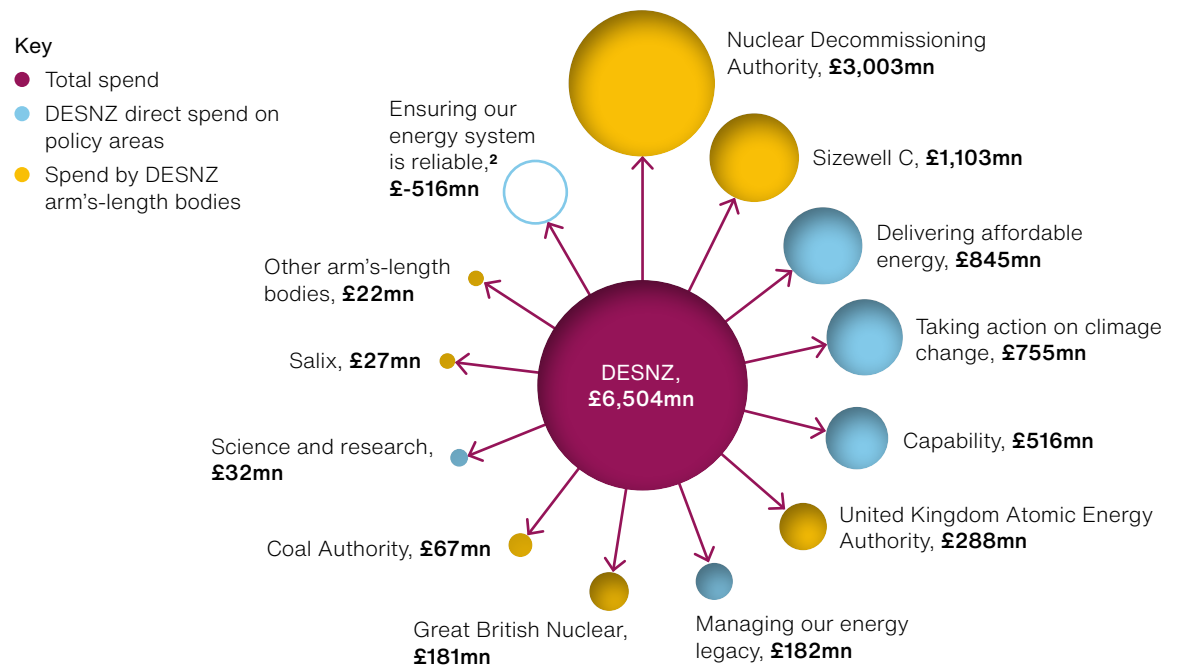
£755 million

Funding for 'Taking action on climate change'.

£181 million

Funding to help DESNZ set up [Great British Nuclear](#), a new organisation sponsored by DESNZ intended to support the UK's nuclear industry.

Department for Energy Security & Net Zero spending, 2023-24



Notes

- 1 This figure depicts how DESNZ's total spend in 2023-24 was divided among both DESNZ's arm's-length bodies and major categories of its own core spending.
- 2 DESNZ's expenditure total of £6.5 billion is net of the £516 million income it received through its activities under the heading 'Ensuring our energy system is reliable'. This figure is represented as a negative number to indicate this is income rather than expenditure.
- 3 Figures are based on total net combined resource and capital expenditure in DESNZ's Statement of Parliamentary Supply. This is spending to cover plans DESNZ is committed to, announced at spending reviews. The figure does not include 'Annually Managed Expenditure', which is spending that 'cannot reasonably be subject to firm three-year limits' and is typically more difficult to predict.
- 4 Figures do not sum precisely due to rounding.

Source: National Audit Office analysis of data from [Department for Energy Security & Net Zero Annual report and accounts 2023-24](#)

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DESNZ's self-assessment of performance

In its first annual report and accounts, published in November 2024, DESNZ reported its performance in 2023-24 against four priority outcomes.

Priority outcome	DESNZ's self-reported narrative of performance in 2023-24
Energy security	<ul style="list-style-type: none"> Launched the nuclear roadmap, including plans for new power stations as big as Hinkley Point C and Sizewell C and measures such as smarter regulation towards quadrupling UK nuclear power by 2050 up to 24GW. Launched a high-tech nuclear fuel programme with up to £300 million investment into UK production. Awarded 51 exploration licences through the latest oil and gas licensing round.
Consumer security	<ul style="list-style-type: none"> The Energy Act 2023 came into force, which DESNZ sees as essential to providing a cleaner, more secure and affordable energy system. Eliminated the pre-payment meter premium from July 2023, cutting energy bills for more than four million families by bringing their costs into line with those paid by comparable customers on direct debits.
Climate security	<ul style="list-style-type: none"> In the Spring Budget a budget of over £1 billion announced for Contracts for Difference Allocation Round (AR6), which includes an allocation of £800 million to offshore wind. Announced fusion research and development (R&D) plans for a suite of new R&D programmes to support the UK's fusion sector and strengthen international collaboration. Announced 12 green artificial intelligence (AI) initiatives sharing £1 million to decarbonise and boost generation of renewable energy.
Economic security	<ul style="list-style-type: none"> Announced around £120 million additional capital expenditure funding to the Green Industries Growth Accelerator, on top of the £960 million already allocated. At COP28 the UK joined the 'UAE Consensus' on the Global Stocktake, the first time that countries agreed to the transition away from fossil fuels in energy systems – delivering on promises to keep the 1.5°C temperature target within reach and building on the agreement to phase down coal secured under the UK's COP26 Presidency. Also announced £1.6 billion UK funding for new climate projects, as well as up to £60 million for loss and damage. Announced an alliance and programme of work between the UK, Canada, US, France and Japan with the aim of displacing Russia from the international nuclear energy market and undermining its grip on supply chains.

