



Department for  
Business, Energy  
& Industrial Strategy

# Net Zero audits: state of the market and the potential to drive action

Final report

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# Executive summary

## Background

The Energy Savings Opportunity Scheme (ESOS) requires large businesses<sup>1</sup> in the UK to measure their total energy consumption at least every four years and carry out audits (or alternative compliance route e.g. ISO 50001) of the energy used by their buildings, industrial processes and transport. The audits are intended to identify practical and cost-effective energy saving opportunities. Completion of an audit is mandatory, but implementation of the recommendations from the audit is left to the discretion of the participant.

With a greater focus on Net Zero and the introduction by the Government of a target to reach Net Zero emissions across the UK by 2050, the Department of Business, Energy and Industrial Strategy (BEIS - the responsible department) has identified a potential conflict between the energy efficiency recommendations from an ESOS audit and the recommendations required to help a business along its journey to Net Zero. BEIS therefore commissioned PwC to undertake research with national stakeholders, ESOS assessors and businesses to explore different ways in which Net Zero elements could be incorporated into the ESOS audit. The specific research questions were as follows:

- What is the current market and policy situation regarding Net Zero audits and business advice on moving to Net Zero?
- What should be included within the Net Zero element of an ESOS audit?
- How would including a Net Zero element within ESOS audits affect the current Net Zero audit and/or energy efficiency audit markets?
- What impact would a Net Zero element to ESOS have on businesses?

This research consisted of a brief desk research exercise, a survey of 100 energy managers in relevant firms and 37 depth interviews with national stakeholders, energy assessors and relevant business managers.

## Current market and policy context of Net Zero audits and business advice on moving to Net Zero

In the Clean Growth Strategy, the Government estimated that up to £6 billion could be saved annually by 2030 through investment in cost-effective energy efficiency technologies, through improving the efficiency of buildings and processes. Since 2017, the Government has taken a number of further steps including making a Net Zero commitment by 2050 in legislation.

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<sup>1</sup> An organisation is defined as large under ESOS if either it employs 250 or more people or it has an annual turnover in excess of £44 million, and an annual balance sheet total in excess of £38 million.

The desk research has demonstrated that there is growing business awareness of, and appetite to contribute to the Net Zero agenda in the UK. Businesses can benefit from a wealth of advice, from sources such as specialist energy assessors, professional services firms, the registers, sustainability-focused organisations, general business organisations and standards bodies. Organisations such as the British Standards Institute and Carbon Trust have been producing guidance on carbon reduction for more than 10 years, including Government's Environmental Reporting Guidance. However, given the need for more support and guidance that businesses have suggested, it may be worthwhile considering how best to signpost this information and help businesses navigate it. The research found limited examples of models elsewhere but from the examples considered, it may be worth addressing the role of landlords, the assessment cycle and the benefits of benchmarking. This can be seen in the French Tertiary Decree, for example, described in more detail below, under which landlords and tenants must agree on their responsibilities regarding yearly energy measurement and reporting, and those who do not declare or ensure reduction of their energy usage risk being fined or named publicly.

## Current approaches to ESOS

As may be expected, there is a real range of engagement with energy efficiency, sustainability and Net Zero amongst businesses, often driven by the extent to which business sees benefits from engaging with this area, from reducing cost, winning work and shaping brand image.

When thinking at a high level about ESOS, stakeholders, businesses and assessors believe that, although ESOS has significant benefits, there are issues with the scheme that need to be addressed as a first step. Some of our participants view ESOS as raising awareness of energy efficiency measures that would not have been implemented otherwise, while others view ESOS as a compliance activity with few actionable recommendations. Our analysis has demonstrated that businesses that are eligible for ESOS fall into four quadrants which determine how they engage with ESOS<sup>2</sup>:

1. Those that have mature sustainability/GHG strategies and high engagement with ESOS
2. Those that have limited/no sustainability strategies and high engagement with ESOS
3. Those that have mature sustainability/GHG strategies and low engagement with ESOS
4. Those that have limited/no sustainability strategies and low engagement with ESOS

ESOS is not therefore currently perceived as a value-adding scheme across the board. The participants in this research who are more positive in relation to ESOS value its role in increasing awareness of energy saving measures for businesses, the fact that it can be used strategically and that it can facilitate sustainability planning. However, there are challenges relating to: the fact that some businesses view ESOS purely as a compliance exercise;

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<sup>2</sup> This based on qualitative insights from a small sample of businesses, so the research report is unable to comment on the relative size of these groups

perceptions of the varying quality of assessors; the lack of standardisation of the ESOS report; and the fact that implementation of recommendations is not mandatory. These findings align with those of the Post Implementation Review of the scheme undertaken by BEIS and published in 2020.<sup>3</sup>

Businesses that have lower engagement with ESOS tend to demonstrate some or all of the following barriers:

- Energy policy is not seen as a priority by the board
- The business has a short-term focus
- The business is experiencing budget constraints
- The business has a perception that it is limited in what it can feasibly do
- The business already has a well-developed sustainability/Net Zero strategy

In contrast, those businesses with higher levels of engagement with ESOS tend to have experienced significant cost savings as a result of implementing previous ESOS recommendations and have used ESOS as a strategic opportunity to shape their broader sustainability or Net Zero strategy. While the focus of this study is on Net Zero in ESOS rather than ESOS itself, any future development of ESOS in terms of Net Zero should take into account these wider views.

## Perceptions of including Net Zero in ESOS

At an overall level, the research has demonstrated high levels of theoretical support for the inclusion of a Net Zero element to ESOS, but there are operational concerns around how it can be successfully delivered. The theoretical support comes from beliefs that: Net Zero is a logical extension of ESOS; it will raise awareness of important measures of which businesses may have previously been unaware; it enhances energy managers' business case when going to their boards; and assessors feel confident that this is both feasible and deliverable.

The operational concerns from business stem from concerns over the longer payback period for Net Zero measures and concerns over the implications of commercial leasing of property as a disincentive to make large scale changes. The assessors who participated in this research are generally confident that they can deliver Net Zero as part of ESOS, although there is a belief that BEIS needs to be clear both in its definition of Net Zero, and the skills and technologies on which assessors need to focus.

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<sup>3</sup> [Energy audits and reporting research, including the Energy Savings Opportunity Scheme - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/research-data-and-analysis/energy-audits-and-reporting-research-including-the-energy-savings-opportunity-scheme)

## A Net Zero audit: factors for inclusion

When exploring what factors to consider for inclusion within a Net Zero element of ESOS, the research focused on the factors listed below. These factors for inclusion were determined following discussions with BEIS as well as from the desk research and the emerging findings in the initial fieldwork period.

- Sources of energy
- Renewable technologies
- Energy efficiency measures
- Fleet management
- Investment in Net Zero
- Scope for decarbonisation in industrial processes
- Offsetting
- Behavioural change
- A focus on the building fabric

In terms of the core content above, all measures, with the exception of offsetting, were viewed as elements that are feasible to be included, and would be expected to be incorporated in a Net Zero element of an ESOS audit. However, within this, there are varying levels of perceived acceptance by businesses and likelihood to act on ESOS recommendations in these areas in the short to medium term, relating to cost or how long would be required to implement the recommendations.

There is a recognition that currently there are a number of ESOS reports which go above and beyond the typical report, so a voluntary extension already exists in an informal manner. There is some concern that if there are voluntary elements, there will be no or limited participation by low engagement businesses. Further, voluntary extensions are perceived to add an additional degree of complexity and time to a Net Zero ESOS audit, over and above the impact of the core inclusions.

## Impact of including Net Zero in ESOS on the market

There is a view that one impact on the assessor market may be to raise the overall quality of assessors, as less skilled assessors will either successfully upskill or drop out of the market. Overall, however, there is a general concern regarding whether there are sufficient numbers of assessors with the necessary skills to effectively complete a potential Net Zero element of ESOS.

The positive impact to business centres on: help to meet government targets; reputational benefits; and halting investment in out-of-date technologies. For those with less mature sustainability strategies, it is also a mechanism to start the conversation.

Potential negative impacts include: increased cost, time and complexity of the assessment; the increased provision of data; the cost of implementing recommendations; the lack of perceived value if the business is not implementing the recommendations currently; the potential to invest in technologies that become out-of-date in a short space of time; and increased pressure on businesses with a less mature sustainability strategy.

## Areas for future consideration

Our research has identified a number of areas for future consideration. These include:

- **Incorporating Net Zero elements into ESOS:** overall there is a clear appetite for including a Net Zero element into ESOS. The next steps should be to determine the scope of the audit and what would be meaningful to include in it, drawing on the evidence in this report. Consideration should also be given to alignment and advice on Net Zero in ESOS with other reporting requirements such as SECR and the proposed forthcoming Task Force on Climate-Related Financial Disclosures (TCFD) regulations, so assessors and businesses have a longer term view of the requirements on them through 2027 and beyond.
- **Business needs for Net Zero and ESOS:** participants in this research have suggested a range of measures that could support businesses in implementing Net Zero recommendations in an ESOS report. These include, but are not limited to: streamlined advice and guidance; financial incentives; more frequent audits; and consideration of different reporting needs of different parts of the business.
- **Amending existing standards:** many of the stakeholders who participated in this research thought that there could be value in learning from or applying content from environmental or carbon neutrality focused standards, such as ISO 14001, ISO 50001 and PAS 2060 to a potential Net Zero element of ESOS.
- **A review of assessor training:** there is a need to define what Net Zero means for assessors, review existing assessor training and consider the core skills required (e.g. levels of technicality, sustainability and consultancy skills) for assessors to conduct a Net Zero assessment, as well as sector specific skills and how to generate consistency across bodies. Consideration should also be given to the skills supply side to help meet the demand for the relevant engineering and sustainability-related skills.
- **Awareness raising around Net Zero amongst businesses and targeted industrial advice:** consideration should be given to improving communications with businesses around Net Zero and to working with sectoral bodies to deliver industry specific guidance.

# Introduction

## Background

In 2019 the UK Government amended the *Climate Change Act 2008* to introduce a target of a 100% reduction of greenhouse gas emissions (compared to 1990 levels) in the UK by 2050. The Climate Change Committee (CCC) whose recommendation for a 78% decrease in emissions by 2035 has been accepted by the UK Government for the sixth Carbon Budget in order to keep the UK on track to meet this target, states in its latest advice to businesses that:

*This will require all investments and major purchases – such as cars and heating systems – to be zero carbon by the early 2030s at the latest, with only a very limited number of exceptions.*<sup>4</sup>

Achieving Net Zero will therefore require major contributions from all sectors of society, not just Government, including citizens and consumers and the private sector. This will inevitably entail a major transformation in the way businesses organise themselves and manage their operations.

There have been measures in place since long before 2019 to improve energy efficiency in the private sector in the UK. Since the 2012 EU Energy Efficiency Directive (which established a set of binding measures to help the EU reach its 20% energy efficiency target by 2020), large UK businesses have had to comply with the Energy Savings Opportunity Scheme (ESOS) introduced in 2014.

The transition towards a low carbon economy, policy, market and technology is creating trends which present risks and new requirements for businesses. Government policy, such as the UK's plans to shut down all coal-fired power stations by 2025<sup>5</sup>, will have implications for businesses in energy-intensive industries. Market and technology trends such as the continuing growth of electric vehicles, advances in battery design and the declining costs of renewable energy should be understood and factored in by businesses in such industries and in their supply chains.<sup>6</sup> Other accelerations in government policy include: TCFD reporting is proposed to become mandatory for large companies and institutional investors by 2022; and the need for auditors to improve their consideration of climate risk in relation to audits and quality monitoring.<sup>7</sup>

## The current ESOS system

The Energy Savings Opportunity Scheme (ESOS) requires large businesses in the UK to measure their total energy consumption at least every 4 years and carry out audits of the energy used by their buildings, industrial processes and transport. The audits are intended to

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<sup>4</sup> [The role of business in delivering the UK's Net Zero ambition - Climate Change Committee \(theccc.org.uk\)](https://www.theccc.org.uk)

<sup>5</sup> <https://www.climateaction.org/news/all-of-the-uks-remaining-coal-plants-will-shut-down-by-2025>

<sup>6</sup> [www.pwc.co.uk/services/sustainability-climate-change/climate-risk-decarbonisation-strategy.html](https://www.pwc.co.uk/services/sustainability-climate-change/climate-risk-decarbonisation-strategy.html)

<sup>7</sup> [/www.frc.org.uk/news/november-2020/climate-pn](https://www.frc.org.uk/news/november-2020/climate-pn)

identify practicable and cost-effective energy saving opportunities. Completion of an audit is mandatory, but implementation of the recommendations from the audit is left to the discretion of the participant. The scheme is estimated to lead to around £1.6bn net benefits to the UK, with the majority of these benefits applying to participating businesses as a result of reduced energy costs.

ESOS covers large undertakings and corporate groups containing large undertakings in the UK. An organisation is defined as large under ESOS if either it employs 250 or more people or it has an annual turnover in excess of £44 million, and an annual balance sheet total in excess of £38 million. ESOS covers both UK-registered and overseas companies that operate in the UK.

There are two main routes to compliance – organisations may gain ISO 50001 certification for all or part of their organisation, or they may commission an audit by an accredited ESOS assessor for the whole organisation or for those parts not ISO-certified (other routes are to use DEC, Green Deal for Business or use an internal assessor who is ESOS accredited).

