

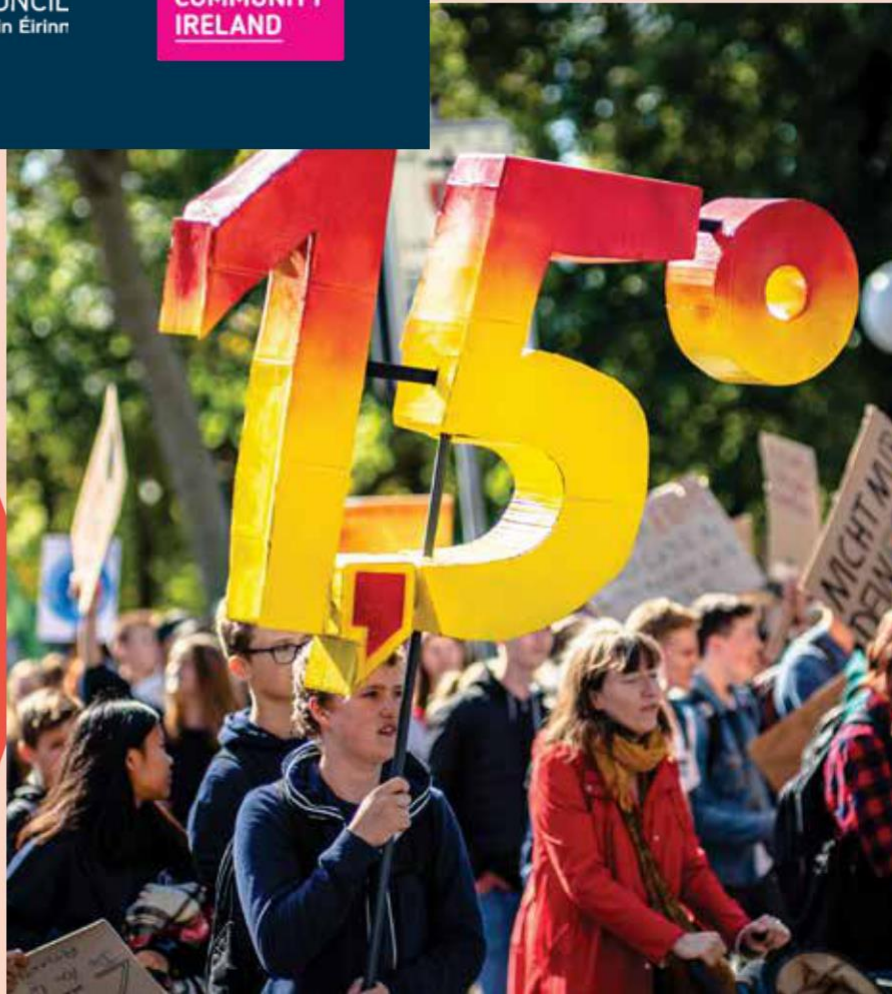
Carbon Budgets: Opportunities and Challenges for Irish Business

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**BUSINESS
IN THE
COMMUNITY
IRELAND**