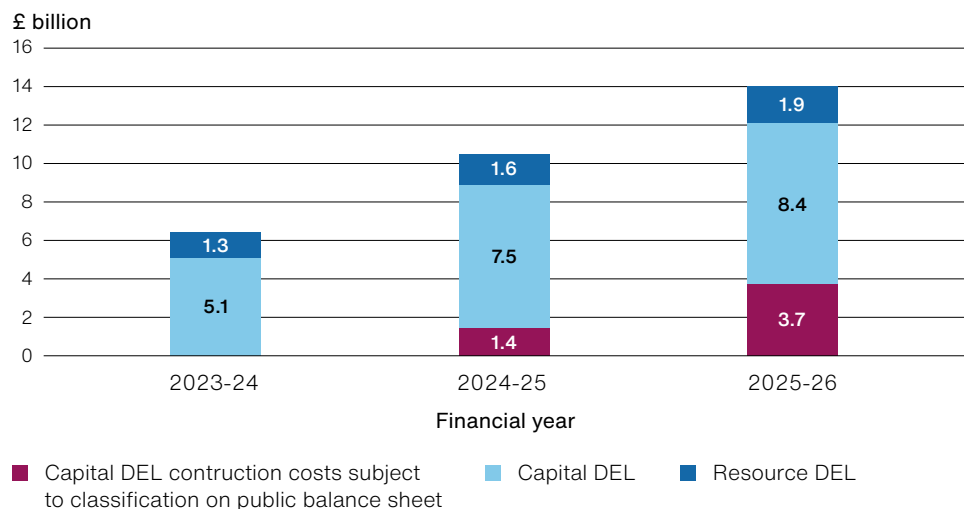
Source: National Audit Office analysis of information from [Department for Energy Security & Net Zero Annual report and accounts 2023-24](#)



9 DESNZ's budget and recent announcements

Department for Energy Security & Net Zero (DESNZ) departmental expenditure limit (DEL), 2023-24 to 2025-26

In October 2024 HM Treasury announced DESNZ spending plans for the three years to March 2026



Notes

- 1 Departmental Expenditure Limits (DEL) are budgetary restrictions set by HM Treasury (usually in Spending Reviews) and voted on by Parliament each year. They are split into capital and resource funding. Resource DEL covers current expenditure (including staff and procurement costs, subsidies and some grants). Capital DEL covers spending on new investments (including fixed assets) and financial transactions.
- 2 2023-24 figures are outturn spending totals. Figures for 2024-25 are baseline funding amounts, while figures for 2025-26 are latest funding plans.
- 3 Capital DEL construction costs reflect the costs of constructing Carbon Capture, Usage and Storage (CCUS) and Hydrogen projects that are expected to be on-balance sheet from a fiscal perspective and thus recognised within Capital DEL totals. This is subject to an Office for National Statistics decision on classification. Excluding these costs, total DEL funding over the three years to March 2026 runs to £25.8 billion; including them the total is £30.9 billion.

Source: National Audit Office analysis of HM Treasury, [Autumn Budget 2024](#), HC 295, October 2024

Significant government announcements since the July 2024 General Election include the following:

Clean power

Mission for clean power by 2030

The government is seeking to decarbonise the power sector by 2030, five years earlier than the previous government's target. See section 13 for more information.

Carbon Capture, Usage and Storage (CCUS) and Hydrogen funding

Nearly £22 billion for two clusters

The government has made this funding available to Teesside and Merseyside clusters, over the next 25 years, to promote CCUS and Hydrogen.

Great British Energy

Investing £8.3 billion in clean energy

The government intends this new publicly-owned company to work with industry and others to drive clean energy deployment (including by investing up to £8.3 billion over the Parliament), increase the UK's energy independence and create jobs. It will be headquartered in Aberdeen.

Warm Homes plan

£3.4 billion for reducing carbon emissions from households

The 2024 Autumn Budget provided over £1 billion in 2025-26, included within a guarantee of investment of an initial £3.4 billion towards heat decarbonisation and household energy efficiency between 2025-26 and 2027-28.

Investment in renewable electricity

Renewable electricity auction

The government increased the budget for Contracts for Difference Allocation Round Six (AR6) by £530 million to more than £1.5 billion. This resulted in 131 new projects which could provide nearly 10GW of renewable electricity.

Public Sector Decarbonisation Scheme

Decarbonising the public estate

The 2024 Autumn Budget announced funding of £1 billion over three years to fund hundreds of local energy schemes to help decarbonise the public estate through the Public Sector Decarbonisation Scheme.

10 Key audit matters from the DESNZ 2023-24 audit

Key audit matters are those which the Comptroller and Auditor General (C&AG) considered to be of most significance (including the areas of greater risk of material misstatements). They had the greatest effect on the overall audit strategy, allocation of resources and direction of effort.

DESNZ was formed in February 2023 and produced its first set of annual accounts in November 2024. Its annual report includes an extended auditor report: an overview of the audit approach explaining the procedures carried out in response to risks. This work identified material misstatements within the valuation of nuclear decommissioning costs which were material at the level of the DESNZ group overall.

Areas of greater risk	Observations following the audit
<p>First year preparing DESNZ accounts</p> <p>DESNZ prepared financial statements for the first time for the financial year 2023-24, after the government split the Department for Business, Energy & Industrial Strategy (BEIS) into three new departments in February 2023. DESNZ is smaller than BEIS was and therefore had to disclose more information on certain accounting issues, such as the value of the UK Atomic Energy Authority's property. These items were not large enough to require additional explanation in the BEIS accounts.</p>	<ul style="list-style-type: none"> ● DESNZ manually transferred information from legacy BEIS accounting systems, creating a risk of error. Controls over this process were ineffective and numerous corrections had to be made. However, no material misstatements or any evidence of management bias or manipulation were found. ● The new accounting disclosures were satisfactory and allowed users to understand the material risks and activities of the new department.
<p>Restating prior year figures</p> <p>Although it was created in February 2023, DESNZ had to present figures from 2022-23 and 2021-22 for its accounts as if it had always existed. To do this, it took part in a mapping exercise with the two other new departments created when BEIS was split up, to allocate the transactions and balances between them.</p>	<ul style="list-style-type: none"> ● No material misstatements or material estimation uncertainties were identified, apart from uncertainty over the value of cash and reserves at 31 March 2022.
<p>Valuing nuclear decommissioning provisions</p> <p>The Nuclear Decommissioning Authority (NDA) is part of the DESNZ group and recognises the costs of decommissioning its sites as a liability worth £105 billion. This value is based on an estimate of the costs of all future NDA decommissioning work, which will continue until 2137.</p>	<ul style="list-style-type: none"> ● A downward adjustment to the provision of £6.8 billion was required, as the value of expected efficiencies was not supported by sufficient evidence. ● The value of the liability is highly uncertain owing to the long timeframes involved, the complex nature of the decommissioning work, and limited data on the condition and contents of some nuclear sites.
<p>Contracts for Difference (CfDs)</p> <p>CfDs support low carbon electricity generation by providing electricity generators a guaranteed price. The current value of CfDs is based on estimates of electricity generation and wholesale electricity prices into the 2030s (and the 2060s for the Hinkley Point C nuclear power station). The net liability was £89.2 billion at 31 March 2024.</p>	<ul style="list-style-type: none"> ● The value of the CfD liability was based on reasonable estimates. ● However, the estimated values of the CfD liabilities are highly uncertain for a number of reasons, including the long timeframes involved. There is also a great deal of subjective judgment required in selecting which wholesale electricity price forecasts to use. Significant changes to the liability could occur if subsequent developments diverge from current assumptions.
<p>Defined benefit pension schemes</p> <p>Eight pension schemes in the NDA group had, between them, liabilities of £4.7 billion and net assets of £5.4 billion, giving a net surplus of £663 million. This depends on actuarial valuations of the liability and estimates of the value of the assets – some of which are hard to value.</p>	<ul style="list-style-type: none"> ● The controls over the calculations of the defined benefit pension liability were found to be effective, and the assumptions informing valuations reasonable. The valuation of pension scheme assets was found to be materially accurate. ● Two adjustments to the financial statements were identified: a £36.7 million understatement of pension liabilities, and a £186.2 million correction to recognise asset surpluses in past years. However, neither of these adjustments was material at the level of the DESNZ group.