The audit measures all energy consumption the organisation used for transport, buildings or industrial processes for a period of 12 months. The audit should then identify all 'significant' areas of energy consumption – this is energy consumption that covers at least 90% of total energy consumption. Organisations may choose to exclude up to 10% of energy on a site basis, on an activity basis (i.e. transport, buildings or industrial processes), or on a fuel type basis.

Organisations must, where practicable, use energy consumption profiling in their analysis of energy use for the ESOS energy audit, though a method for doing this is not set. Auditors must carry out site visits as part of the ESOS energy audit, but can use a site sampling approach rather than visiting every site.

Energy audits should analyse the organisation's energy consumption and recommend practical and cost-effective energy saving measures, identifying the estimated costs and benefits of these measures. ESOS does not mandate specific energy auditing methodologies that must be used, though guidance is provided on suggested methods. Recommendations can include reporting and monitoring, improving servicing and maintenance, behaviour change projects and capital investment projects. ESOS audits do not have to be presented in any particular format.

Businesses must appoint a lead assessor to carry out and review the energy audits and overall ESOS assessment. Lead assessors can be employees or external contractors as long as they are members of an approved professional body register. The Environment Agency is the overall scheme administrator in the UK.

## Incorporating Net Zero elements within ESOS

With a greater focus on Net Zero, the Department of Business, Energy and Industrial Strategy (BEIS; the responsible department), has identified a potential conflict between the energy efficiency recommendations from an ESOS audit and the recommendations required to help a business along its journey to Net Zero.

BEIS is currently exploring ways of strengthening the existing ESOS scheme. To reach the UK's 20% energy efficiency improvement ambition for businesses by 2030, and the 2050 Net Zero targets, the Department is clear that there is a need to maximise the energy savings from large businesses.

According to the Department, the aims of a Net Zero element to ESOS would be to:

- Refocus the ESOS scheme from short term cost savings to cover longer term strategic considerations around energy use
- Identify potential risks to the business of moving to Net Zero and possible trajectories
- Ensure that investment in energy efficiency now does not prejudice future changes (e.g. clean heat)
- Widen recognition among businesses that they need to take action now or in the future to move to Net Zero.

In the context of this wider consultation into the future of ESOS, BEIS commissioned PwC to undertake research with national stakeholders, ESOS assessors and businesses to explore different ways in which Net Zero elements could be incorporated into the ESOS audit. The specific aims and objectives of this research exercise are provided below.

## Aims and objectives for this research

This research aims to answer the following four broad questions:

1. What is the current market and policy situation regarding Net Zero audits and business advice on moving to Net Zero?
2. What should be included within the Net Zero element of an ESOS audit?
3. How would including a Net Zero element within ESOS audits affect the current Net Zero audit and/or energy efficiency audit markets?
4. What impact would a Net Zero element to ESOS have on businesses?

In the next section of this report, our methodology for responding to each of these research questions is outlined. The remainder of this report is structured as follows:

- Current market and policy context of Net Zero audits and business advice on moving to Net Zero
- Current approaches to ESOS
- Perceptions around including Net Zero in ESOS
- A Net Zero audit: factors for inclusion

- Impact of including Net Zero in ESOS on the market
- Conclusions

# Methodology

## Introduction

A multi-method approach was adopted to assess each of the core research questions outlined in the previous section of this report. It included:

- Desk research to ascertain the current state of the Net Zero audit market and any international examples that might be informative
- Qualitative research with national stakeholders, assessors and businesses to assess the impacts of any policy changes
- A small-scale survey of businesses subject to the current ESOS regulations to assess the impact on businesses.

The desk research and the qualitative and quantitative primary research were conducted in February and March 2021. Due to the timescale for this project, the research activities were undertaken in parallel. The following sections outline our approach in more detail.

## Desk research

A short desk research exercise was undertaken to contextualise this research and to inform the research instruments for the qualitative and quantitative research. Documents were sourced from publicly available search engines, internal databases and on recommendations from research participants. A total of 50 documents were reviewed. A full list of sources consulted can be found in [Appendix A](#). The main findings from this exercise can be found in the following section.

## Qualitative research

The main focus of our methodology was qualitative in nature. As noted above, there were three main groups that participated in this research. In total, 10 interviews were conducted with stakeholders, 12 interviews with members of the assessor community and 15 interviews with businesses subject to the ESOS regulations.<sup>8</sup> All interviews were conducted by an experienced PwC qualitative researcher accompanied by a note taker. In light of the short timeframe for this research, all interviews were conducted between 17th February 2021 and 5th March 2021. These interviews were also conducted by video or telephone given the current Covid-19

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<sup>8</sup>As noted in the introduction to this report, ESOS covers large undertakings and corporate groups containing large undertakings in the UK. An organisation is defined as large under ESOS if either it employs 250 or more people or it has an annual turnover in excess of £44 million, and an annual balance sheet total in excess of £38 million. ESOS covers both UK-registered and overseas companies.

restrictions. All interviews were conducted in accordance with the Market Research Society Code of Conduct. The discussion guides for these interviews are provided in Appendix B.

In summary, the main topics covered included:

- The understanding of market context around Net Zero per se
- Engagement with ESOS, the appetite for Net Zero in ESOS, exploration of what should and could be included in the audit
- The impact on the assessor market, business engagement and ultimately on wider UK emissions targets.

A range of national energy stakeholders were consulted as part of this research. They were selected on the basis that they would provide a range of insights from varying national organisations working in this sector. Assessor interviewees were recruited using a snowball technique and recommendations. Snowballing involved using PwC's extensive network of contacts to provide direct recommendations of assessor businesses and individuals and then generating other contacts from these initial ones. The business interviewees were recruited using our specialist recruitment team.

## Quantitative research

In order to extend the breadth of our research and to supplement the qualitative research, we undertook a survey of 100 energy and/or operations managers in relevant businesses across the UK. The survey was conducted online with UK companies with more than 250 employees and/or a turnover of £50 million or more and took around 15 minutes for businesses to complete. Given the timetable of the research, the quantitative survey was intended as indicative rather than representative of the population of companies that are subject to ESOS.

## Methodological challenges

There were a number of methodological challenges which emerged in the course of this research, which are outlined below. These issues should be considered in the context of the UK Government's wider consultation on ESOS and other next steps in the journey to incorporating Net Zero in the scheme.

- Perceptions of the current ESOS scheme: a number of participants highlighted issues with the existing scheme and a perceived lack of interest from businesses in implementing the scheme as opposed to focusing on compliance. For some, these issues made it difficult for them to comment on the potential Net Zero element in ESOS.
- Definitions of Net Zero: different definitions of Net Zero emerged as an issue in both the desk research and in the interviews. For some participants, Net Zero is a relatively new concept and impacted on their ability to articulate the potential impact on them.

- Sourcing appropriate international examples: the desk research phase of this research revealed limited examples of Net Zero audits or equivalents in other jurisdictions. This meant that there were few concrete examples to test with businesses. Given that the UK was the first jurisdiction to introduce a Net Zero target, this may not be altogether surprising. Timescale for this research: the timeline for this research was challenging in that all fieldwork had to be completed and analysed within a two month period. This restricted timetable meant that the main research activities needed to be conducted in parallel.

# Current market and policy context of Net Zero audits and business advice on moving to Net Zero

## Introduction

This section of the report is based largely on the desk research exercise that was conducted at the outset of this research, based on the approach outlined in the previous section of this report. It is structured as follows:

- Government policy on Net Zero and businesses
- Net Zero products and information available to businesses
- Existing evidence on demand and take up from business
- International approaches to Net Zero audits
- Summary

## Government policy on Net Zero and businesses

In the Clean Growth Strategy (2017)<sup>9</sup>, the Government stated that:

*“Since 1990, emissions from business and industry have almost halved, mainly due to efficiency gains and a shift in manufacturing to cleaner fuels, as well as changes to the industrial structure of the UK economy. Much of this reduction has taken place in the most energy intensive industries”.*

It also estimated that up to £6 billion could be saved in 2030 through investment in cost-effective energy efficiency technologies, through improving the efficiency of buildings and processes, i.e. through better insulation and smarter energy controls. The other half could be realised through eliminating electricity waste i.e. by using better lighting and energy management systems.

Since 2017, the Government has taken a number of further steps: making a Net Zero commitment by 2050 in legislation; publishing ‘The 10 Point Plan for a Green Industrial Revolution’ in 2020<sup>10</sup>; and, most recently, in March 2021, publishing the Industrial Decarbonisation Strategy<sup>11</sup>. This latest Strategy undertakes to:

- Support industrial sites to install energy management systems

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<sup>9</sup> [Clean Growth Strategy \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/644447/clean-growth-strategy.pdf)

<sup>10</sup> [The Ten Point Plan for a Green Industrial Revolution \(HTML version\) - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/644447/the-ten-point-plan-for-a-green-industrial-revolution.pdf)

<sup>11</sup> [assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/970149/6.7279\\_BEI\\_S\\_CP399\\_Industrial\\_Decarbonisation\\_Strategy\\_FINAL\\_PRINT\\_FULL\\_NO\\_BLEED.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/970149/6.7279_BEI_S_CP399_Industrial_Decarbonisation_Strategy_FINAL_PRINT_FULL_NO_BLEED.pdf)

- Improve heat recovery and reuse across sites, particularly in sites with high operational temperatures
- Help less energy-intensive, dispersed industrial sites improve energy efficiency through the adoption of technologies available in the market with low payback times
- Develop a communications plan to make industry aware of the support that is already available to increase energy efficiency
- Support increased resource efficiency and material substitution within industry, by driving the transition towards a circular economy model and increasing reuse, repair and remanufacturing.

## Net Zero products and information available to businesses

The Post-Implementation Review report into ESOS published by BEIS in 2020 found that, prior to the introduction of ESOS, very few businesses conducted energy audits voluntarily. It states that, at the time of the research, there were approximately 900 Lead ESOS assessors in the marketplace<sup>12</sup> accredited under Phase 1 but that many of these assessors were already working in the industry:

*“Overall, however, evidence to date does not suggest that the ESOS process has had a significant long-term effect on the assessor market: most of those certified were already working within the field, and ESOS led to a short term spike in energy audits, rather than sustained demand between compliance phases” (BEIS, 2020)*

The overall market for Net Zero guidance, advice and auditing has grown since the UK Government introduced the 2050 target in 2019. Indeed, PwC has estimated that the market for Net Zero consultancy could reach £600m by 2025, across impact baselining, strategy development, assurance and reporting, and organisational transformation. Our internal analysis suggests that multidisciplinary consultancies, such as PwC, tend to refer to sustainability and climate change rather than Net Zero but that Net Zero support is an increasing part of their offering.

A range of different organisations currently provide advice to businesses on Net Zero, from consultancy firms, campaigning organisations and energy providers. Our desk research has demonstrated that there are many companies offering advice to organisations on carbon reductions, as well as energy, carbon and GHG emissions audits services, complemented with advice on reduction.

The use of the term “Net Zero audits” is not something that was encountered in the research, and although there is evidence of a market for audits followed by advice, these are not labelled as “Net Zero audits” by the companies offering these services. The range of products and services they offer varies, but all centre around working with businesses to set Science Based Targets (SBT) and create a plan or route map to achieve these targets. The table below is a

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<sup>12</sup> [Research on energy audits and reporting, including ESOS: phase 1 report \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/874442/research-on-energy-audits-and-reporting-including-esos-phase-1-report.pdf)

summary of selected services available to businesses in the UK, mapped against supplier type.

**Table 2: Taxonomy of suppliers of energy and Net Zero advice and audits**

Type of provider	Description	Example services	Products
<b>Specialist energy assessors</b>	e.g. existing ESOS assessors	<ul style="list-style-type: none"> <li>• Energy use and carbon emission quantification</li> <li>• Identification of weaknesses and opportunities for cost savings</li> <li>• Target setting</li> </ul>	<ul style="list-style-type: none"> <li>• CEn-Calc (Carbon Footprint Calculator for businesses)</li> <li>• Support brief sheets</li> <li>• Energy and Carbon Management Plan (ECMP)</li> </ul>
<b>Professional services firms</b>	e.g. PwC, EY, KPMG, Deloitte	<ul style="list-style-type: none"> <li>• Environmental sustainability services related to strategy, resource productivity, risk mitigation, attest services and supply chain.</li> <li>• Working with suppliers to set an SBTi approved carbon-reduction target</li> <li>• Investment in numerous multi-stakeholder sustainability alliances</li> </ul>	<ul style="list-style-type: none"> <li>• PwC Total Impact Measurement and Management</li> <li>• EY Engagement Carbon Calculator</li> <li>• KPMG - 12 Quality Criteria for Climate Risk and Net Zero Reporting</li> </ul>
<b>Registers</b>	e.g. Carbon Trust, IEMA	<ul style="list-style-type: none"> <li>• Footprint measurement and analysis</li> <li>• Setting science-based targets</li> <li>• Climate change</li> </ul>	<ul style="list-style-type: none"> <li>• Lists of certified ESOS assessors</li> </ul>

Type of provider	Description	Example services	Products
		impact evaluation	
<b>Sustainability organisations</b>	e.g. UKGBC, Achilles Carbon Reduction, Carbon Reduction Institute, CDP and the SBTi	<ul style="list-style-type: none"> <li>• Carbon Reduction certification</li> <li>• Carbon Neutral Product and Carbon Neutral Service Certification</li> </ul>	<ul style="list-style-type: none"> <li>• Net Zero Carbon Buildings: A Framework Definition</li> <li>• Renewable Energy Procurement &amp; Carbon Offsetting Guidance for Net Zero Carbon Buildings Report</li> </ul>
<b>General business organisations</b>	CBI	<ul style="list-style-type: none"> <li>• Virtual energy audit services</li> <li>• Life Cycle Analysis</li> <li>• Free Carbon Audits for farms</li> </ul>	<ul style="list-style-type: none"> <li>• Carbon Intelligence - Net Zero Guide for Businesses</li> </ul>
<b>Standards organisations</b>	e.g. BSI	<ul style="list-style-type: none"> <li>• ISO Certification</li> <li>• Remote audits</li> </ul>	<ul style="list-style-type: none"> <li>• Net Zero Barometer Report 2020</li> </ul>

Carbon emission audits are not a new phenomenon, with the Government providing guidance on measuring and reporting GHG emissions since 2009. However, these audits are becoming increasingly more prevalent and sophisticated in their methodology. Some global organisations provide companies with a calculation and assessment of their scope 1, 2 and 3 emissions, as well as helping them create SBTs and strategies for reduction. Organisations such as the Carbon Reduction Institute<sup>13</sup> offer a *Carbon Footprint Audit Process* where an organisation's carbon footprint is calculated (usually expressed in terms of kilograms of CO2 equivalents), with advice on how the participating organisations can reduce their environmental impact.