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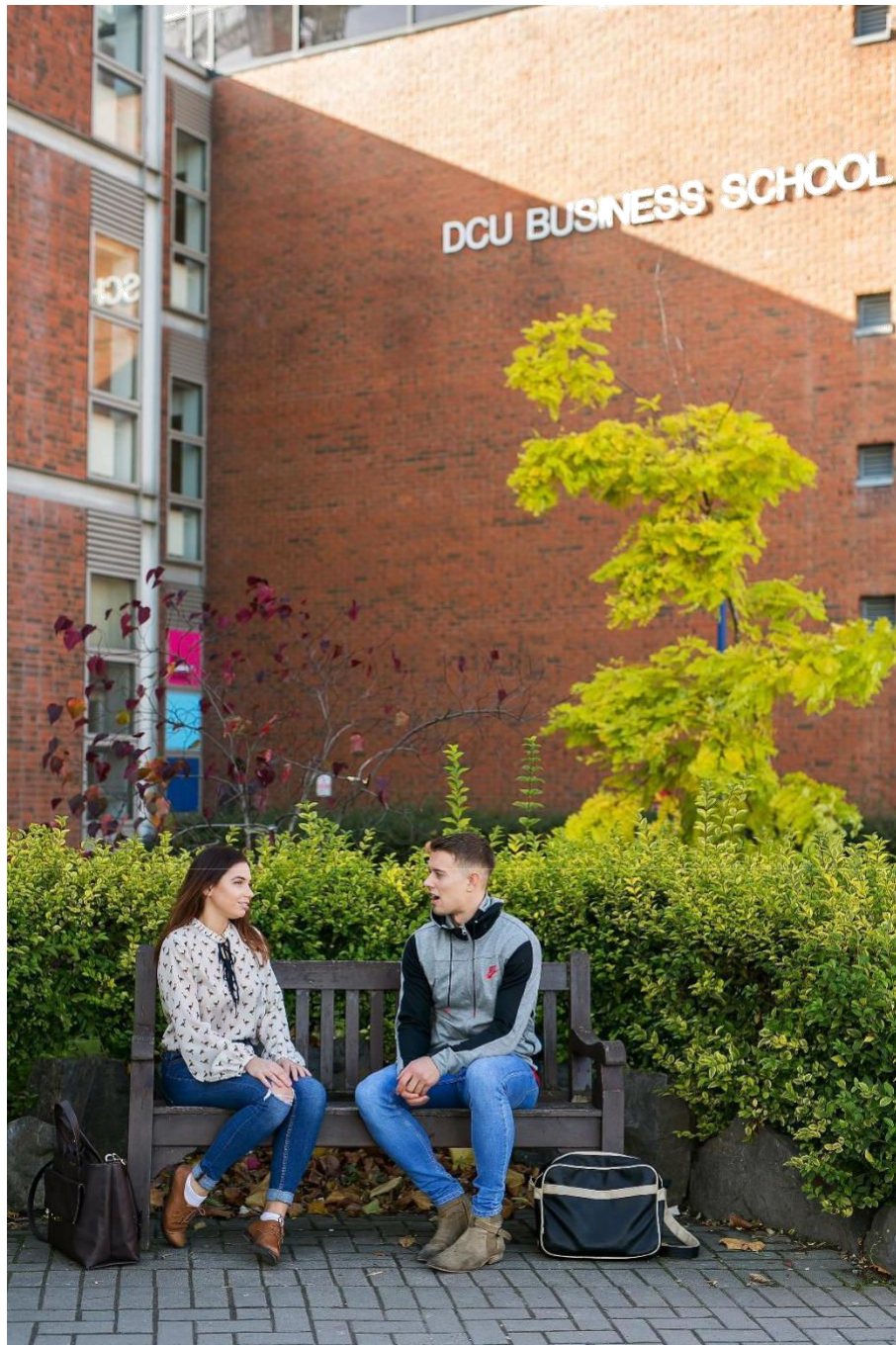
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Contents

| | | | |
|---|-----------|--|-----------|
| Executive Summary | 2 | Shared Vision | 25 |
| 1. Introduction | 4 | Training - How and Who | 26 |
| 2. Background | 5 | 5. Discussion | 27 |
| Climate Change | 5 | Measuring what matters | 27 |
| The Climate Act and Carbon Budgets | 5 | Whose power, whose responsibility? | 28 |
| Business and Climate Action | 7 | Moving forward and scaling up | 29 |
| Business-Climate Policy Intersection | 8 | 6. Overall Recommendations | 30 |
| 3. Methods | 10 | Policy | 31 |
| Data Collection | 10 | Develop a holistic vision for industrial development | 31 |
| Desk Research | 10 | Consolidate and strengthen domestic regulation | 31 |
| Interviews | 10 | Business | 32 |
| Focus Groups | 11 | Take responsibility for emissions in a national context | 32 |
| Data Analysis | 11 | Direct investment to support SMEs and address people and skills gaps | 32 |
| 4. Findings | 12 | 7. Concluding Remarks | 33 |
| Awareness and Understanding of Carbon Budgets | 12 | References | 35 |
| Measuring and Managing Carbon | 12 | | |
| National Climate Policy and Carbon Budgets | 14 | | |
| Challenges | 15 | | |
| Operational Challenges | 15 | | |
| Data Collection | 15 | | |
| Financial barriers | 16 | | |
| Pace and Scale of Change | 17 | | |
| People, Skills and Leadership Gaps | 17 | | |
| Systemic Challenges | 18 | | |
| Policy Gaps and Conflicts | 18 | | |
| Energy Infrastructure and Systems | 19 | | |
| Business and economic models | 20 | | |
| Other Challenges | 20 | | |
| Opportunities | 22 | | |
| Industry-specific opportunities | 22 | | |
| Business benefits | 22 | | |
| Participant Recommendations | 24 | | |
| Policy and Regulation | 24 | | |
| Technology | 24 | | |
| Public and Private Financing | 25 | | |