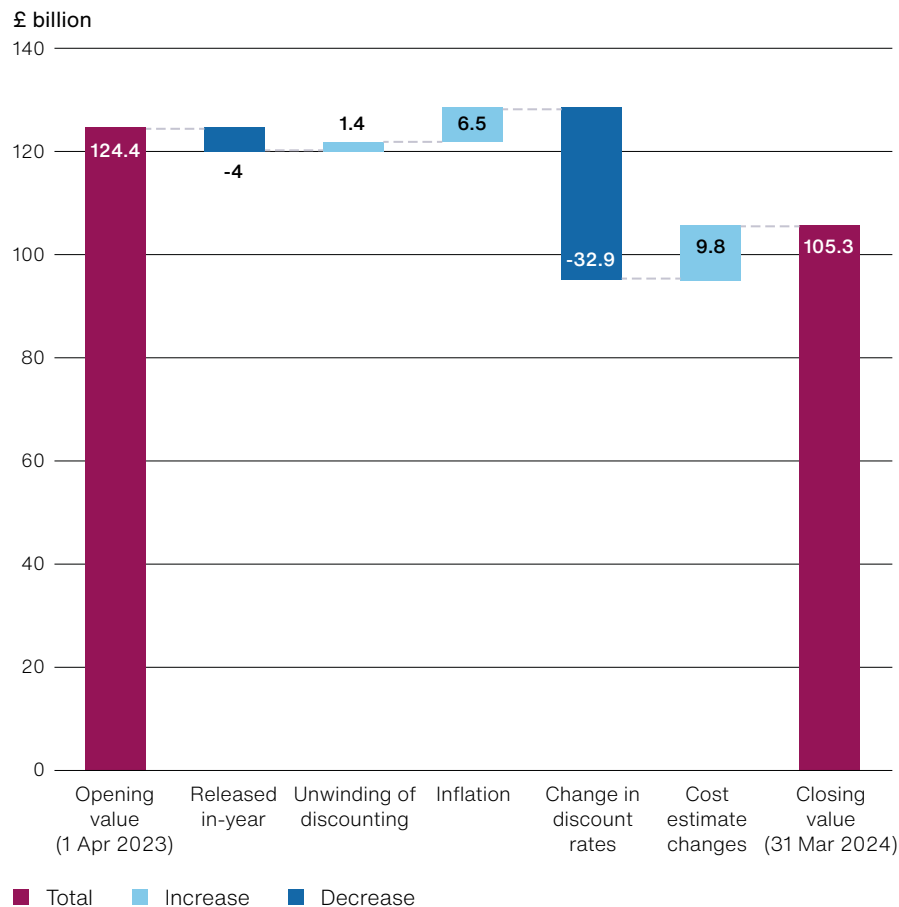
11 Nuclear decommissioning

The Nuclear Decommissioning Authority (NDA), the Department for Energy Security & Net Zero's (DESNZ's) largest arm's-length body, is responsible for clearing up the UK's legacy nuclear sites (which it expects will take until 2137).

The forecast cost of decommissioning nuclear sites is still highly uncertain (particularly the costs of decommissioning Sellafield and constructing a Geological Disposal Facility for long-term waste storage). The provision can also be significantly affected by changes in assumptions – particularly the discount rate (which is used to express future costs in terms of their 'present value').

The provision was valued at £105.3 billion as at 31 March 2024. The Magnox sites (including Dounreay) account for £0.8 billion of the £9.8 billion cost estimate change in 2023-24.

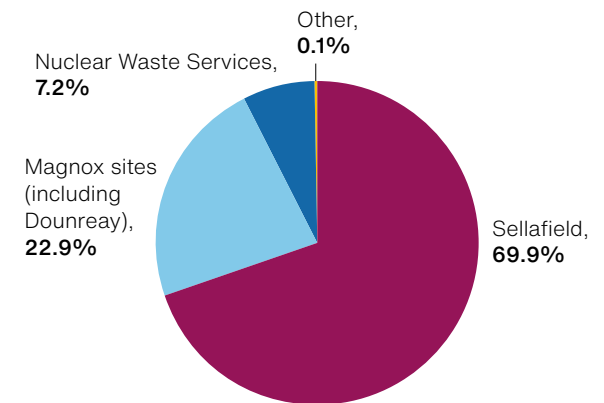
Movement in the value of the NDA nuclear provision 2023-24 (£ billion)



Source: National Audit Office analysis of data from [Nuclear Decommissioning Authority Annual Report and Accounts 2023-24](#)

Breakdown of the NDA nuclear provision as at 31 March 2024

The Sellafield site in Cumbria makes up nearly 70% of the forecast cost of decommissioning existing sites



Notes

- 1 The information shown reflects the discounted value of the provision as a proportion of the total provision, as at 31 March 2024.
- 2 Sellafield reprocesses waste, manages legacy sites and also stores spent fuel on an interim basis.
- 3 The Magnox sites are closed 'first generation' nuclear power stations, located in England, Scotland and Wales. Dounreay is a closed power station (which used different technology) which is being decommissioned by the same part of NDA (now known as Nuclear Restoration Services).
- 4 Nuclear Waste Services operates a repository for low-level waste and is developing a Geological Disposal Facility for permanent disposal of waste currently held at other sites. NDA's forecasts assume this will be available by 2050.
- 5 Total does not sum due to rounding.