One sector in particular where greenhouse gas emissions audits are prevalent is the agricultural sector, as agriculture is estimated to be responsible for between 17-32% of human-

<sup>13</sup> <https://noco2.com.au/noco2-business-certification/carbon-footprint-carbon-audit/>

induced greenhouse gas (GHG) emissions<sup>14</sup>. The Farm Advisory Service<sup>15</sup> (FAS) in Scotland offers fully-funded carbon audits of farms or crofts to see where carbon performance improvements and savings can be made. Similarly to an ESOS audit, participating organisations are not required to act on the recommendations. Nearly all (92%) of FAS applicants rated the quality of the carbon audit report they received as excellent or good<sup>16</sup>.

## PAS 2060/Carbon Neutral Certification

The PAS 2060 is the standard for carbon neutrality developed by BSI in 2009. Although the PAS 2060 differs from a Net Zero definition due to the PAS 2060 treatment of Scope 3 emissions, as well as residual emissions, it is a further certification that offers advice on carbon reduction. Some energy consultancies, such as Carbon Trust<sup>17</sup>, offer a Carbon Neutral Certification, based on the PAS 2060 carbon neutrality certification. To achieve the certification, the participating company must measure its carbon footprint, including Scope 1 and Scope 2 emissions as well as Scope 3 emissions that contribute more than one percent of the total emissions. They also must develop a Carbon Management Plan, which includes a time scale for emissions reduction, specific targets for reductions, the planned means of achieving reductions and how residual emissions will be offset. In order to be certified as carbon neutral, the standard stipulates three types of validation: self-validation, other party validation and third-party independent validation. To promote transparency, the standard requires public disclosure of all documentation supporting the carbon neutrality statement. EcoAct has described this certification as ‘the ideal standard for carbon neutrality’<sup>18</sup>.

## Existing evidence on demand and take up from business

In general terms, PwC’s most recent Annual Global CEO Survey (published on 11th March 2021)<sup>19</sup> suggests that CEOs are showing a greater commitment to tackling climate change – an issue which has nearly doubled in terms of CEO concerns in recent years (from 44% two years ago to 70% this year). There are already positive signs of change, with more than half of UK CEOs increasing their investment in sustainability and other ESG (environmental, societal and governance) initiatives. However, over half believe they should still be doing more to measure (51%) and report (53%) the environmental impact of their business. Almost half (49%) of UK CEOs think reducing climate change and environmental damage should be a top three government priority, compared to 34% globally.

Although there are many sources of advice for businesses regarding Net Zero, it appears that there is still a lot of misunderstanding around the term and what it means for businesses. The British Standards Institution (BSI) in their study into how UK businesses are managing the

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<sup>14</sup> Bellarby, J., Foereid, B., Hastings, A. and Smith, P. (2008) Cool Farming: Climate impacts of agriculture and mitigation potential, Greenpeace.

<sup>15</sup> <https://www.fas.scot/carbon-audits/>

<sup>16</sup> <https://www.fas.scot/news/carbon-audits-your-guide-to-efficiency-and-performance/>

<sup>17</sup> <https://www.carbontrust.com/what-we-do/assurance-and-certification/carbon-neutral-certification>

<sup>18</sup> <https://info.eco-act.com/hubfs/0%20-%20Downloads/PAS%202060/PAS%202060%20factsheet%20EN.pdf>

<sup>19</sup> [UK CEOs plan a ‘no regrets’ recovery - 24th Annual UK CEO Survey - PwC UK](https://www.pwc.co.uk/uk-ceo-survey)

transition to Net Zero found that while 70% of businesses have committed or are considering committing to Net Zero targets, the vast majority (82%) require more guidance if they are to achieve that target<sup>20</sup>. Despite the fact that most businesses that have committed to Net Zero have done so with a target deadline in place, companies have not committed to timings for specific measures such as energy reduction, recycled materials or clean energy. In fact, of the top six measures put in place, 72% of respondents reported there was no specified completion date.

Atkins has also considered the impact of the Covid-19 pandemic on business attitudes to Net Zero and has identified a number of factors which may impact on uptake, demand and progress towards the targets.<sup>21</sup> These include:

- Shifting global leadership towards China and Asia-Pacific in general
- The threat of a post-Covid recession
- A reduction in the availability of capital for investment
- A reduction in the appetite for risk and innovation.

Source Global Resource, in its latest report into the energy consulting market, has also noted the impact of the Covid-19 pandemic on business priorities regarding Net Zero and the likely impact on the growth of the consulting businesses.<sup>22</sup>

## The needs of industrial businesses

According to the McKinsey Net-Zero Europe report (December 2020)<sup>23</sup>, the industrial sector will be the most expensive sector to decarbonise, due to the requirements for new technologies. Several organisations in the UK provide advice or services specifically for the industrial sector, which will be greatly needed for the transition to Net Zero, such as the Carbon Trust.

## International approaches to Net Zero audits

There are some international schemes that could be used as examples for what to include in the Net Zero element of an ESOS audit, such as the Tertiary Decree adopted in France, as well as examples of where benchmarking and Government support has been helpful in increasing the effectiveness of similar schemes. Examples were limited however, which is perhaps not surprising given that the UK was the first jurisdiction to legislate for Net Zero.

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<sup>20</sup> <https://www.bsigroup.com/en-GB/topics/sustainable-resilience/net-zero/NetZeroBarometer/>

<sup>21</sup> How resilient is our commitment to Net Zero in a post COVID-19 world? (Atkins, 2020)

<sup>22</sup> [reports.sourceglobalresearch.com/report/6944/the-energy-resources-consulting-market-in-2020](https://reports.sourceglobalresearch.com/report/6944/the-energy-resources-consulting-market-in-2020)

<sup>23</sup> <https://www.mckinsey.com/business-functions/sustainability/our-insights/how-the-european-union-could-achieve-net-zero-emissions-at-net-zero-cost>

## France

ELAN law<sup>24</sup> was adopted by French Senate in October 2018, and it has ambitious goals related to the energy consumption of buildings and gives a legal basis for controlling and reducing energy use in buildings. Approved in October 2019, the Tertiary Decree, imposes a reduction in the energy consumption of French tertiary sector buildings: starting September 2021, affected buildings (buildings over 1000 square metres) will have to declare their energy consumption on a yearly basis and ensure they reduce it by: 40% by 2030, 50% by 2040 and 60% by 2050, compared to a 2010 baseline (or a more recent year, if the data is not available). The responsibility for collecting the energy data of the buildings and submitting their annual consumption is enforced on both landlords and tenants, the scope of which should be mentioned in the lease agreement. Companies that do not comply face a fine of up to €7,500 per non-complying building and are also 'named and shamed' on a publicly available non-compliance list.

## Sweden

The main building assessment schemes used in Sweden, such as BREEAM, all have criteria relating to Environmental Product Declarations (EPD) and The International EPD System<sup>25</sup>. This is a global programme for voluntary and transparent communication of the life cycle environmental impacts of goods and services. The scope of the programme includes any type of product from any organisation in any country where there is a market demand to communicate its life cycle-based environmental information. The interest for using EPD in green public procurement is growing, driven among others by the Swedish Transport Administration, which incentivises lowering greenhouse gas emissions from products' life cycles with a certain percent compared to a baseline.

BREEAM<sup>26</sup> is an international scheme that provides independent third party certification of the assessment of the sustainability performance of individual buildings, communities and infrastructure projects. Similar to ESOS, it requires a qualified and licensed BREEAM Assessor to check the building or project for certification through national accreditation bodies. It measures a range of categories, one being energy. It assesses measures to improve the energy efficiency of the building as well as encouraging the reduction of carbon emissions. The main output from a certified BREEAM assessment is the rating. A certified rating reflects the performance achieved by a project and its stakeholders, as measured against the standard and its benchmarks.

## Transport specific initiatives

International transport sector initiatives in Net Zero includes the Transport Decarbonisation Alliance (TDA)<sup>27</sup> which is an international collaboration between countries, cities and

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<sup>24</sup> <https://perspectives.se.com/blog-stream/decret-tertiaire>

<sup>25</sup> <https://carbonfootprintinternational.com/sweden/>

<sup>26</sup> <https://www.breeam.com/discover/how-breeam-certification-works/>

<sup>27</sup> <https://tda-mobility.org/>

companies ('the 3Cs') aiming to accelerate the worldwide transformation of the transport sector towards a net-zero emission mobility system before 2050. Members of the alliance include countries such as France, the Netherlands and Costa Rica. In their manifesto, the TDA provides feasible solutions that the 3Cs can adopt to reach their objective, as well as 12 pillars of transformation to activate levers in synergy and create favourable economic, technical and social conditions for the transition to Net Zero emissions.

## International benchmarking

Businesses that use disclosure companies such as CDP<sup>28</sup>, which help their clients disclose their environmental impact and where they can improve to investors and stakeholders, appear to have experienced businesses benefits from disclosures. Three quarters (75%) of the companies it surveyed had a positive effect on their corporate reputation and 55% view themselves as more competitive. This suggests that a benchmarking element to ESOS would be viewed as attractive to businesses.

## Summary

In the Clean Growth Strategy, the Government estimated that up to £6 billion could be saved in 2030 through investment in cost-effective energy efficiency technologies, through improving the efficiency of buildings and processes. Since 2017, the Government has taken a number of further steps including making a Net Zero commitment by 2050 in legislation.

Our desk research has demonstrated that there is growing business awareness of, and appetite to contribute to the Net Zero agenda in the UK. Businesses can avail of a wealth of advice, from sources such as specialist energy assessors, professional services firms, the registers, sustainability-focused organisations, general business organisations and standards bodies. Organisations such as the Department for Environment, Food and Rural Affairs (Defra) and the British Standards Institute (BSI) have been producing guidance on carbon reduction for more than 10 years, but given the need for more support and guidance that businesses have suggested, it may be worthwhile considering how best to signpost this information. This research found limited examples of models elsewhere, but from the examples considered, it may be worth addressing the role of landlords, the assessment cycle and the benefits of benchmarking.

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<sup>28</sup> <https://www.cdp.net/en/companies-discloser>

# Current attitudes towards energy efficiency, Net Zero and ESOS

## Introduction

This section of the report looks at how businesses engage with energy policy and sustainability. It explores how ESOS is currently perceived, levels of engagement and the key challenges. It introduces four typologies of business with regards to engagement with ESOS and sustainability strategy. It also identifies sources of business guidance. The section is structured as follows:

- Businesses' energy efficiency and Net Zero engagement
- Perceptions of and engagement with ESOS
- Business typologies
- Sources of business guidance
- Summary

## Businesses' energy efficiency and Net Zero engagement

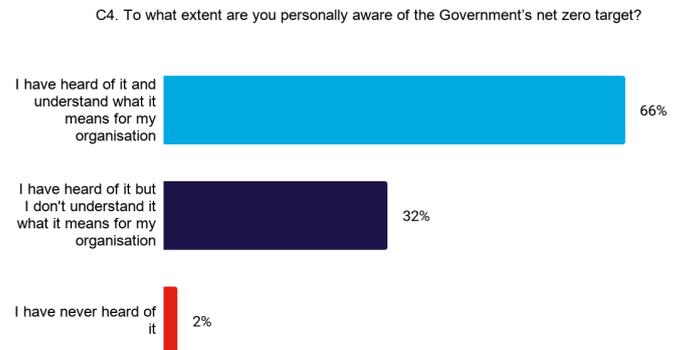
A broad spectrum of engagement with both energy efficiency and Net Zero is evident amongst businesses. In line with the research findings presented in the *Net Zero Barometer* report (BSI, 2021), our quantitative research demonstrates that at one end of the spectrum, 41% of businesses have a formal plan in place for their transition to Net Zero, however, 59% either have an informal plan or no plans at all in place with regards to their transition to Net Zero (see figure 1). Our quantitative research shows that although the vast majority of businesses (98%) report that they have heard of the Government's Net Zero target, a third do not understand what this means for their organisation (see Figure 2).