Executive Summary

The ecological, social and economic impacts of climate change are rapidly intensifying. Globally, 2023 was the hottest year on record and in Ireland, winter 2023-24 was one of the wettest ever. Under the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland must reduce greenhouse gas (GHG) emissions by 51% by 2030 and achieve carbon neutrality by 2050. Rolling five-year carbon budgets, from 2021-2035, have been developed to support these targets. The carbon budgets incorporate sectoral “ceilings”: sectoral GHG emissions limits across energy, agriculture, industry, commercial buildings, residential buildings and other sectors.

This research, in partnership with Business in the Community Ireland, examines business awareness and understanding of climate policy and carbon budgets, and identifies related challenges and opportunities for Irish business. The findings are based on interview and focus group research with over 55 representatives of business, policy and other sectors.

Measuring what matters

- **There are complex challenges to reducing business emissions across Scope 1 (direct), Scope 2 (purchased electricity) and Scope 3 (value chain) emissions.**
- **Scope 1 and scope 2 challenges are largely systemic and relate primarily to technology and infrastructure readiness and capacity, and policy conflict and clarity.**
- **The greatest and most urgent challenge is for business to engage seriously with and take responsibility for reducing Scope 3 value chain emissions.**

The business sector is aware of and engaged with climate action, but understanding of national climate policy and the carbon budgets is relatively low. The exceptions are businesses in high-emitting sectors, with large

direct Scope 1 emissions, or those with specific responsibilities under domestic legislation such as commercial semi-states. Systemic issues of technology readiness and policy conflict and clarity are the key challenges to reducing Scope 1 emissions, particularly in hard to decarbonise sectors such as power generation, cement and aluminium manufacture.

Energy presents additional challenges, with businesses relying on grid transformation to reduce Scope 2 emissions from purchased electricity. There is both optimism and concern about the investment and resources needed to electrify the grid and meet predicted demand.

However, businesses struggle most with measuring and managing Scope 3 emissions, the largest emissions category in most industries. For many businesses, the forthcoming Corporate Sustainability Reporting Directive (CSRD) requires serious engagement with Scope 3 for the first time, raising concerns about data collection and quality.

We encourage businesses to analyse their emissions targets and more importantly, their performance, through a value chain lens, utilising the carbon budgets to connect their impacts to the national emissions sectors. Doing so can help companies and other stakeholders understand the implications for national climate targets of business growth at the downstream end of the supply chain, for example for companies in sectors like retail, consumer goods, construction or professional services, and take responsibility for their Scope 3 emissions.

Whose power, whose responsibility?

- **Larger businesses and government can both take greater responsibility in supporting smaller organisations to decarbonise, through collaboration, communication and financing.**

- **There is concern that CSRD may divert focus from action to reporting but it is also welcomed as offering a level playing field.**
- **While target-setting can be a useful carbon management tool it is most important to focus on outcomes over target-setting or reporting.**

We interviewed a range of organisations across sectors and types. Typically large companies struggle to control the emissions of their suppliers and customers, leading to tension. For example, smaller suppliers may feel pressured to reduce emissions without adequate support. Larger companies can provide this support through incentives and partnerships to help suppliers decarbonise. Government support is also crucial, with businesses calling for more incentives such as tax credits and low-interest loans. While a growing range of supports has been put in place, uptake has been relatively slow and there is scope for greater communication between business and government to release financing for organisations which need it most.