Source: National Audit Office analysis of data from [Nuclear Decommissioning Authority Annual Report and Accounts 2023-24](#)

12 Managing the cost of nuclear liabilities

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Nuclear decommissioning poses challenges for effective financial management due to the high cost and long-term nature of the liabilities (which do not include the Advanced Gas-Cooled Reactor (AGR) stations, three of which have already closed).

Decommissioning further nuclear power stations

Seven of the UK's eight nuclear power stations are expected to close by 2028. These seven sites will be transferred to the Nuclear Decommissioning Authority (NDA) after they have been defueled, with spent fuel transferred to Sellafield. The Nuclear Liabilities Fund (the Fund), which is underwritten by the government, was set up to meet the costs of defueling and decommissioning.

Our 2022 report [The decommissioning of the AGR nuclear power stations](#) found the following:

- The current best estimate is that the eight existing sites will cost £23.5 billion to defuel and decommission (these costs are not currently included in the NDA's nuclear provision, which is shown in section 11).
- The forecast cost (in real terms) had risen by 87% between 2004-05 and 2020-21 and exceeded the value of the Fund (which was £14.8 billion – even after the government made a £5.1 billion capital contribution in 2020).
- Costs could rise further, particularly if defueling takes longer than planned. Since the return on the Fund's investments had fallen well short of its target in each of the seven years between 2014-15 and 2020-21, there is a risk that further taxpayer contributions may be required.

The NDA also recognises it faces financial management challenges

The NDA's board warned in September 2023 that there was an increased risk that it would face funding shortfalls due to pressures on government spending. In October 2024 the board warned that this risk score remains very high. It expects its revenue will fall as AGRs close (it currently receives commercial revenues from the owners of the AGR fleet, to deal with spent fuel). These pressures could reduce long term value for money if funding constraints prevent it from decommissioning sites in the optimal way.

The board also highlighted the increased likelihood and high risk of supply chain failure (due, for example, to the sustained impact of inflation), and the high risk that issues relating to the Geological Disposal Facility programme would mean the NDA would be unable to manage radioactive waste cost-effectively.

Decommissioning Sellafield

In October 2024 we published our latest report on [Decommissioning Sellafield: managing risks from the nuclear legacy](#). Sellafield is the UK's most complex and challenging nuclear site: there are seven former nuclear reactors on the site, as well as 59% of the UK's radioactive waste. Sellafield accounts for 70% of the NDA's nuclear provision for future decommissioning costs and spent £2.7 billion in 2023-24.

Section 12:

Managing the cost of nuclear liabilities *continued*

Our previous report in 2018 found that Sellafield's largest projects had seen significant cost increases. In our 2024 report, we found that while some projects which were nearly finished were completed slightly cheaper than estimated in 2018, four projects which were at least two years away from completion were predicting cost increases of £1.15 billion between them (and delays of between 58 and 129 months). There are some recent signs of improvement – both in Sellafield's approach to project delivery and in the performance of projects. However, a major project to renovate a laboratory saw significant cost increases and delays (which would prevent Sellafield completing another major project) before it was paused. Sellafield is developing a new approach – but this would mean relying on a 70-year old building for even longer.

The most hazardous buildings at Sellafield include three ageing waste storage facilities, which Sellafield believes represent an 'intolerable' risk (one of these is currently leaking 2,100 litres of contaminated water each day). The key milestones for removing most of the waste from these facilities (to reduce the risk) have slipped by six to 13 years since we last reported. Sellafield has missed most of its targets for retrieving waste since the COVID-19 pandemic – but plans to significantly increase the pace of retrievals (which would allow it to substantially empty the last facility by 2059). There is therefore a risk that waste treatment facilities could reach the end of their lives before all waste has been retrieved – potentially causing delays and large cost increases.

As a number of buildings are beyond their design life, they are increasingly hard to maintain – however Sellafield is carrying out 12% fewer maintenance activities than it did in 2018-19, resulting in an increasing backlog. Sellafield's safety assurance team expressed serious concerns in 2022 about the workforce's capability to operate facilities safely and maintain assets. Sellafield has responded by seeking to increase recruitment. It is experiencing higher staff turnover than it did before the COVID-19 pandemic, and is likely to face increasing competition as the nuclear sector grows.



13 Coordinating the government's clean energy mission

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In July 2024 DESNZ announced a Mission Control centre to deliver its mission to “achieve clean power by 2030”.

The new government was elected in July 2024 with a manifesto commitment to “make Britain a clean energy superpower to cut bills, create jobs and deliver security with cheaper, zero-carbon electricity by 2030, accelerating to net zero”.

In July 2024 DESNZ announced the creation of a Mission Control for clean power, to be led by Chris Stark, formerly chief executive of the Climate Change Committee. DESNZ intends it to focus on the transition from fossil fuel to clean energy, resulting in energy independence and cheaper bills. It will bring together industry and government, including energy companies and organisations such as Ofgem, the National Grid and the Electricity System Operator. The Mission Control will be the first of its kind in government, and will focus on:

- setting and tracking the overall approach to delivering 2030 across the energy system;
- real-time monitoring of progress on UK infrastructure projects critical to 2030;
- acting as an innovation centre by encouraging discussion among experts; and
- serving as a convenor for the mission control approach across government and with industry.

In March 2023 we reported that decarbonising the power sector needed a joined-up approach.

Decarbonising the power sector

March 2023

The government estimates £280 billion to £400 billion of public and private sector investment in new generating capacity will be needed by 2037. Our report found that DESNZ does not have a delivery plan linking together different aspects of power sector decarbonisation. It needs a joined-up approach with a critical path to ensure it achieves its ambitions without incurring unnecessary costs for taxpayers and consumers.

DESNZ had planned to prepare a first draft of its delivery plan with key decision points, risks, mitigations and interdependencies by October 2022. But its work in response to the cost of energy crisis required it to scale back its work on coordinating long-term power sector decarbonisation. At the time of our report (March 2023), it still had more work to do to develop a delivery plan. In December 2023, DESNZ wrote to the Public Accounts Committee saying it was aiming to publish the plan by Spring 2024.