**Figure 1 and 2. Bar charts showing the personal awareness of the Government’s Net Zero target and the extent of planning for transitioning to Net Zero.**

Figure 1.



Figure 2.



Base: All respondents (100)

What has emerged in our qualitative research is a spectrum of business engagement with energy policy. At one end of the spectrum, there are businesses that have energy efficiency plans in place, often with no sustainability or greenhouse gas reduction strategy. However, at the other end of the spectrum, there are businesses who do have a sustainability, greenhouse gas reduction strategy and in some cases, one which is explicitly Net Zero focused. These businesses are more likely to have expert teams in house focused on this topic, with more support from leadership.

Businesses that typically do not view energy management as a strategic priority, and with lower senior leadership buy-in to Net Zero investment, indicate that the reasons for this include:

- **Limited perceived benefit from focusing on this area:** if the business cannot envisage a business reason for pursuing a focus in this area e.g. limited potential for reputational benefits or will not help attract clients or win work, then environmental sustainability can be deprioritised internally
- **Energy represents a small cost:** where energy is a small element of these businesses’ total expenditure it is less likely to be prioritised vs other competing demands.

*“A goal to become greener would be looked at as not important enough and put to the side.”* Business participant

The business motives to pursue a more ambitious sustainability strategy can include:

- **Reducing cost** - energy represents a high cost, so there are significant cost savings to be made by being more energy efficient
- **Attracting clients and consumers** - the board can see significant reputational benefits from pursuing ambitious environmental policies or see good environmental practice as a key part of their brand. Pursuing strong environmental policies forms a key part of their branding and unique selling proposition, and helps them to win and retain work/customers: *“we are seeing it as a business driver. If we don’t embrace it and change we will lose the competitive advantage. We see the commercial opportunities and risk from not adopting it.”* Business participant
- **Compliance with legislation:** legislation coming into place (e.g. existing and upcoming electric vehicle focused government legislation) has encouraged businesses to make changes
- **Wanting to do the right thing:** some boards have a genuine sense of altruism and are committed or passionate about positive environmental changes. They have a desire to do the right thing, and believe that they have a responsibility as a business to make changes for the benefit of the environment (although typically, at least one of the above three points also applies).

*“It wouldn’t be ethically right if a pharma company wasn’t committed to it. Because we are promoting health and wellbeing and if were trashing the environment as part of that it would be hypocritical”* Business participant

## Current perceptions of, and engagement with, ESOS

### Overall perceptions of existing ESOS scheme

Across businesses, assessors and national stakeholders, a key theme is that although ESOS has significant benefits, the majority do not view ESOS in its current form as a value-adding scheme across the board. Although all could identify areas for improvement within ESOS, there was a mix of positive views towards ESOS in terms of its usefulness as well as those who are less positive towards the scheme:

A more positive perception of ESOS among businesses, assessors and experts is typically driven by:

- **Perceptions and/or experience of previous ESOS reports increasing awareness of energy saving measures in businesses**, particularly those businesses with low awareness of energy spend. As a result, they have been able to reduce cost and experience reputational benefits of taking these measures and therefore appreciate the value of this to their business
- **Perceptions and/or experience that ESOS is being used as a strategic opportunity for the business** to review not just energy efficiency, but also carbon savings opportunities and subsequently to develop a broader sustainability strategy

- **Perceptions and/or experience that ESOS can be a facilitator** if the business does not have a well-developed plan (with limited in-house energy policy expertise) but would like to have one, ESOS recommendations are seen to be useful and as such are often implemented.

However, there are challenges with ESOS that businesses, assessors and national stakeholders would like to be addressed to ensure that the addition of a Net Zero element to ESOS is successful. The main challenges cited are:

- **Some businesses view ESOS as a compliance exercise** - there is a perception, among some assessors, that some businesses view ESOS as only a compliance exercise with the regulations. The consequence of this is that these businesses actively seek out lower cost assessments to minimise compliance spend. These assessors perceive that the lower cost assessments tend to not be of the highest quality, and this leads to less useful recommendations, which can reinforce the perception that ESOS offers little value. There is a perception that these businesses therefore drive a low cost or lower quality ESOS market solution.

*“ESOS is compliance. We try to reduce the cost of it to the minimum and assess the least amount of sites as possible.”* Business participant

*“For a lot of clients ESOS is just tick the box.”* Assessor

- **Varying assessor quality drives mixed quality of ESOS recommendations** - our assessor and national stakeholder audiences felt that there is a real mix of assessor quality. Assessors who are experienced low carbon consultants, or have more experience as energy reduction/GHG reduction consultants believe they offer high quality assessments that go above and beyond the average ESOS scope. However, there is a perception among the assessor community that there are also assessors (some of whom may be less skilled or diligent) catering to the business demand for low cost assessments. This means that there is a mix of quality of reports and recommendations made to business. As a result, not all businesses are presented with high quality recommendations which leads to ESOS being seen as a compliance-led exercise as outlined above

*“Not all the lead assessors are very competent and many aren’t that good at or comfortable with making recommendations over energy saving.”* Assessor

- **Lack of standardisation of the ESOS report** - some assessors believe that this leads to reports of varying quality and usefulness
- **No legal enforcement of ESOS recommendations** - the absence of a legal mechanism within the ESOS framework to encourage firms to implement the recommendations has meant that some businesses do not feel the need to act and regard conducting the assessment as sufficient.

*“We scurry around to hit the deadlines and then leave it until the next time. We have reduced the amount of paper but nothing else. And nothing has been done to make the head office site more energy efficient.”* Business participant

## Typology of engagement with ESOS: four business types

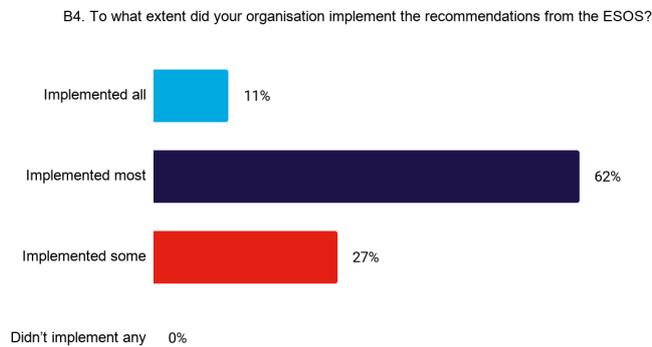
At an overall level, research has shown that there is a mix of levels of engagement with ESOS from businesses, some businesses implementing more recommendations than others.

The quantitative research shows that, although 73% of businesses surveyed have implemented some recommendations from previous ESOS reports, only 11% have implemented all of the recommendations provided in the report, with the vast majority implementing some or most of the recommendations (see Figure 3).

Businesses also vary in their perceptions of the usefulness of ESOS. The quantitative data from this survey demonstrates that overall, 94% of businesses found the recommendations they have received from previous ESOS reports useful, 50% found the recommendations quite useful, with 44% finding them very useful (see Figure 4).

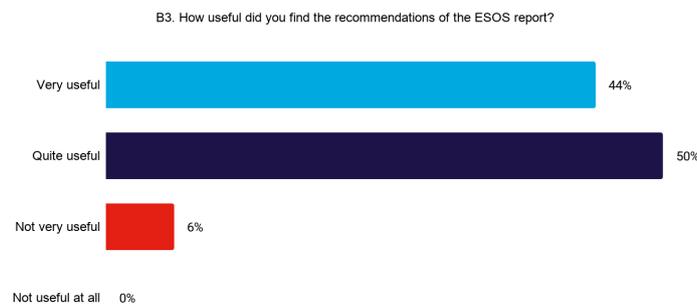
**Figure 3 and 4. Bar charts showing the usefulness of ESOS report recommendations and the extent of recommendation implementation.**

Figure 3.



Base: All respondents that had access to the recommendations from the ESOS report (82)

Figure 4.



Base: All respondents that had access to the recommendations from the ESOS report (82)

At one end of the spectrum there are some businesses with very low ESOS engagement, who do not meaningfully use ESOS to drive action internally. Businesses that are likely to have lower engagement demonstrate some, or all of the following, and the more barriers there are, the lower the engagement:

- **Energy policy is not seen as a business priority by the board**

This can be the result of energy representing a small expense for the business, or there is little perceived business benefit by acting on energy (e.g. cost reduction or winning work/clients)

*“We always sit on a lot of money to protect ourselves. Until it becomes a requirement it is not seen as important. When we put forward any new ideas the question is always - why do we need to do this now? Can this wait? What is the benefit to members?”*

Business participant

- **The business has a short term focus** e.g. it may not see itself as surviving over the next five years or board members with a short tenure lack motivation for long term vision and investment
- **The business is experiencing budget constraints** and/or business downsizing or not experiencing revenue growth - leading to less business critical operations, such as energy, to be deprioritised

*“Just because an organisation finds an energy saving opportunity, it doesn’t mean they will do it, for example, if the business is losing money or can provide better value in other areas.”* Business participant

- **The business has a perception that there isn’t much it can feasibly do** to meaningfully improve energy efficiency (this sentiment is particularly prevalent for office based businesses that commercially lease their assets)
- **The business has a well-developed sustainability/Net Zero emissions strategy** with planned investment in GHG emission reductions, which has been created independently of ESOS. In this instance, ESOS assessments are not seen as being able to add new or useful information, over and above their internal expertise on the policy.

*“We already have higher ambitions and goals. ESOS is lower level expectations. We overachieve what ESOS is expecting. It is just a tick box rather than a challenge to complete”* Business participant

However, at the other end of the spectrum, there are businesses with much higher levels of engagement with ESOS. These businesses have positive previous experience with ESOS:

- **They have experienced large cost savings as a result of implementing previous ESOS recommendations**, and developed a warmth towards the usefulness of the assessment
- **They have used ESOS as a strategic opportunity to shape their broader sustainability/Net Zero strategy**, through going above and beyond the typical ESOS scope. In addition, this has been driven by investors over the last three years making serious demands about the energy and emissions performance of businesses. Prior to this, some businesses have been focused on energy efficiency from a cost perspective, but for much of the last 10 years it has been about compliance for many, with increasing regulation since the CRC Energy Efficiency Scheme.

A further factor when analysing businesses engagement with ESOS is their maturity of their energy and/or sustainability policies. The diagram below illustrates this focus on sustainability, or lack of, interplays with ESOS. <sup>29</sup>

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<sup>29</sup>There is a wider consultation regarding ESOS and the focus of this report is on Net Zero in ESOS. However, these issues were raised spontaneously by participants as areas which need to be considered to ensure a Net Zero element to ESOS is a success

Business Type	ESOS Engagement
<b>High engagement with ESOS currently, limited net zero strategy</b>	<i>“Through doing ESOS, we have found ways to reduce energy consumption.”</i>
<b>High engagement with ESOS currently, mature net zero strategy</b>	<i>“The ESOS scheme being there, for us to justify the creation of an energy management team. We have set out a net zero target, and in doing this, there was an exercise of practicality seeing if that was feasible, and which parts of our operations were identified as carbon intensive, and that directly linked back to the dataset created for ESOS Phase 2”.</i>
<b>Low engagement with ESOS currently, limited net zero strategy</b>	<i>“Standards and energy are not pushed too much. It’s not at the forefront of our business. We’re looking to save money. We are a business that likes short-term battles. There’s a lack of support to take on this task (net zero) and it’s a lot of money. For us it is all about short-term gains.”</i>
<b>Low engagement with ESOS currently, mature net zero strategy</b>	<i>“We use ESOS more as a tick box exercise for compliance as we are streets ahead of this in terms of our in-house strategy.”</i>

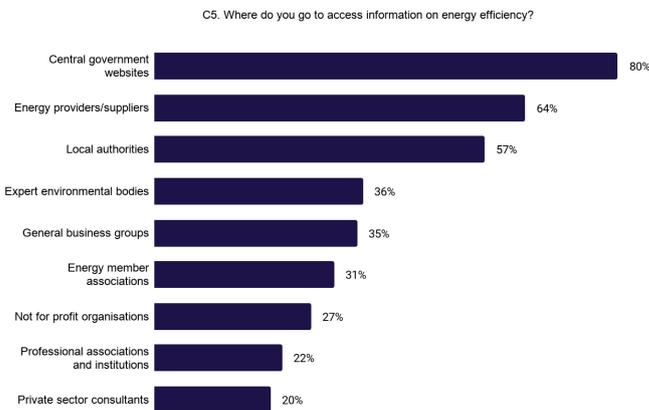
- High Engagement with ESOS currently and a limited Net Zero strategy:** for these businesses, there is often low business knowledge of energy spend or a very immature energy policy. ESOS has served as a mechanism to raise awareness of measures that the business can take to reduce their energy spend
- High Engagement with ESOS currently and a mature Net Zero strategy:** for these businesses, ESOS is viewed as a strategic opportunity to consider not only their energy usage, but also their broader GHG/sustainability strategy in greater detail. These ESOS assessments often go above and beyond the typical ESOS scope, and consider not only energy efficiency recommendations, but also what the business can feasibly do to reduce their carbon impact, the cost of this, how they could do this, and where the limits are on what they can do. This, combined with a broader sustainability strategy and board level support, leads to a more receptive business to ESOS recommendations
- Low Engagement with ESOS currently and a limited Net Zero strategy:** these businesses typically have low buy-in from their boards in relation to energy policy. Energy policy is often not seen as a business priority and there are competing demands within the business for budget/time. For these businesses, ESOS is viewed as a compliance task - some of the quick win measures may be implemented, but more complex ones are often not considered
- Low Engagement with ESOS currently and a mature Net Zero strategy:** these businesses have a developed sustainability strategy in place, with buy-in from the senior management. These organisations tend to have strong in-house expertise in this area. As their strategy is mature, the energy managers typically view ESOS as not telling them anything that they do not already know. Therefore, as a result of this attitude, they will seek out lower cost ESOS assessments, to minimise unnecessary spend.