Regulation is a contentious issue; some businesses are concerned that CSRD could divert resources from action to disclosure, but others welcome it for creating a level playing field. The new national regulations and policies have sharpened the focus on emissions reduction, but there is concern about regulatory overload. Many companies have set more ambitious internal targets than government mandates, particularly those adopting Science-Based Targets (SBTs). Although SBTs can help to improve carbon management, there are increasing concerns about their methodology. Ultimately it is crucial to prioritise outcomes over goal-setting or reporting.

Moving forward and scaling up

- **There is significant tension between climate targets and broader economic and enterprise goals for Ireland, particularly in emissions-intensive industries.**

- **A holistic shared vision for industrial development, involving business, government, workers and other stakeholders, is needed to align economic and business growth with climate goals and to leverage the significant private and public financing required to support it.**

A consistent theme from our interviewees was the conflict between climate policy and broader economic and enterprise goals for Ireland. Emissions-intensive industries like fossil fuels, aviation, cement production and agriculture face significant challenges in balancing economic growth with climate targets. Participants highlighted the difficulty of meeting housing and agrifood export targets alongside climate commitments. The tension between industrial development and environmental goals suggests that the current strategies do not align, requiring both businesses and the government to acknowledge and address trade-offs. It is important to recognise that for some businesses, such as those in offshore wind, climate action presents opportunities, whereas for others it may require business model transformation.

Coordinated efforts across the entire value chain are necessary, as growth in one sector affects others. For example, a significant portion of agricultural output supports food processing, food retail and other industries. Achieving the projected €119bn investment by 2030 will require substantial private, public, and semi-state investment in new technologies, infrastructure and training. Investments must address key funding gaps, particularly in supporting SMEs to decarbonise and providing quality jobs.

The carbon budgets provide a valuable framework to organise economic goals and activity within climate limits. Forums are needed for business, workers, policymakers and other stakeholders to discuss growth, policy coherence and the future of key sectors, and develop a shared socioeconomic vision for a Net Zero Ireland.

1. Introduction

The purpose of this research is to better understand the role of the business sector in Ireland’s national carbon budgeting framework. Under the Climate Action and Low Carbon Development (Amendment) Act 2021, Ireland must achieve carbon neutrality by 2050 (Government of Ireland, 2021). Carbon neutrality means reducing GHG emissions into the atmosphere to a very small amount, with any remaining emissions neutralised through natural carbon sinks or carbon dioxide removal, thus achieving a “net zero” balance.

Accompanying rolling five-year carbon budgets, from 2021 - 2035, have been developed. The global carbon budget represents the cumulative GHG emissions that can be released into the atmosphere before a specified global warming limit is reached. This is estimated at 250 GtCO₂ remaining for a 50% chance of keeping climate change below 1.5C (Lamboll et al., 2023). The Irish budgets are in line with the ambition to reduce GHG emissions by 51% by 2030 compared to 2018 levels.

Figure 1 illustrates the latest GHG emissions data by sector in Ireland, with descriptions of each category. Overall emissions decreased by 1.9% in 2022 compared to 2021 levels (EPA, 2024). The Environmental Protection Agency (EPA) projects that if existing policy measures are fully implemented, Ireland will achieve only an 11% reduction in GHG emissions by 2030, falling well short of the targeted 51% reduction (EPA, 2024).

This report presents the findings of interview and focus group research conducted in 2023 with representatives from business, policy and other sectors, along with desk-based research. Drawing on these findings we examine business awareness and understanding of national carbon budgets, identify related challenges and opportunities for Irish business and present recommendations for business, policymakers and other stakeholders.