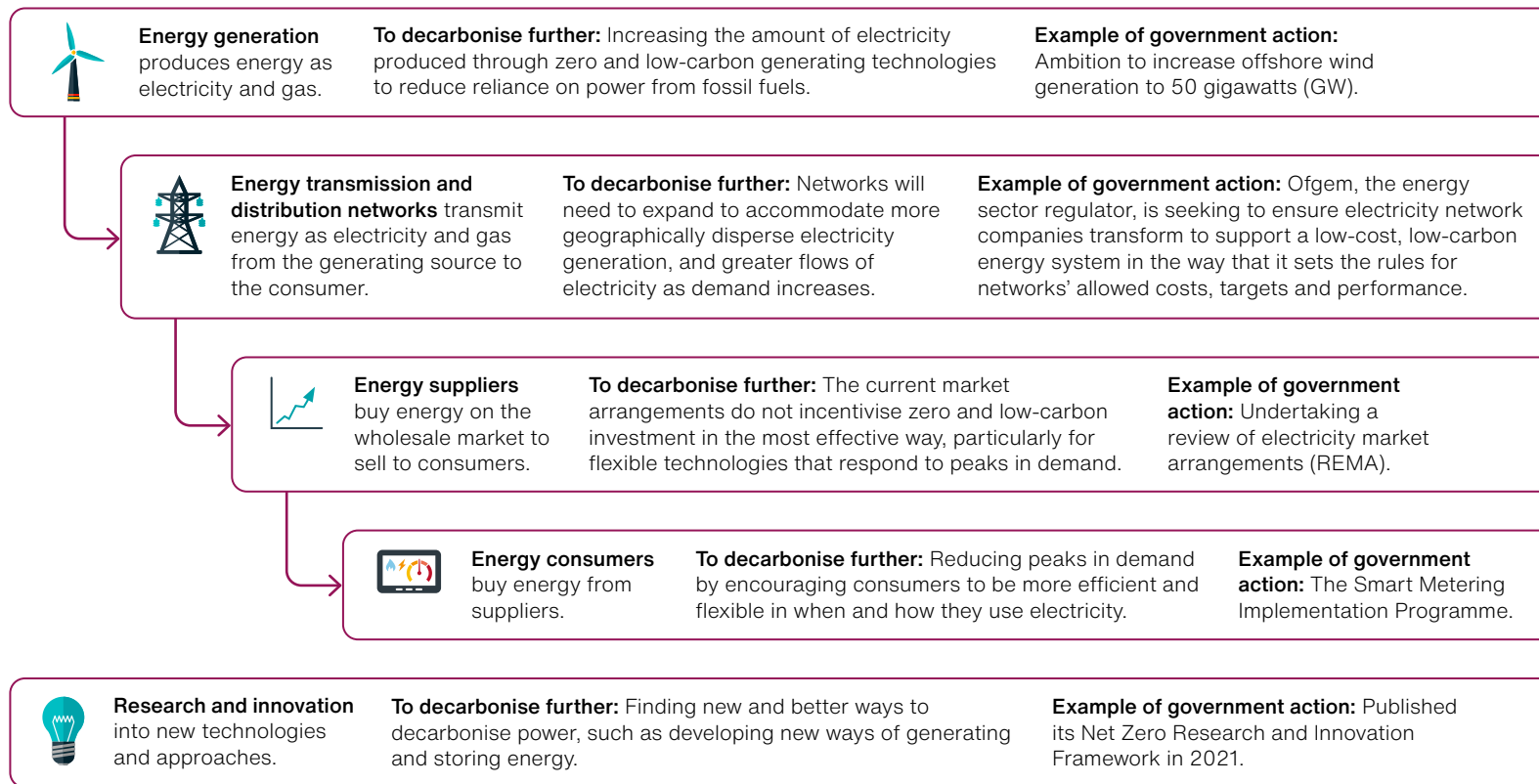


Section 13:

Coordinating the government's clean energy mission *continued*

The energy system in Great Britain and actions to decarbonise

Decarbonising the power sector will require system-wide changes across five key aspects: electricity generation, networks, markets, consumer demand and innovation



Source: Comptroller and Auditor General, *Decarbonising the power sector*, Session 2022-23, HC 1131, National Audit Office, March 2023 (Figure 5)

14 Net zero: influencing households to change the way they heat their homes

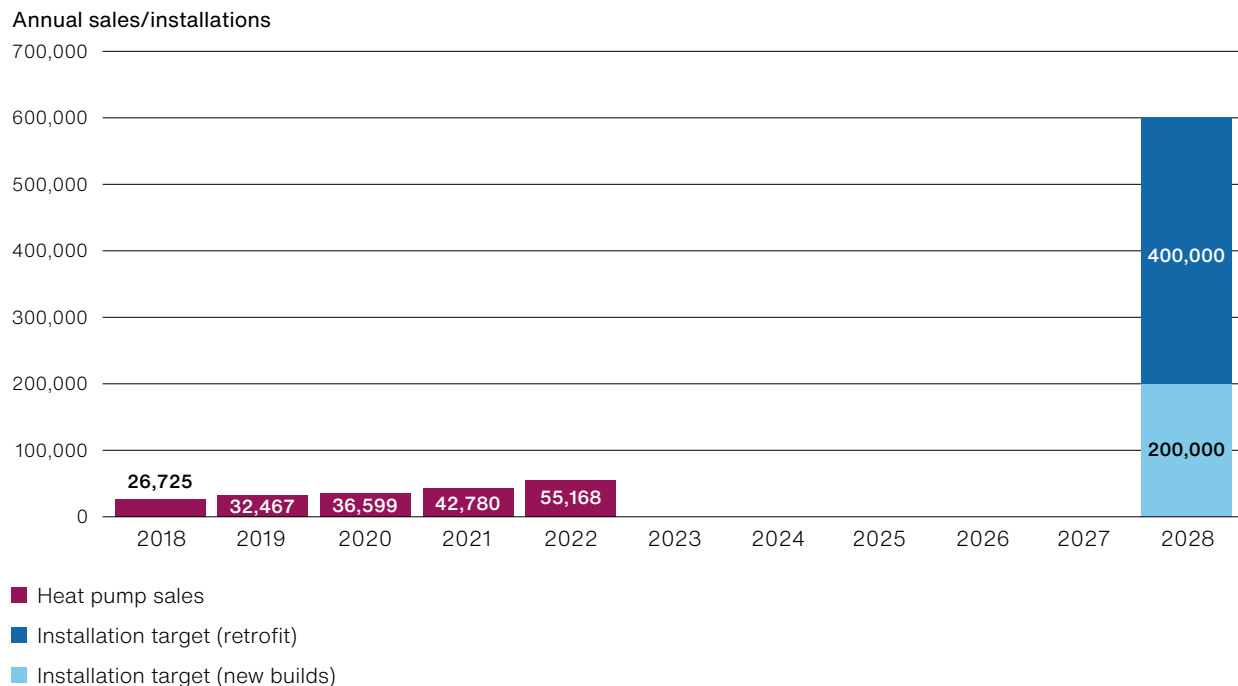
Reducing emissions from heating homes is a key component of the government’s overall target to achieve net zero greenhouse gas emissions by 2050. Heating the UK’s 28 million homes accounts for around 18% of all UK greenhouse gas emissions. The main source of these emissions is burning natural gas to heat homes. Reducing emissions from home heating will mean that households that use fossil fuel heating, such as gas boilers, will need to switch to a low-carbon alternative, such as heat pumps. In our report, [Decarbonising home heating](#) (March 2024), we reported that the government had committed £6.6 billion from 2021-22 to 2024-25 for schemes to improve energy efficiency and install low-carbon heating, and an additional £6 billion from 2025-26 to 2027-28.