## Sources of business guidance

When looking for information on energy efficiency and Net Zero, the majority of businesses look to central government websites. They are somewhat more likely to use expert environmental bodies or local authorities for information on energy efficiency than as sources of information on Net Zero. Fewer respondents overall were inclined to use private sector consultants when searching for information. In the qualitative interviews, it emerged that energy providers and business networking events might be used as sources for advice.

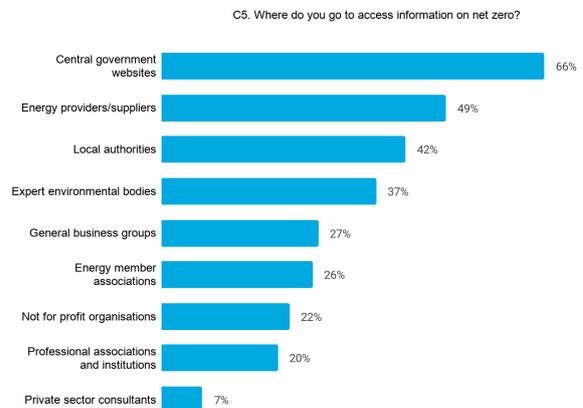
Figure 5 and 6 - Figure 5 is a bar chart showing where businesses go to access information on energy efficiency. Figure 6 is a bar chart showing where do businesses go to access information on Net Zero?

Figure 5.



Base: All respondents (100)

Figure 6.



Base: All respondents (100)

## Summary

Across businesses, there is a real range of engagement with sustainability/Net Zero issues, often driven by the extent to which business sees benefits from engaging with this area, from reducing cost, winning cost and shaping brand image. When thinking at a high level about ESOS, energy experts, business and assessors believe that although ESOS has significant benefits, there are issues with the scheme that they believe need to be addressed. There is a mix in terms of the perceived usefulness of ESOS, ranging from some of our audience viewing ESOS as raising awareness of energy efficiency measures that wouldn't have been implemented otherwise, to ESOS is seen as a compliance activity with few actionable recommendations.

Our analysis has demonstrated there are four quadrants of business which determine how businesses engage with ESOS:

- High Engagement with ESOS currently and a limited Net Zero strategy
- High Engagement with ESOS currently and a mature Net Zero strategy
- Low Engagement with ESOS currently and a limited Net Zero strategy
- Low Engagement with ESOS currently and a mature Net Zero strategy

These findings are aligned with the Post Implementation Review of the scheme undertaken by BEIS and published in 2020.<sup>30</sup> While the focus of this study is on Net Zero in ESOS rather than ESOS itself, any future development of ESOS in terms of Net Zero should take into account these wider views.

# Perceptions of incorporating Net Zero in ESOS

## Introduction

This section of the report considers the response to the theoretical incorporation of Net Zero in ESOS. It considers perceptions of the positives and the potential operational challenges that need to be addressed in order for the inclusion of a Net Zero element in ESOS to be a success. It identifies the usefulness of elements that could be included potentially in a Net Zero element of an ESOS audit. This section is structured as follows:

- Overall support for including Net Zero in ESOS
- Benefits of including Net Zero in ESOS
- Challenges of including Net Zero in ESOS
- Summary

## Overall support for including Net Zero in ESOS

At a theoretical level, there is broad support across businesses, assessors and national stakeholders for a Net Zero element to be added to ESOS and agreement that adding a Net Zero element to an ESOS assessment makes sense.

A minority disagree that incorporating a Net Zero element to ESOS makes sense. They raised concerns over how this will interact with the Streamlined Energy and Carbon Reporting legislation (SECR)<sup>31</sup>. Some national stakeholders believe SECR would be a more intuitive mechanism to use for the pursuit of Net Zero related goals within business, and that there is a specific issue arising for organisations who need to comply with both ESOS and SECR in terms of the risk of duplication of work. There is perceived to be a small risk that if the design

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<sup>30</sup> [Energy audits and reporting research, including the Energy Savings Opportunity Scheme - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/research-data-and-analysis/energy-audits-and-reporting-research-including-the-energy-savings-opportunity-scheme)

<sup>31</sup> <https://www.legislation.gov.uk/ukxi/2018/1155/contents/made>

of the Net Zero element to ESOS is not carefully considered, then there could be an overlap between SECR and ESOS, which could add additional burdens on businesses. As SECR is annual, there is a view from some respondents that it could be a more appropriate means of generating positive change, compared with ESOS which is undertaken every four years. While both requirements have different purposes, some alignment might be appropriate to simplify the landscape for businesses.

However, the majority of national stakeholders, assessors, and businesses believe that a Net Zero element to ESOS and SECR could work together, and that it would encourage a shift towards a Net Zero. In terms of the risk of duplication of work, the majority consider that this could be avoided, with ESOS acting as a forward looking, strategic focus assessment presenting forward looking recommendations on actions the business can take to get to Net Zero, whereas SECR acts as a historical review of carbon emissions.

*“ESOS could be used, people are used to it now. But with SECR and ESOS it is double work, lining them up would make more sense.” Assessor*

## Benefits of including a Net Zero element in ESOS

The main benefits of including a Net Zero element in ESOS were as follows:

- **It is seen as a logical extension of ESOS** - the addition of a Net Zero element to ESOS is viewed as making intuitive sense by the majority of those who participated in this research. Energy efficiency will become less important in the road to Net Zero, and absolute reduction of carbon emissions from large businesses will become the key focus.

*“I would welcome it. It’s a logical extension to the assessments. kWh only deals with one dimension of the energy equation. Currently, ESOS doesn’t take into account if businesses are making good Net Zero options.” Assessor*

- **It could help raise awareness of the Net Zero focused changes a business can pursue** - there is a recognition that ESOS could play a key role in raising awareness of cost effective and feasible investments or adjustments a business can make to pursue Net Zero changes. Two thirds of businesses who responded to the quantitative survey welcomed the increased support with identifying more cost savings and 58% valued the ability to get expert advice on Net Zero

*“It’s about what matters for each organisation. It’s selling why it’s a positive factor to have in there, the benefits for the organisation going forward. Why Net Zero isn’t just good for the planet, why it’s good for you as well” Business participant*

- **It is a feasible and realistic change to the ESOS scope** - some businesses are completing ESOS assessments that already have a Net Zero focus, so there is evidence and examples to draw on of what some businesses are doing in this regard at the moment
- **It is an element that assessors are confident delivering** - the assessors and the ESOS assessor register representatives that were engaged with for this research are

confident that the vast majority of assessors either have the skill sets to deliver this scheme, or would be able to do so with effective training

*"I'm doing quite joined up assessments already, but some assessors will need re-training and revalidation and will need to research more about their recommendations."*  
Assessor

- **It adds to the business case for change when energy related investments to the board** - energy managers working with boards reluctant to invest in either energy efficiency or sustainability initiatives at the moment suggest that the addition of Net Zero related impacts would further their business case when presenting energy investment and spending plans to their board.

## Challenges of including a Net Zero element in ESOS

Although most participants believe that a Net Zero element could enhance ESOS assessments, assessors and businesses hold operational concerns about how a Net Zero element could be successfully incorporated into the ESOS assessment.

Some of these concerns link to the perceived current challenges with ESOS, however, there are also new challenges that arise from making recommendations focused on Net Zero. The main operational challenges raised by businesses relate to the delivery of ESOS with a Net Zero element, as well as the implementation of the recommendations:

- **Price or cost of the assessment** - if the cost of the assessment increases, some energy managers are concerned that cost sensitive boards will seek out cheap Net Zero ESOS audits, and replicating the issues faced with ESOS audits currently. This was also identified as a challenge by almost half (46%) of the businesses surveyed in the quantitative research.

*"It feels much bigger than an ESOS audit so I assume that it would be more expensive, because it would be more thorough and wider"* Business

- **Quality of the recommendations** - some businesses have stated that they have received generic recommendations in the past. They have concerns that as ESOS becomes more technical or complicated with the introduction of a Net Zero element, there is a risk that the recommendations produced could be generic or less tailored to the business, while almost two thirds (64%) of business who responded to the quantitative survey were concerned about a lack of expertise within their organisation to implement the recommendations relating to Net Zero.

The main specific challenges raised with regards to ESOS assessors making recommendations on Net Zero are to do with the longer payback periods of these investments, and the extent to which commercial leasing of buildings restricts what changes business can make. It is important to note here that this research was focussed on exploring which net zero

elements could be incorporated into the ESOS audit, so some of the challenges mentioned below are speculative.

- **Recommendations with longer payback periods will lead to board resistance** - with Net Zero measures anticipated to have longer payback periods, the energy managers felt that they would face board resistance around implementation  
*"The paybacks (associated with Net Zero focused measures) are 7-20 years, so people don't see the benefit against the cost of doing nothing"* Assessor
- **Commercial renting of buildings restricts the ability to make some changes** - As businesses often lease the buildings they use, they are unable, or it is more complicated to make adjustments to buildings compared with owning the buildings. As Net Zero measures will potentially require adjustments to buildings, commercial renting could affect the feasibility of implementing some recommendations.  
*"Many clients lease properties so they are not willing to invest in energy improvements because they think it's the landlords' responsibility"* Assessor  
*"I mentioned this issue to the ESOS auditor. We work in tenanted buildings. We have environmental conversations but the landlords won't take it up. It's a real problem. We can't get solar panels."* Business participant

From the perspective of assessors, the key operational challenges they have focus on skills and definition of Net Zero:

- **Assessor skills gaps** - assessors suggest there is a real differential in quality between the higher and lower skilled assessors. Some assessors have experience of conducting ESOS with a Net Zero element. This formalises the types of services that they are offering their clients as part of an ESOS assessment currently. However, there are assessors at the lower quality end of the spectrum who would require significant re-training to effectively deliver a Net Zero element to ESOS. Assessors believe that the key skills assessors would need might include technical understanding of building fabric systems, ability to evaluate architectural plans and carbon calculation modelling.  
*"There would be a shortage in people who could deliver it competently right now, but given some time I'm sure other people would be able to do the training."* Assessor
- **Definition of Net Zero** - assessors believe that a clear definition of Net Zero is required and believe that BEIS needs to define what they want this to look like to ensure standardisation. There would then need to be clear training on what the core components are of a Net Zero element to ESOS, so that there is standardisation in what the assessors should be doing  
*"It would have to be clear and understood, as it is not clearly defined"* Assessor
- **Managing competing aims of energy efficiency and Net Zero** - ESOS and Net Zero are looking at very different things, the former is energy efficiency and the latter is carbon reduction, so it adds to the time and cost element to deliver Net Zero effectively. It may be that given this, Net Zero might need to be woven into how ESOS works as a

whole, so that the ROI mindset is diluted. Energy efficiency and Net Zero ideally should not be viewed as in competition with each other.

*“It’s two very different mindsets. ESOS is about energy consumption - assets and vehicles. You analyse the consumption. With Net Zero the scope is larger. You look at all the carbon aspects of a building. ESOS is about ROI and Net Zero is not about payback in time but it is the pathway to minimise carbon.” Assessor*

## Summary

At an overall level, there are high levels of theoretical support for the inclusion of a Net Zero element to ESOS, but operational concerns around how to successfully deliver this. The theoretical support comes from the belief that this is a logical extension of ESOS, it will raise awareness of important measures that businesses may have previously been unaware of, it adds to energy managers business case when going to board and assessors feel confident that this is both feasible and deliverable. The operational concerns from business stem from the potential for a relatively longer payback period for Net Zero measures in contrast with energy efficiency focused measures, concerns over the implications of commercial leasing of property around providing a disincentive to make large scale changes. Assessors are generally confident that they can deliver this, although there is a belief that BEIS needs to be clear in their definition of Net Zero, and clear in what skills and knowledge of technologies assessors require in order to conduct an effective audit.

# A Net Zero ESOS audit: factors for inclusion

## Introduction

This section of the report considers what might be included in a Net Zero ESOS audit in terms of both core elements and voluntary extensions. It outlines the potential benefits and challenges that need to be considered. Additionally, it rates the potential inclusions in terms of overall acceptance by businesses and likelihood to implement the recommendations. It considers the structure and design of a Net Zero ESOS audit, and the impact on both assessors and the assessment market and on businesses and their likelihood to engage. This section is structured as follows:

- Specific content to include in a Net Zero audit
- Voluntary extensions to the audit
- Summary

## Specific content to include in a Net Zero audit

Across all our interviews (national stakeholder, assessor and businesses) reactions to a set of pre-agreed potential additions to an ESOS Net Zero audit were explored. There was a focus on encouraging spontaneous discussion around additional measures that might be incorporated into Net Zero ESOS. The core inclusion content for advice and recommendations explored included:

- Sources of energy (solar, wind, hydrogen etc)
- Renewable technologies (district heating, biomass heating etc) and electrification (heat pumps)
- Energy efficiency measures (e.g. LED lighting etc)
- Fleet management (e.g. switch/phase over to electric vehicles including necessary charging/refuelling infrastructure)
- Fuel used by other transport (company aircraft, trains and vessels)
- Staff travel for work (e.g. more video conferences, less business travel by air etc.)
- Investment in Net Zero electricity (renewable, load-shifting, smart technologies)
- Scope for decarbonisation of industrial processes
- Behaviour change
- Offsetting

Additionally, in our discussions, one key additional element that emerged as something that a Net Zero element to ESOS must consider is building fabric, so this element will be explored in this section.