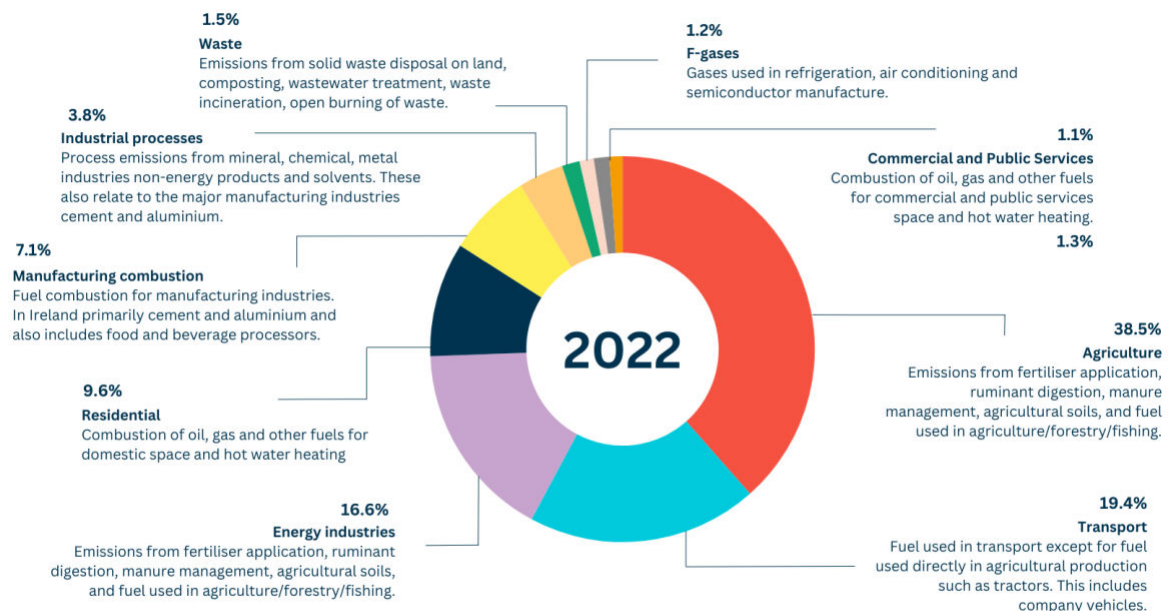


Figure 1: GHG emissions in Ireland by sector in 2022, excluding LULUCF*. Adapted from (EPA, 2024).

*LULUCF is an acronym for Land Use, Land Use Change and Forestry. It is typically not included by the EPA in the published national emission totals but is reported in their submissions to the EU and UN. There is no sectoral ceiling for LULUCF yet.

2. Background

Climate Change

The ecological, social and economic impacts of climate change are rapidly intensifying, including extreme weather events, displacement, fires, flooding and drought (Calvin et al., 2023). In 2023, multiple climate “records” were broken: Antarctic sea ice was at its lowest ever, ocean warmth at its highest, and it was the hottest year on record (WMO, 2024). We are on course to reach a 1.5C temperature rise before 2030 and a 2C temperature rise before 2050 (Tollefson, 2023), which will result in extreme heat stress, rapid sea level rise and knock-on impacts on other planetary boundaries such as biodiversity and ocean acidification (ICCI, 2023). GHG emissions are generated primarily by the use of fossil fuels including gas, oil and coal for electricity generation, transport and heating, along with emissions from animal agriculture, land use changes such as deforestation, waste, and industrial and manufacturing processes.

Global GHG emissions are calculated and monitored through the United Nations Framework Convention on Climate Change (UNFCCC) GHG accounting system, which collates emissions from nation state actors, including Ireland, and Aviation and Shipping. This is a production-based accounting system: the emissions attributed to a country are those associated with the production of goods and services in that country, such as CO₂ emissions from factories or vehicle tailpipes, methane from cattle or nitrous oxide from agricultural soil fertilised with nitrogen (Steininger et al., 2016).