As a major element of its strategy to decarbonise home heating, the government is aiming to reach 600,000 heat pump installations in the UK per year by 2028. In 2022, 55,000 heat pumps were installed in homes across the UK. Achieving the target of 600,000 annual installations by 2028 would require annual installations to increase elevenfold between 2022 and 2028 (using sales as a proxy for installations). In March 2024 we concluded that DESNZ was relying on “optimistic assumptions” to believe it could achieve this target.

DESNZ regards the target as viable given its planned policies and regulation for 2024 onwards. This includes increasing the funding available through the Boiler Upgrade Scheme, which provides households in England and Wales with an up-front grant to help cover the cost of replacing fossil fuel heating with a heat pump or biomass boiler. In October 2023 the value of the grant was increased to £7,500, a rise on the £5,000–£6,000 grant that had been available between May 2022 and September 2023. The higher-value grant covers nearly 60% of the average cost of installing a heat pump, based on the average cost in 2023.

Annual UK heat pump sales (2018 to 2022) compared to the 2028 heat pump installation target

A steep ramp up in heat pump sales and installations will be required to reach the government’s target of 600,000 installations per year by 2028



Notes

- 1 Data from 2018 to 2022 reflect heat pump sales, which are not directly comparable to installations because sales take place before installation and are therefore front-loaded. We have used heat pump sales data because the government does not currently have a single, comprehensive measure of heat pump installations.
- 2 The government expects the 600,000 heat pump installations per year to be split across new-build homes and retrofit of existing housing stock in 2028. Reaching approximately 200,000 heat pump installations in new-builds by 2028 depends on the number of newly built domestic properties. There are no interim targets or expected milestones prior to 2028.

Source: Comptroller and Auditor General, [Decarbonising home heating](#), Session 2023-24, HC 581, National Audit Office, March 2024 (Figure 6)

15 Major projects and programmes

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DESNZ leads the delivery of 19 of the 244 major projects included in the Government Major Projects Portfolio (GMPP). As at 31 March 2023, DESNZ had the fifth largest number of projects and the third largest whole-life cost by department, on the GMPP.

Department for Energy Security & Net Zero (DESNZ) projects and programmes on the Government Major Projects Portfolio (GMPP), 2019-20 to 2022-23

DESNZ had 19 projects on the GMPP, as at the end of March 2023

Programme	Delivery confidence assessment (DCA)				End date	Cost (£mn)	Monetised benefit (£mn)
	2019-20	2020-21	2021-22	2022-23			
Geological Disposal Facility Programme Construction of a permanent facility as a solution to long-term management of higher-activity radioactive waste in the UK (excluding Scotland).	Amber	Green	Amber	Amber	March 2050	20,300	Not provided
Smart Metering Implementation Programme Replace traditional gas and electricity meters with smart meter equivalents.	Amber	Amber	Amber	Amber	December 2025	20,177	34,130
Energy Bills Support Scheme Provide a one-off £400 reduction to domestic energy bills for the significant majority of households in Great Britain and Northern Ireland.				Amber	October 2023	12,455	12,415
Social Housing Decarbonisation Fund Decarbonise social housing over the 2020s in pursuit of carbon and fuel poverty targets.		Amber	Amber	Amber	March 2030	4,721	10,326
Public Sector Decarbonisation Scheme Grants to public sector bodies to fund heat decarbonisation and energy efficiency measures.		Amber	Amber	Amber	March 2025	2,598	5,324
Sellafield Product and Residue Store Retreatment Plant A facility to process special nuclear material, such as plutonium, into a form suitable for safe and secure storage until 2120.		Amber/red	Amber	Green	October 2029	1,380	Not provided
SIXEP Continuity Plant Replace existing effluent treatment plant at Sellafield, including providing interim waste storage capability.		Amber/red	Amber	Green	January 2031	1,034	Not provided
Replacement Analytical Project Replace existing analytical facilities at Sellafield.		Amber	Red	Red	July 2028	712	Not provided
Home Upgrade Grant: Phase 2 Install energy efficiency measures and implement low-carbon heating in low-income, off-gas-grid homes in England.				Amber	March 2025	676	1,839
Green Homes Grant: Local Authority Delivery Grants from the government to local authorities in England to support energy improvements to the worst-quality homes by installing energy efficiency measures and low-carbon heating.		Amber	Amber	Amber	April 2023	509	2,202

Section 15:

Major projects and programmes *continued*

Department for Energy Security & Net Zero (DESNZ) projects and programmes on the Government Major Projects Portfolio (GMPP), 2019-20 to 2022-23 *continued*