In terms of the core content above, all measures, with the exception of offsetting, were viewed as elements that are feasible to be included, and would be expected to be incorporated in a Net Zero element of an ESOS audit. However, within this, there are varying levels of perceived acceptance by businesses and likelihood to act on ESOS recommendations in these areas in the short to medium term.

Some elements are not considered to vary from what is expected in an ESOS audit (e.g. energy efficiency measures). However, there is a general concern over whether some of the other measures could be implemented in the short and medium terms, as these could be highly expensive or the technology is not yet viable. This could therefore present a challenge in terms of achieving board sign-off and implementation.

## Core elements of Net Zero for inclusion in ESOS

The paragraphs below highlight the main benefits and challenges of including specific core elements of Net Zero in ESOS from the perspective of businesses and assessors. These core elements include:

- Sources of energy
- Renewable technologies
- Energy efficiency measures
- Fleet management
- Investment in Net Zero
- Scope for decarbonisation in industrial processes
- Offsetting
- Behavioural change
- A focus on the building fabric

### Source of energy

Sources of energy could include solar, wind and hydrogen energy.

*Positive aspects for businesses and assessors:* assessors have experience of delivering recommendations such as this, and would not be a significant stretch to the existing report. This is the type of recommendation that is expected to be included within a Net Zero element to ESOS. For businesses in particular, energy is an easy to understand measure, with established markets in place to deliver changes.

*Challenges for businesses and assessors:* there is an awareness that recommendations need to be future-proofed, given changes in hydrogen technology. For businesses, there is also a risk that a business may simply switch to a “green” tariff, and not take more costly, but longer term, effective measures to reduce their emissions and energy demand.

*“Some organisations think they can just buy a green tariff or offset and the problem is solved.”*  
Assessor

Also, there is a concern that if a company leases their buildings commercially, there is a limit to what they can feasibly do in this area, for example, in the installation of solar electricity panels.

## Renewable technologies

Renewable technologies could include heat pumps, district heating, and biomass heating.

*Positive aspects for businesses:* renewable technologies are considered highly relevant and appropriate for businesses looking at decarbonisation.

*Challenges for businesses and assessors:* there is a recognition that investments in this area need to be future-proofed, with the example of biomass heating given as an example of a technology that was previously encouraged and which is now viewed as something to be considered carefully given potential issues around sustainability of the biomass and air quality. Businesses want investments to be future-proofed to avoid wasted spend, and assessors want to ensure that high quality forward looking measures are made across the assessor community, to ensure ESOS is viewed as a credible and useful scheme.

*"Confidence took a knock when people were told to buy biomass and were paying extra for it, and then were told it isn't low carbon or renewable."* Assessor

This type of measure, although effective, is only seen as beneficial if the fabric of the building is sound, so this can't be the sole measure taken by businesses with regards to Net Zero

Also, for businesses, there was a view that this might be something adopted later rather than sooner due to the perceived expense.

## Energy efficiency measures

Research participants felt that energy efficiency measures should still be included within a net zero element of ESOS. Energy efficiency measures could include LED lighting, lighting controls, and staff education on energy efficiency which appear to be a common and popular elements of existing ESOS reports.

*Positives for businesses and assessors:* a focus on energy efficiency measures is regarded as a prerequisite. Net Zero focused changes need to work in conjunction with operational changes to improve energy efficiency. It is what ESOS covers already so energy efficiency is a known entity, but still valuable to include. Further, it provides the businesses quick and relatively easy gains. The combination of the environmental and cost benefit is seen to be a win-win.

*Challenges for businesses and assessors:* although there is a need to focus on operational changes to improve energy efficiency as well as have Net Zero focused investments, there is a risk that some businesses may be conflicted by the appeal of short-term energy saving compared with longer term carbon reduction, and pursue the lower cost, short term energy saving measures.

## Fleet management

Fleet management could include a switch or phase over to electric vehicles including necessary charging/refuelling infrastructure.

*Positives for businesses and assessors:* this element is already part of ESOS, so this is expected and familiar, and fleet management is still an important issue for business to focus on. For assessors, there is an opportunity to provide consultancy (e.g. charge points) to businesses that are not being proactive. For businesses, the switchover to electric vehicles is already enshrined in legislation and many businesses are being proactive in this area and transitioning their fleet to electric vehicles. Guidance within ESOS in terms of: when is the best time to do this; options for HGVs; and how to provide infrastructure to support electrical commercial fleets would all be welcomed by business.

*“We have a small building footprint, but a large vehicle fleet. It would be useful to understand the transition, timeline and costs and benefits of doing that.”* Business participant

*Challenges for assessors:* some assessors suggested that more businesses than might be expected subcontract their fleet, which means that they will not be in a position to make these changes directly. Again, there is a need to consider how to future proof these recommendations against longer term changes and any potential conflicts (e.g. electric vs hydrogen vehicles).

### **Fuel used by other transport (company aircraft, trains and vessels)**

None of the organisations who participated in this research employed other forms of transport (e.g. company planes, trains or boats) so the report does not provide comment on this element.

### **Investment in Net Zero**

Investment in Net Zero could include load-shifting and investment in smart technologies.

*Positives for businesses and assessors:* this is perceived as increasingly relevant and appropriate if recommendations are applicable to the business and easily actionable. Engagement with load-shifting and the grid is seen as one of the big changes companies can make in the pursuit of Net Zero emissions.

*Challenges for businesses and assessors:* this is related to technologies and currently many organisations are unaware of how they could benefit so a degree of education is required for some businesses, to ensure uptake and the ability to sell this measure to boards. Consideration needs to be given to the fact that this may not apply to all businesses e.g. those that are office based.

*“It was stressful getting it to the board level because it cost x amount. Getting the message across is a positive thing is important, which can be done. But giving insight as to why.”*  
Business

### **Scope for decarbonisation of industrial processes**

*Positives for businesses and assessors:* this is seen to be a logical and necessary inclusion in a Net Zero component to ESOS. Even if technological solutions do not yet exist or are not

viable, it is still helpful for organisations to be made aware of the scope for future decarbonisation.

*Challenges for businesses and assessors:* for businesses, the cost of implementation could be prohibitively expensive. For assessors, there could be an impact on assessors in terms of skills and the time and cost of assessment.

## **Offsetting**

*Positives for Government and businesses:* if ESOS raises awareness of high quality offsetting schemes for emissions that cannot be removed in the short /medium term, in conjunction with other Net Zero focused measures, this could contribute to a reduction in business' carbon emissions that are more difficult to reduce.

*Challenges: for Government and assessors:* there is overwhelming scepticism and concern over the risks of incorporating offsetting recommendations. A key issue relates to whether business will delay more costly investments or more challenging fixes. Ultimately, some may see this as beneficial changes to their business, and pursue offsetting as an easy quick fix, and not change energy usage. There is a risk that firms will pursue this due to the greater perceived reputational benefits to the exclusion of other implementations, resulting in potential "green-washing". In essence, the perception is that to have a real Net Zero commitment, ESOS should discourage offsetting.

*"Money invested in carbon offsetting should be used to improve infrastructure in the economy"*  
Assessor

Even if the ESOS scheme solely raised awareness of high quality offsetting schemes, there are concerns about how this would need to be very carefully positioned by assessors. The lack of mechanism in place within ESOS to discourage companies from solely pursuing offsetting based risks concerns that this may be abused by some businesses.

## **Behavioural change**

This element was explored mostly in relation to staff commuting, and working from home in the current pandemic; although behaviour change can have wider applicability in businesses.

*Positives for businesses and assessors:* in general, there is a view that it makes sense to include behavioural change because it is a key part of achieving Net Zero. For businesses, staff travel for business has already been impacted by Covid-19 to this end and it may continue. Some organisations were looking at this already pre-Covid-19 but it has been accelerated by the pandemic.

*Challenges for businesses and assessors:* it is not clear cut or easy to measure behavioural change or implement it, so this could have considerable impact on the cost of and time the assessment takes. Implementation affects not just staff and their organisation but potentially clients, customers and stakeholders. For assessors, consideration needs to be given to these recommendations, to ensure that they are relevant to the business. Assessors believe that they can deliver generic and/or more standard recommendations for behaviour change in this

space. However, attempting to be more ambitious in the type of recommendations suggested (e. g. work from home plans or travel between offices and sites) starts to become cost and time intensive as there is a need to work through any unintended consequences of the recommendations.

### Focus on building fabric

*Positives for assessors:* a focus on building fabric is seen as a genuine extension of ESOS and allows for a Net Zero focus above and beyond what ESOS currently considers. Mention was made of the need to look at systems in the building, insulation efficiencies and carbon from refurbishments and fit-outs. Building fabric is seen to be fundamental to a Net Zero audit and many view it as the start point: “fabric first”. Previously, in ESOS, focusing on building fabric had often been discounted due to the cost prohibitive nature of the potential changes required. It would need to be considered in conjunction with the other measures proposed to ensure the maximum environmental benefits of deploying each measure.

*Challenges for businesses:* a key challenge here is that businesses often lease the buildings that they operate in commercially. This means that they believe that they are limited in what they can do to change the building, or it is more complicated to do so, or as they do not plan on being in the building for the long term, there is limited incentive to make changes to the building.

The table below (Table 3) rates the elements in terms of how acceptable each one is for inclusion in an ESOS Net Zero and also the potential for businesses to implement within the short-medium term.

**Table 3 - Core Element Acceptability and Likelihood to include in short-medium term**

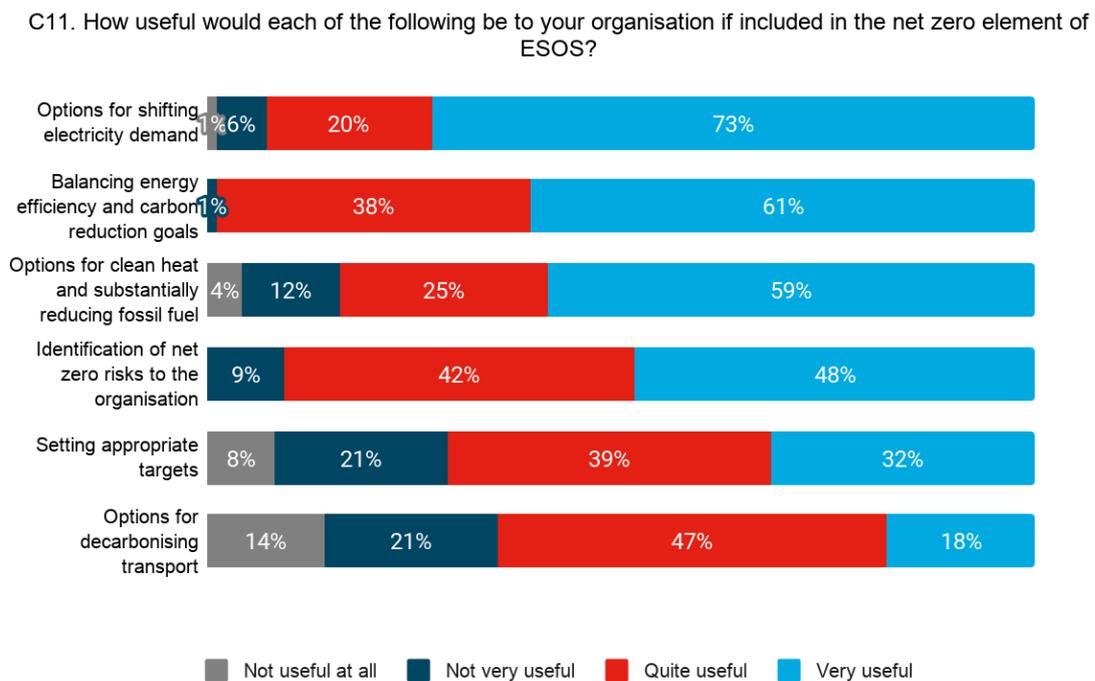
Core Element	Acceptance for inclusion	Likelihood to implement in short-medium term
Source of energy	High	Medium
Renewable technologies	High	Low
Energy efficiency measures	High	High
Fleet management	High	Medium
Fuel used by other transport	N/A	N/A
Investment in Net Zero electricity	High	Low to Medium

Core Element	Acceptance for inclusion	Likelihood to implement in short-medium term
<b>Scope for decarbonisation of industrial processes</b>	High	Low
<b>Offsetting</b>	Low	Medium*
<b>Behaviour change</b>	Medium	Medium
<b>Building fabric</b>	Medium	Medium

\*Not necessarily a desirable outcome and polarising as some businesses like it as a quick and easy solution and others regard it as potentially 'greenwashing'.