The Climate Act and Carbon Budgets

Various international agreements are in place which aim to limit emissions and temperature rise, chiefly the 2015 Paris Agreement between 195 “parties”, including countries and groups such as the EU. Associated

regulations have been developed including the EU’s Effort Sharing Regulation which requires Ireland to reduce GHG emissions by 42% by 2030. This target excludes emissions related to the EU’s Emissions Trading Scheme (ETS), which seeks to reduce emissions in certain sectors through the trading of emissions credits between high-emitting “installations” like energy plants, factories, data centres and airports.

In Ireland, the 2021 Climate Act mandates the national climate objective:

“The State shall, so as to reduce the extent of further global warming, pursue and achieve, by no later than the end of the year 2050, the transition to a climate resilient, biodiversity rich, environmentally sustainable and climate neutral economy.” (Government of Ireland, 2021)

In line with the Act the government produces an annual Climate Action Plan which outlines policy and progress, including detailed actions. The 2024 Plan includes over 140 actions across sectors.

The Act provides a legislative framework for carbon budgets over three five year periods between 2021 and 2035. The Irish carbon budgets were calculated by the Climate Change Advisory Council (CCAC), an independent body composed of experts largely from academia, policy and civil society. The carbon budgets incorporate sectoral “ceilings”: sectoral GHG emissions limits across energy, agriculture, industry, commercial buildings, residential buildings and other sectors. Government departments and the associated Ministers are responsible for reducing sectoral emissions in line with the budgets and must make annual progress reports to the Oireachtas. The CCAC reports that by the end of 2022 all sectors had already used at least 46.6% of their 2021 - 2025 budget (CCAC, 2024).

Figure 2 illustrates the carbon budgets and projected emissions and Table 1 shows the 2030 sectoral ceilings and the percentage reduction required from each sector. The sectoral ceiling categories are a collapsed version of the EPA's ten emissions categories illustrated in Figure 1.

Industrial processes and manufacturing combustion are combined in the Industry category.

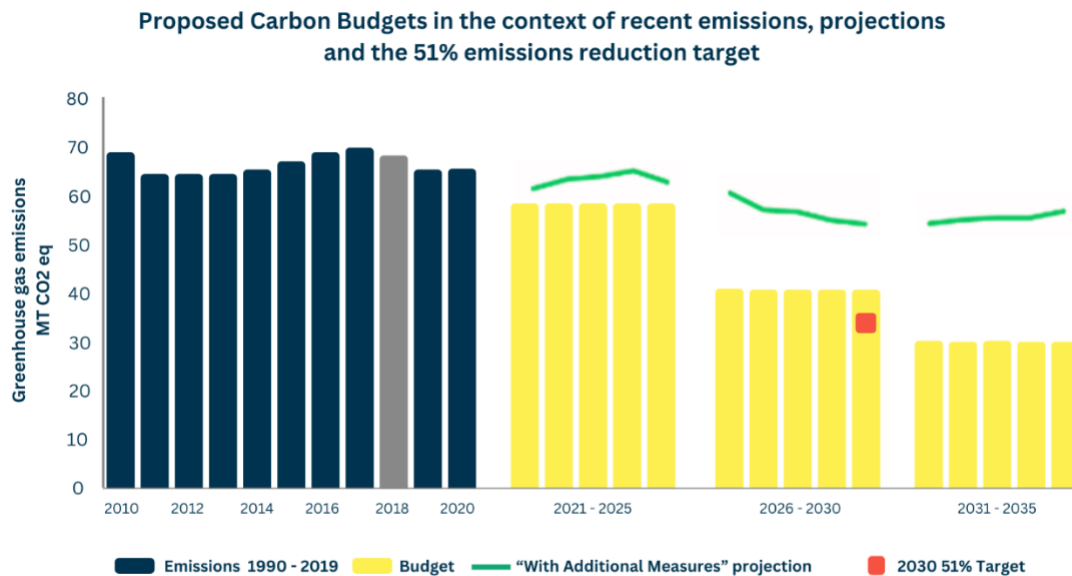


Figure 2: Carbon budgets 2021 - 2035 with projected emissions reduction with additional measures (WAM) (Adapted from CCAC, 2024).