Programme	Delivery confidence assessment (DCA)				End date	Cost (£mn)	Monetised benefit (£mn)
	2019-20	2020-21	2021-22	2022-23			
Low Cost Nuclear Programme (Rolls Royce SMRs Challenge) R&D and innovation to further develop the UK small modular reactor power station concept.			Amber	Amber	March 2025	468	280
Green Heat Network Fund Capital grant fund that supports commercialisation and construction of new low- and zero-carbon heat networks, retrofitting and expansion of existing heat networks to make them low carbon, and development and growth of the heat network market.				Amber	March 2025	298	2,267
Local Authority Delivery Phase 3 Install energy efficiency upgrades and implement low-carbon heating in low-income, on-gas-grid homes in England.			Amber	Green	March 2024	290	736
Net Zero Hydrogen Fund Support the commercial deployment of new low-carbon hydrogen production projects during the 2020s.			Amber	Amber	March 2025	242	4,390
Home Upgrade Grant: Phase 1 Install energy efficiency measures and implement low-carbon heating in low-income, off-gas-grid homes in England.		Amber	Amber	Amber	March 2024	222	604
Spherical Tokamak for Energy Production Design and build a prototype fusion energy plant capable of delivering net-energy to the grid.				Amber	March 2024	218	Not provided
Carbon Capture, Usage and Storage (CCUS) Support the deployment of CCUS in two industrial clusters by the mid-2020s and a further two clusters by 2030.			Amber	Exempt	December 2030	Exempt	Not provided
Industrial Decarbonisation and Hydrogen Revenue Support (IDHRS) IDHRS will cover lifetime costs for Industrial Carbon Capture and hydrogen business models.			Exempt	Amber	December 2050	Exempt	Exempt
Sizewell C Negotiate and design a viable funding/financing model for Sizewell C in Suffolk, a large-scale nuclear project.			Exempt	Exempt	Exempt	Exempt	Exempt
Total excluding exempted data						66,300	74,500
Total including exempted data						130,600	74,500

Notes

- The figure only includes programmes that were part of the Government Major Projects Portfolio in March 2023.
- The DCA is an evaluation by the Infrastructure and Projects Authority (IPA) or the Senior Responsible Owner of a project's likelihood of achieving its aims and objectives and doing so on time and on budget. They are ratings at a fixed point in time and use a five-point scale:
 - Green means 'successful delivery of the project on time, budget and quality appears highly likely'.
 - Amber/green means 'successful delivery appears probable'.
 - Amber means 'successful delivery appears feasible but significant issues already exist, requiring management attention'.
 - Amber/red means 'successful delivery of the project is in doubt, with major risks or issues apparent in a number of key areas'.
 - Red means 'successful delivery of the project appears to be unachievable'.
 - Some data is exempt from publication (shown in grey).
- Amber/green and amber/red ratings were no longer issued from 1 April 2021, when the IPA moved from a five-tier to a three-tier system.
- 'End date' is the latest approved end date for the programme.
- Blank boxes are where programmes were not on the GMPP at that reporting date.
- Totals have been rounded to the nearest hundred million pounds.

Sources: National Audit Office analysis of information from Infrastructure and Projects Authority, [Annual Report on Major Projects 2022-23](#) and [DESNZ Government Major Projects Portfolio Data March 2023](#)

16 More information about our work on DESNZ

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Date	Report title	Scope of the report
November 2024	■ Energy bills support: an update	Examines, as a follow-up to our 2023 report, the total costs of each of the energy bills support schemes, and the extent to which these achieved their objectives to protect consumers and boost the economy. Also examines DESNZ's management of the schemes' closure, DESNZ's management of schemes' risks, including those around fraud and error, and DESNZ's approach to protecting consumers against future volatility in energy prices.
October 2024	■ Decommissioning Sellafield: managing risks from the nuclear legacy	Examines progress since we last reported in 2018, particularly progress in addressing the risks from ageing legacy facilities storing the most hazardous waste. Also examines the impact of the Nuclear Decommissioning Authority's reforms on governance and oversight of nuclear decommissioning, and Sellafield Ltd's ability to understand current and emerging decommissioning risks at its site and put in place plans to address these.
October 2024	■ Achieving environmental improvement and responding to climate change: enablers for success	Draws out learning from past NAO reports to identify enablers that we see as important for tackling the challenges the government faces in its environment and climate change work.
July 2024	■ Carbon Capture, Usage and Storage programme	Examines how DESNZ responded to the lessons of previous attempts to support carbon capture, usage and storage (CCUS) in designing the current programme, the progress DESNZ has made with the current CCUS programme, and the key risks and issues that DESNZ will need to address to meet its targets for CCUS deployment.
March 2024	■ Decarbonising home heating	Examines the progress DESNZ has made in decarbonising home heating since the government published its Heat and Buildings Strategy in 2021, including whether it has established a clear pathway to decarbonising home heating in a way that is value for money.
January 2024	■ The government's support for biomass	Examines the current role of biomass in generating heat and power, the government schemes currently in place and the main features of DESNZ's Biomass Strategy.
September 2023	■ Approaches to achieving net zero across the UK	A joint piece of work between the public audit offices of the four UK nations. It sets out the UK and devolved governments' legislation, policy, strategy, governance and monitoring arrangements relevant to achieving net zero greenhouse gas emissions.
June 2023	■ Update on the rollout of smart meters	Assesses BEIS/DESNZ's progress in leading the smart meter rollout since our previous report in 2018 and how well DESNZ is set up for the remainder of the rollout and the subsequent transition to industry-led governance.
May 2023	■ Support for innovation to deliver net zero	Examines whether the government is set up to deliver value for money from its approach to investment in research and innovation to deliver net zero in the UK.
March 2023	■ Investigation into Bulb Energy	Sets out the facts about the process by which Bulb Energy Limited was taken into a Special Administration Regime in November 2021, before its customers were transferred to a new provider in December 2022.
March 2023	■ Decarbonising the power sector	Provides an early assessment of the risks DESNZ needs to manage as it develops a plan to achieve its ambition of decarbonising power by 2035.
February 2023	■ Energy bills support	Provides the basis for early parliamentary scrutiny of how BEIS has designed and implemented the energy bills support and the potential cost.
June 2022	■ The energy supplier market	Sets out the facts regarding the recent exit of energy suppliers, and evaluates the roles of Ofgem and BEIS in the events leading to the exits and how well they handled them.
January 2022	■ The decommissioning of the AGR power stations	Examines whether the outcome of BEIS's negotiations with EDF Energy and subsequent preparations for defueling and deconstruction are likely to lead to better value for money when decommissioning the Advanced Gas-Cooled Reactor fleet.