In the quantitative element of this research, there was strong support for shifting electricity demand, balancing energy efficiency and carbon reduction goals and reducing the reliance on fossil fuels. While two thirds of those interviewed thought that option for decarbonising transport would be useful, this was the option that garnered the lowest level of agreement amongst respondents.

**Figure 7. Stacked bar chart showing the usefulness of potential elements to include in a Net Zero element in an ESOS audit.**



Base: All respondents (100)

## Voluntary extensions to the audit

Beyond the core elements to an ESOS Net Zero audit, the research explored whether there is value in adding in a voluntary extension to ESOS that could include content such as:

- Staff behaviour, for example commuting
- Supply chain
- Waste, resource management & adaptation to future impacts of climate change.

There was exploration of whether these elements of ESOS should be voluntary or not, alongside potential implications of this and have presented responses to this below.

### Reactions to the concept of a voluntary element

There is a recognition that currently there are a number of ESOS reports which go above and beyond the typical report, so a voluntary extension already exists in an informal manner. Also, there is a degree of concern that if these elements are voluntary, then there may be limited participation by businesses and especially those that have no or limited sustainability strategies. Further, voluntary extensions are perceived to add an additional degree of complexity and time to a Net Zero ESOS audit, over and above the impact of the core inclusions. Business energy managers will need to be able to justify the additional measures internally and so will require robust evidence to do so.

### Reactions to the specific voluntary measures

#### **Staff commuting**

Staff commuting is an area at which some organisations were already considering with an energy efficiency lens pre-Covid (introducing Cycle to Work schemes, encouraging use of a company bus etc.). Additionally, as a result of Covid, staff commuting and working from home (WFH) is now a far more pertinent issue, with companies considering what their WFH will be going forward, with lots of factors to weigh up, and energy efficiency often not playing a huge role in these decisions. As a result, many businesses and assessors do not view this topic as something for ESOS to consider, as staff commuting and WFH preferences are so influenced by other considerations. Others see this is a grey area because it relates to influencing staff behaviour out of work hours, and it is questionable whether the organisation should have this role and responsibility. Overall, it is more appropriate to provide advice on what might be put in place to facilitate behaviour change rather than prescribing actions to staff in this area (which might also include the energy use and emissions of staff working from home). Some businesses may be thinking about extending their sustainability programmes in this regard. This may be particularly relevant if the organisation is making a financial contribution to increased energy bills at its employees' homes as a result of Covid-19 and continued working from home.

*“Yes, changing staff behaviour around commuting is important. Some companies already have cycle to work schemes, staff minibuses and joint commuting. But a lot of companies may not be thinking about this.”* Business participant

### **Supply chain impact and supply chain emissions**

The calculation of emissions from an organisation’s supply chain is thought to be a very challenging exercise and beyond the feasible scope of ESOS. While a number of businesses are collecting information and disclosing Scope 3 emissions, there is a question in terms of how far this process can go within ESOS, without accruing extensive costs. Calculations of total Scope 3 emissions are seen to be complicated, expensive and an emerging field, so there is a degree of the unknown. However, there is a scale in terms of how Scope 3 emissions are presented to businesses within ESOS, and businesses could be presented with what the sources of their Scope 3 emissions are, and how they can take steps to reduce these. Thus, businesses, assessors and national stakeholders believe that there is some value in ESOS raising awareness of, at a minimum, the presence of the businesses’ supply chain emissions, and this could be extended to considerations for procurement/buying to add a sustainability lens to their supply chain.

*“Getting into the supply chain, products you produce and impacts produced down the line, employee commute... it becomes quite a challenging area. Something that needs a bit of consideration.”* Assessor

### **Waste, resource use and adaptation to future impacts of climate change**

This is an area that could be included within a Net Zero element to ESOS, and is thought to be a feasible and useful inclusion within ESOS. The businesses thought that adaptations to future impacts of climate change should not just be limited to a voluntary section, and recommendations should attempt to future proof against measures that will need to be taken in the future.

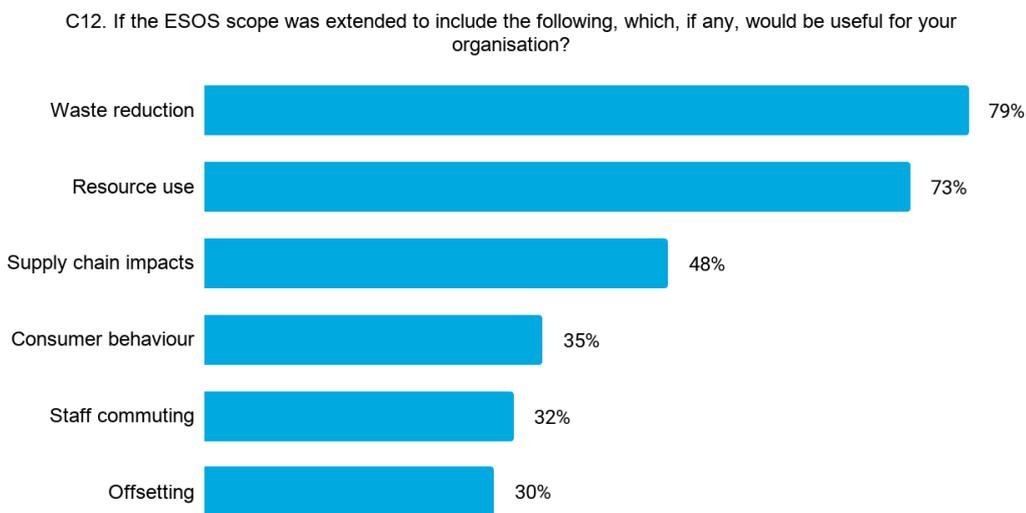
The table below categorises each voluntary inclusion by acceptance and likelihood to implement.

**Table 4 - Voluntary inclusions and acceptance and likelihood to implement**

Voluntary inclusions	Acceptance for inclusion	Likelihood to implement in short-medium term
<b>Staff commuting</b>	Medium to Low	Medium to Low
<b>Focus on supply chain</b>	Medium to High	Low-Medium (depending on what the supply chain recommendations are)
<b>Waste, resource use and adaptation to future impacts of climate change</b>	Medium	Medium

Our quantitative research demonstrates that at an overall level, there is support for the inclusion of a waste reduction and resource use focus to a voluntary element to ESOS, however, there is a significant drop off in support for supply chain impacts, consumer behaviour, staff commuting and offsetting (see figure 8). Widening the scope of ESOS to include waste reduction and resource use were stated as useful options to include in a Net Zero element of ESOS by over seven in 10 respondents, while only a third of respondents were interested in including consumer behaviour, staff community and offsetting within the scope of ESOS.

**Figure 8. Bar chart showing the potential elements to include in the Net Zero element of ESOS audit.**



Base: All respondents (100)

## Summary

Overall, with the exception of offsetting, the proposed elements of Net Zero section to ESOS are all broadly viewed as both feasible and relevant. The main overall challenges to the inclusion of these proposed elements is making sure that recommendations are future proofed, that assessor skill sets can deliver to these elements and the likelihood that businesses will implement them. With regards to voluntary extensions, overall, there was support for the idea of encouraging a push to pursue additional voluntary extensions of ESOS, however, there was a degree of scepticism in terms of how many businesses would choose to opt in.

# Net Zero in ESOS audit: structure and design

## Introduction

This section of the report focuses on the structure and design of the ESOS report, given the incorporation of a Net Zero element. This section of the report explored:

- Net Zero and ESOS reporting structure
- Benchmarking
- Net Zero ESOS and ISO 50001
- Summary

## Net Zero and ESOS reporting structure

### Incorporating Net Zero in ESOS

The overall opinion is that if Net Zero is incorporated into ESOS assessments then it would make sense for it to sit wholly within the ESOS structure for consistency and a sense of homogeneity. This research considered whether the Net Zero element of ESOS should sit within one combined report focused on both energy efficiency and Net Zero measures, or whether there should be a separate ESOS report for the Net Zero element and the energy efficiency element. The overwhelming perspective was that one combined ESOS report would be most desirable. This was felt to be more intuitive and helpful as it is regarded as more convenient for organisations to have all of the detail in one place.

*“It’s useful to bring it all together so that it makes it more simple...any way to simplify, the better”* Assessor

Moreover, a further benefit of a combined report is that it is thought to be more appropriate for highlighting the conflicts between energy efficiencies and carbon reduction recommendations, as there can be “side-by-side” comparisons. There is a general wish for options on different recommendations (e.g. good, better, best or lower cost vs greater investment) and a clear pathway to achieving them.

*“There should be a diagram about their Net Zero pathway and their options, how the recommendations contribute to that journey”* Assessor

## Standardised summary

There was a general perception that a standardised summary up front in the report, with consumption since the last audit, and the organisation's compliance, was positive. This was because it was perceived to introduce an element of consistency to the reporting.

*“There is a case to have an easy sort of reporting block - this is where we were in 2019, set our journey again and where we need to be in 2023 when we report out.”* Business participant

## Style of recommendations

Businesses which are less mature in their Net Zero strategies welcome a prescriptive set of recommendations with clear and detailed advice instructing them what to do and how to do it. They tend not to have dedicated energy personnel. Thus, ESOS can be an adjunct to an employee's main role, meaning that they have limited ability to develop their expertise and time to focus on it. As such, a prescriptive approach could be helpful, rather than there being the risk that it will be seen by businesses as a tick-box exercise. In contrast, a more mature organisation with strategies in place and a dedicated in-house energy team, is likely to prefer looser recommendations offering greater flexibility, choice and freedom.

*“Having things spelled out is important but maybe if recommendations and resources for how we can do our own investigation would help as well.”* Business participant

## Benchmarking

Benchmarking appeals to organisations that hold their reputation in high regard, or are already taking actions towards Net Zero. For the former, it provides good rationale and the impetus to persuade less visionary boards to consider the value of taking action towards Net Zero.<sup>32</sup> For benchmarking to have optimum effectiveness it has to be published for full visibility.

*“It would influence the business more if it had a benchmarking aspect, it would sharpen people's attention”* Business participant

*“Benchmarking is always useful, but some companies would not want to share, so it would have to be done at a national level.”* Business participant

## Net Zero ESOS and ISO 50001

The national stakeholder and assessor view is that if ISO 50001 is not the route to compliance, then companies who currently use ISO 50001 will be negatively impacted and that the standard could become redundant. For a number of businesses that use multiple routes to

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<sup>32</sup> Benchmarking was a key element of the CRC Energy Efficiency Scheme. A “league table” was drawn up each year and the data is still available on the Environment Agency website.

ESOS compliance, including ISO 50001, having an extra audit or standard to cover the remaining Net Zero compliance requirements beyond energy efficiency may be preferable. In this way they could enhance the ISO 50001 with such an audit to achieve overall compliance. Otherwise, it would be about getting rid of ISO 50001 as a route to compliance which could be controversial, or perhaps working with ISO or BSI to develop the standard further. Businesses who use ISO 50001 see it as a foundation standard, similar to ISO 45001 for occupational health and safety.

## Summary

Overall, there is a perception that the Net Zero and energy efficiency element to ESOS should be incorporated into the same ESOS report, as opposed to two separate reports. This is seen as a more effective mechanism to call out any conflicts that may exist between energy efficiency and Net Zero focussed recommendations. An up-front standardised summary potentially offers a degree of consistency and the ability for businesses to monitor progression. There is support for the idea of a benchmarking mechanism within ESOS, as this is seen as adding a further reputational motive to act on ESOS recommendations for businesses. For a number of businesses that use multiple routes to ESOS compliance, including ISO 50001, having an extra audit to cover the remaining Net Zero compliance requirements beyond energy efficiency may have appeal.

# Impact of including Net Zero in ESOS on the market

## Introduction

This section of our report looks at the impact of incorporating Net Zero in ESOS from both the assessor and business perspective. It is structured as follows:

- The potential impact on assessors and the assessment market
- Impact on businesses and their likelihood to engage
- Summary

## The potential impact on assessors and the assessment market

The more skilled assessors who are currently adding value to ESOS assessments with a Net Zero element believe that they will not require much upskilling to conduct more advanced Net Zero audits in ESOS. However, there appear to be a number of less skilled, lower quality assessors who reportedly might struggle to qualify or be discouraged and therefore drop out of the market. As such, there was a view that adding a Net Zero element to ESOS has the potential to raise the quality of assessors overall. From our interviews, there were suggestions that the new skills assessors will need to acquire include: carbon reporting and modelling; a deeper engineering or architectural mindset; and broader consultancy competencies.

*“It’s not completely new but having to do a lot of the much harder and deeper calculations.”*  
Assessor

*“It requires a deeper engineering requirement and mindset - harder and more detailed calculations. Some won’t have the skills and may drop out.”* Assessor

*“It’s different assessor skills. You need an appreciation of the building - the technical and the fabric and holistic calculations. It needs an architect or engineering expertise.”* Assessor

## Impact on businesses and their likelihood to engage

Overall, the inclusion of Net Zero into an ESOS report is broadly accepted by businesses as the right way forward and in most cases would either increase engagement with the audit or engagement would remain consistent.

Potential positive impacts on businesses of including Net Zero, which might generate future action, in ESOS include:

- Help with preparing to meet government targets
- Reputational benefits and add value to the business, with the potential to confer competitive advantage
- Stops businesses from investing in short term, out of date technology
- For the less mature businesses, it could start the Net Zero conversation.