Subject of report

- Energy sector (consumer focus)
- Wider net-zero arrangements
- Energy sector (generation focus)
- Nuclear decommissioning

In our reports we make recommendations and follow up on those recommendations in a [tracker](#) on our website to promote scrutiny and parliamentary accountability. As at the end of September 2024, there were 14 reports on the tracker with 83 recommendations for which DESNZ was identified as the lead or co-lead department responsible. Of these recommendations, DESNZ has accepted 63, partially accepted 10, was still to respond to 10, and so far, has implemented 46.

17 What to look out for

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Energy sector: generation focus

The new government has committed to delivering clean energy by 2030, five years earlier than the previous government's target. The following will be important and challenging as DESNZ seeks to achieve this objective.

Mission Control for clean energy

One of the new government's five missions is to "make Britain a clean energy superpower". Its Mission Control for clean energy has been tasked with delivering this mission by 2030. It will need to facilitate a joined-up approach between a range of public organisations including DESNZ, Great British Energy, Ofgem, the Crown Estate, the National Grid, and the Electricity System Operator, if it is to achieve its objectives of clean power, increasing the UK's energy independence and reducing consumers' energy bills. [Look out for a holistic plan to decarbonise the power sector.](#)

Network upgrades, reinforcements and connections

Transmission networks are required to take electricity from where it is generated to centres of demand. As the power sector decarbonises, less electricity is generated in a small number of fossil fuel power stations, and more is generated by geographically dispersed renewable infrastructure such as

offshore windfarms, requiring new connections, and network upgrades and reinforcements. Similarly, networks that distribute electricity in a local area, for example to households, also need upgrading and reinforcing as consumers use more to charge electric vehicles and for home heating. In April 2024, prior to reform to the electricity connections process, some customers seeking network connections were being offered dates in the late 2030s. The connections queue stood at more than 700GW, which Ofgem considered could rise to 800GW by the end of 2024 and is far more than Great Britain's energy needs for net zero. However, not all projects would ultimately connect, with a further complication being the uncertainty of which ones would. [Look out for the government's actions to reduce the connections queue.](#)

Contracts for difference allocation rounds

Allocation Round 6 was the largest round ever in terms of funding available and the number of successful projects. The government has committed to holding annual allocation rounds. These are the government's primary support mechanism for achieving its low-carbon electricity generating targets. [Look out for Allocation Round 7, and how it contributes to the government's target of, for example, 60GW of offshore wind capacity by 2030.](#)

Progress with large-scale nuclear stations, and small modular reactors (SMRs)

The government has an ambition to achieve up to 24GW of nuclear power by 2050. The UK currently has five nuclear power stations; however, all but one of these is expected to be retired by 2028 as they reach the end of their useful life. A new 3.2GW station is being built at Hinkley Point C. This station has a contract-for-difference arrangement with DESNZ, which means the station will sell electricity (when it starts generating it) at a guaranteed price, over a period of 35 years. The government has confirmed development consent for a new 3.2GW station at Sizewell C, and as at November 2024 is negotiating with private investors with the aim of financing this station using a regulated asset base funding model. Furthermore, DESNZ is seeking to facilitate investment in SMRs, which Great British Nuclear is leading on. [Look out for a deal on Sizewell C, and progress with selecting companies to support the development of SMRs.](#)

Section 17:

What to look out for *continued*

Energy sector: consumer focus, and wider net zero arrangements

Increase in the take-up of heat pumps

Heating the UK's 28 million homes accounts for around 18% of all UK greenhouse gas emissions. The main source of these emissions is from burning natural gas to heat homes. Reducing emissions from heating homes is therefore a key component of the government's overall target to achieve net zero greenhouse gas emissions by 2050. Households using fossil fuel heating, such as gas boilers, will need to switch to a low-carbon alternative, such as heat pumps. DESNZ aims to reach 600,000 heat pump installations per year by 2028; however, installation and running costs remain higher than fossil fuel alternatives. [Look out for progress by DESNZ against the heat pump installation target, and rebalancing the costs of energy, for example by moving levies and obligations from electricity to gas bills.](#)

Improvements in the UK Emissions Trading Scheme (ETS)

The UK ETS is a cap-and-trade scheme which imposes a carbon price on certain domestic products by charging businesses that emit significant amounts of carbon dioxide. It came into effect on 1 January 2021. The government has announced that a carbon border adjustment mechanism (a charge levied on imports where

the country of origin sets lower carbon prices than the UK) would be introduced in some sectors by 2027. In July 2024 the [Climate Change Committee \(CCC\)](#) recommended that the government "strengthen the UK ETS".

[Look out for how DESNZ responds to this recommendation.](#)

Electricity settlement reform (market-wide half-hourly settlement)

Electricity generators and suppliers trade electricity in the wholesale market in half-hourly periods. Most electricity customers are settled on a 'non-half-hourly' basis, using estimates of when they use electricity based on average consumer usage profiles and meter readings. Smart meters can record the amount of energy consumed in half-hourly periods, which provides an opportunity to make settlements more accurate and timely, and to act as an enabler for new products and services (such as electric vehicles or smart appliances). The government considers that more accurate recording and charging for electricity could result in lower bills, reduced environmental impacts, enhanced security of supply and a better quality of service. Flexibility services and time of use tariffs are likely to become widespread from 2025, when Ofgem expects industry to commence migration to half-hourly settlement arrangements. [Look out for half-hour settlements coming into force and new retail offers making use of this to provide new products and services.](#)

Review of Electricity Market Arrangements (REMA)

The previous government considered REMA to be its flagship policy to enable a net zero power sector by 2035 (its target date for power sector decarbonisation). The purpose of the review was to identify reforms needed to transition to a decarbonised, cost-effective and secure electricity system. It had run two consultations, the first in July 2022 which set out the case for change, and potential reform solutions. It conducted a second consultation, closing in May this year, which narrowed down the number of reform options and sought views on proposals. The government considered that this second consultation set a clear direction of travel for how the market arrangements must evolve in the future. The government is currently analysing feedback from this second consultation, and aims to implement the new arrangements from 2025 onwards. Many stakeholders agree that reform is crucial, but also potentially a risk if the changes made are not carefully managed. [Look out for the government's response to the consultation and how it engages with the sector to ensure an orderly transition.](#)