*“There is a lot of competition right now to look good with commitments to Net Zero. We want to say we are better than the competition and right now there is a lack of credible way of showing this publicly”* Business participant

*“The reputational impact would influence us. We would make it well known that we’re working to Net Zero versus our competitors.”* Business participant

Potential negative impacts on businesses of including Net Zero in ESOS, which might inhibit future action, include:

- Cost of the assessment
- Increased time of the assessment
- Increased provision of data (some of which they might not have e.g. architectural plans for building fabric)
- Cost of implementing recommendations
- Lack of perceived value if not implementing recommendations currently
- Potential to invest heavily in technologies that may become out of date (e.g. electric vs hydrogen vehicles)
- Increased pressure on less mature businesses.

*“Theoretically it is possible but it’s a very big piece of work. A lot of organisations are not even prepared for ESOS so the added complexity would make it a lot harder”* Assessor

In terms of likely engagement with a Net Zero ESOS audit, this is highly dependent on the type of business in terms of their current engagement with ESOS and the maturity of their carbon and/or Net Zero strategy.

The figure below summarises the likely engagement with a Net Zero ESOS against the business framework identified earlier

**Figure 9: Level of Engagement with a Net Zero ESOS audit by business type**

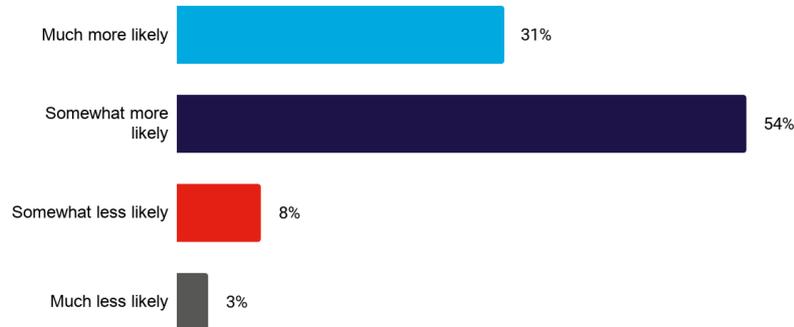
Business type	ESOS engagement	Engagement with recommendations
<b>High engagement with ESOS currently, limited net zero strategy</b>	Likely to continue to engage with ESOS and use it to drive action by providing a comprehensive list of recommendations and actions	More likely to rely on consultants to help deliver the net zero recommendations if affordable

Business type	ESOS engagement	Engagement with recommendations
<p><b>High engagement with ESOS currently, mature net zero strategy</b></p>	<p>to help shape their action plan/strategy and assist them influencing the board</p> <p>Likely to continue to engage with ESOS and use it to reinforce and build their net zero strategy, providing them with inspiration or alternative solutions to those they may have already considered</p>	<p>Less likely to need support in delivery of recommendations as specialisms likely to exist in-house</p>
<p><b>Low engagement with ESOS currently, limited net zero strategy</b></p>	<p>Likely to continue to have low engagement with ESOS if net zero is included due to barriers internally and lack of buy in</p>	<p>Engagement is likely to be with an individual needing help to identify gaps and more likely to want benchmarking elements or clear recommendations to educate and help influence board level buy-in and ultimately drive action</p>
<p><b>Low engagement with ESOS currently, mature net zero strategy</b></p>	<p>Likely to continue to have low engagement with ESOS if net zero is included as they feel they are ahead of this</p>	<p>Likely to continue to use ESOS purely as a compliance tool unless additional value or inspiration can be realised</p>

Despite the challenges, the majority of respondents in this survey (85%) reported that they would be more likely to implement the recommendations from the ESOS audit if there was a Net Zero element included. A minority of 11% responded that they would be less likely to implement the recommendations.

**Figure 10. Bar chart showing the likelihood of organisations implementing the recommendations from an ESOS with a Net Zero element.**

C13a. Would you be more or less likely to act on the recommendations from the ESOS audit if it included a net zero element?

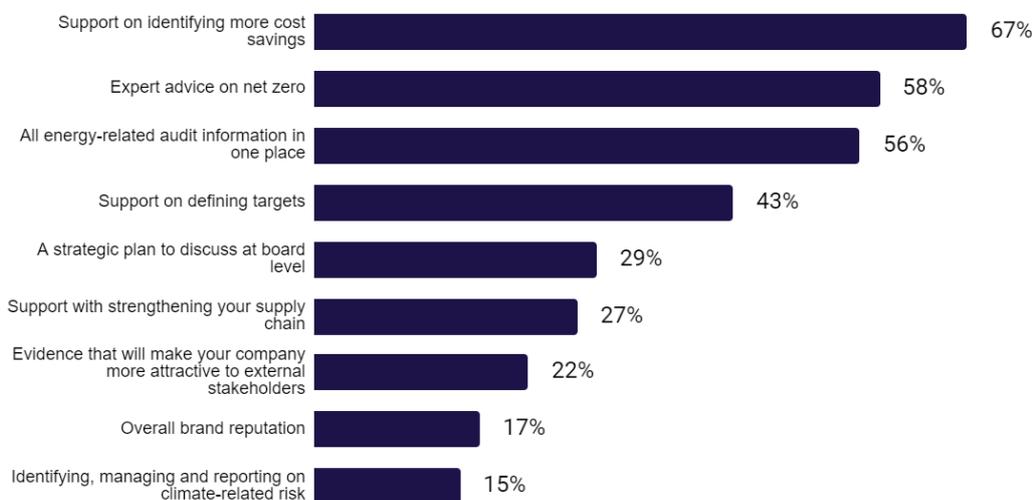


Base: All respondents (100)

The most commonly cited benefit of including a Net Zero element in the current ESOS scheme, cited by two thirds of respondents in the quantitative research, is the increased focus on identifying more cost savings. The benefit of getting expert advice on Net Zero and having all energy-related audit information in one place is seen as valuable by over half respondents. While only 17% of respondents in this survey cited overall brand reputation as a useful benefit, 93% agreed that including an element of benchmarking, allowing organisations to compare themselves with others, would encourage them to act on the recommendations.

**Figure 11. Bar chart showing the benefits of a Net Zero element in ESOS.**

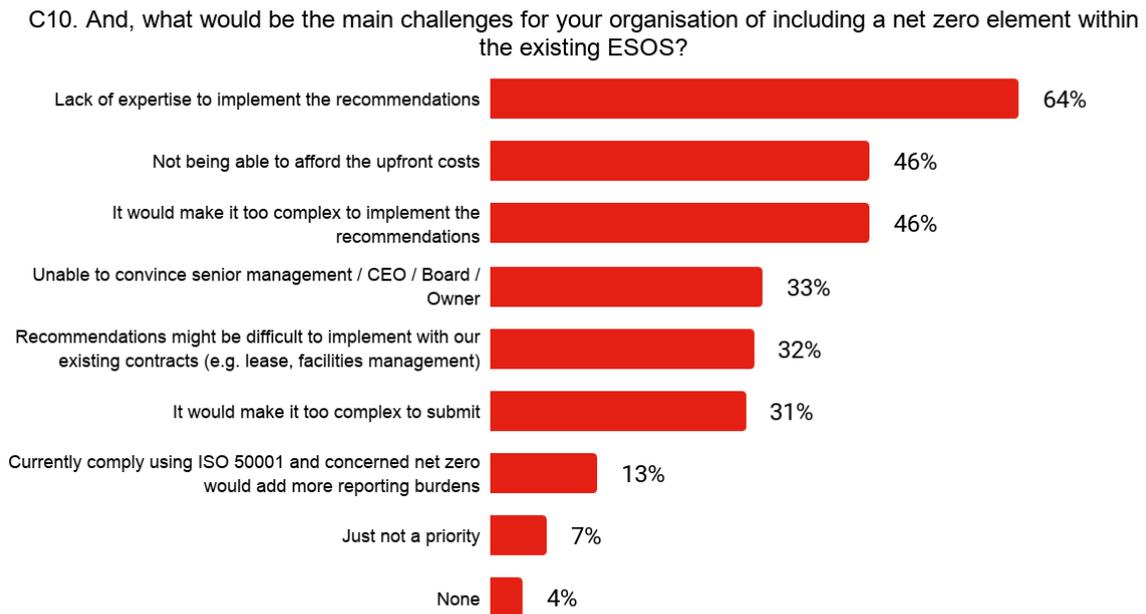
C9. In your view, what would be the main benefits for your organisation of including a net zero element within the existing ESOS?



Base: All respondents (100)

Almost two thirds of respondents report that a lack of expertise to implement the recommendations in a Net Zero element of ESOS would be a potential challenge. Nearly half (46%) were concerned about the upfront costs and the complexity of implementing the recommendations, while a third of respondents believe they would be unable to convince senior executives. Just one in twenty (4%) reported there would be no challenges for their business if there were to be a Net Zero element included in the ESOS scheme.

**Figure 12. Bar chart showing the challenges of a Net Zero element in an ESOS audit.**



Base: All respondents (100)

## Summary

Overall, the impact of a Net Zero element on ESOS for assessors will vary - with some assessors already delivering more complex ESOS assessments. However, some assessors will not have the existing skill set to deliver a Net Zero element to ESOS, and this may lead to some dropping out of the assessor certification. Assessors believe that there will need to be a revised training programme where assessors can learn the necessary skills and knowledge - specifically around what is in scope, understanding of new technologies and latest thinking around Net Zero. For business, the impact will depend on the quadrant that the business sits in.

# Areas for further consideration

## Introduction

This section of our report considers potential areas for further consideration and next steps by BEIS. It is structured as follows:

- Incorporating Net Zero elements into ESOS
- Business needs for Net Zero and ESOS
- Amending existing standards
- A review of assessor training and standards
- Awareness raising around Net Zero amongst businesses and targeted industrial advice.

## Incorporating Net Zero elements into ESOS

Our research has revealed a clear appetite for incorporating elements of Net Zero into ESOS but the challenge for BEIS is to determine the extent to which this should be done and what is meaningful to include. Our research uncovered some frustration on the part of stakeholders, assessors and businesses around the multiple Net Zero and climate change initiatives that exist and the need for both assessors and businesses to have some stability or sight of new policy initiatives. There is a perceived need for a longer term plan for the scheme to 2027 and beyond. Consideration could therefore be given to signposting and aligning the requirements of SECR, TCFD and ESOS to give assessors and businesses greater clarity as well as sight of longer-term policy intentions.

## Business needs for Net Zero and ESOS

The aim should be to encourage and assist businesses to have high engagement with ESOS (with Net Zero incorporated) and to have a better developed sustainability or GHG plan for the medium and long term. This might be achieved through:

- A clear definition of Net Zero for assessors and businesses to work towards
- A review of the regulation to assess whether there should be stronger compliance requirements
- Wider consultation on the regulation which would include discussion on the scale, scope and the balance between standardisation and flexibility
- More frequent audits to document progress towards Net Zero
- Extension of ESOS to smaller organisations
- Consideration of the reporting needs of the different parts of a business
- Accessible advice and guidance all in one place (one-stop shop) that is streamlined and aligned with other regulations

- Consistent and clear communications - targeted at board level
- Business grants or tax incentives to encourage a pathway to Net Zero
- Education, encouragement and enforcement depending on the nature of the business, recognising that it is not a one size fits all.

There should also be a goal of raising the standard of ESOS audits across the board to create greater consistency in quality. Sharing examples from high quality audit reports might be one way of achieving this. There was clear support for publishing the ESOS reports but concerns that league tables may create issues for the regulators.

## Amending existing standards

There was a clear view that existing international standards should be reviewed and amended as appropriate to provide a useful vehicle for Net Zero in ESOS assessments. Both ISO 14001 and ISO 50001 were thought to be widely used and be suitable vehicles for incorporating Net Zero into ESOS. Consideration should therefore be given to reviewing both standards to identify any gaps. However, consideration should be given to whether ISO 14001 goes far enough on emissions if coupled with ISO 50001 and whether any standards can be adapted quickly enough to make an impact in the short and medium term.

## Review of assessor training

There is a need to define what Net Zero means for assessors, review existing assessor training and consider the core skills required (e.g. levels of technicality, consultancy skills) for assessors to conduct a Net Zero assessment as well as sector specific skills and how to generate consistency across bodies.

Our research has shown that many perceive that there are large variations in the quality of ESOS audits, with some, but not all, assessors already incorporating elements of Net Zero in their ESOS reports. Consideration should be given to the pipeline of Net Zero skills as there was evidence of concerns around the existing supply of skilled professionals (i.e. do they have the necessary balance of engineering versus sustainability skills) and whether one person could possibly possess the necessary range of skills to complete a full Net Zero audit within ESOS. This is also linked to the overall point on the scope of Net Zero within ESOS. There would be value in considering the competency pathways to Net Zero auditing.

Businesses may benefit from examples of good practice. It may be that assessors could do as well, through, for example, mentoring schemes established by the relevant professional associations and registers.

## Awareness raising around Net Zero amongst businesses and targeted industrial advice

Raising awareness of Net Zero within business will be key to the successful incorporation of a Net Zero element to ESOS. There may be value in building on the “Race to Net Zero” which a significant number of UK companies have signed up to.

One key area of focus is to encourage greater buy-in to the Net Zero element of ESOS and ultimately drive the greater levels of implementation of recommendations. Industry associations and business organisations may be a valuable conduit for this and specific industries may be targeted.

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