| Sector | 2018 Emissions (Baseline) | Target emissions in 2030 (Sectoral Ceiling) | Reduction | Responsibility |
|-------------------------------|---------------------------|---|-----------|--|
| Electricity | 10.5 MtCO ₂ eq | 3 MtCO ₂ eq | 75% | Minister for the Environment, Climate and Communications |
| Transport | 12 MtCO ₂ eq | 6 MtCO ₂ eq | 50% | Minister for Transport |
| Commercial & Public Buildings | 2 MtCO ₂ eq | 1 MtCO ₂ eq | 45% | Minister for Enterprise, Trade and Employment Minister for the Environment, Climate and Communications Other Ministers |
| Residential Buildings | 7 MtCO ₂ eq | 4 MtCO ₂ eq | 40% | Minister for the Environment, Climate and Communications |
| Industry | 7 MtCO ₂ eq | 4 MtCO ₂ eq | 35% | Minister for Enterprise, Trade and Employment |
| Agriculture | 23 MtCO ₂ eq | 17.25 MtCO ₂ eq | 25% | Minister for Agriculture, Food and the Marine |
| Other (F-Gases, Waste) | 2 MtCO ₂ eq | 1 MtCO ₂ eq | 50% | Minister for the Environment, Climate and Communications |

Table 1: Sectoral ceilings and % reduction required from each sector by 2030. Adapted from Government of Ireland (2022).

Business and Climate Action

There is increasing awareness and engagement with climate action in the business sector globally. Multiple initiatives exist to guide measurement and disclosure of GHG emissions, such as Science Based Targets (SBTs) and the GHG Protocol. The latter initiative developed the now standard Scope system for classifying business GHG emissions:

- Scope 1 - direct emissions, including emissions from manufacturing, heating of buildings and transport by company vehicles
- Scope 2 - emissions from purchased electricity
- Scope 3 - value chain emissions including upstream (purchased goods and services, transport by non-company vehicles, waste, employee commuting and business travel) and downstream (processing, use and end-of-life treatment of sold products, transport by non-company vehicles, franchises, investments)

Voluntary disclosure by companies has been criticised as fragmented and inconsistent, focused on target-setting rather than performance (Dahlmann et al., 2019; Day et al., 2023). There is also growing public and media scrutiny of corporate climate action and disclosure, particularly of GHG-intensive industries such as fossil fuels production, aviation and animal agriculture, and of their finance providers.

Emissions disclosure is gradually becoming mandatory across jurisdictions through emerging legislation such as the EU Corporate Sustainability Reporting Directive (CSRD) and the SEC Climate Risk Disclosure Rule. The CSRD will require almost 50,000 organisations to report emissions information and the new EU Green Taxonomy aims to encourage more sustainable investment. Recording and allocating business emissions is extremely

complex, particularly Scope 3 emissions (Klaaßen and Stoll, 2021; BITC, 2020).

In Ireland there are specific disclosure requirements for the public sector and commercial semi-state companies (CSSs), commercial businesses owned by the state. The Public Sector Climate Action Mandate (Government of Ireland, 2022) requires public sector bodies (excluding CSSs, local authorities and the school sector) to reduce emissions by 51% by 2030 and establish supportive internal governance, operational and training infrastructure. CSS companies, of which there are 22 in Ireland, are governed by the NewERA climate action framework, developed by the National Treasury Management Agency (NTMA) (NTMA, 2022). Under this framework the CSSs are also required to set a target to reduce emissions by 51% by 2030, in line with the national target, and report on progress in their annual reports. The NewERA framework states that, per the Climate Act, public bodies, including CSSs, are “obliged to perform their functions in so far as is practicable in a manner consistent with national climate plans and strategies” (NTMA, 2022). Public sector progress towards targets is supported and monitored by the Sustainable Energy Authority of Ireland (SEAI) (SEAI, 2024). The latest SEAI report for the public sector shows that emissions have decreased 17% since 2018, with much of the reduction due to reduced electricity emissions (SEAI, 2024a). Key actors and relevant policy and legislation are outlined in Figure 3.

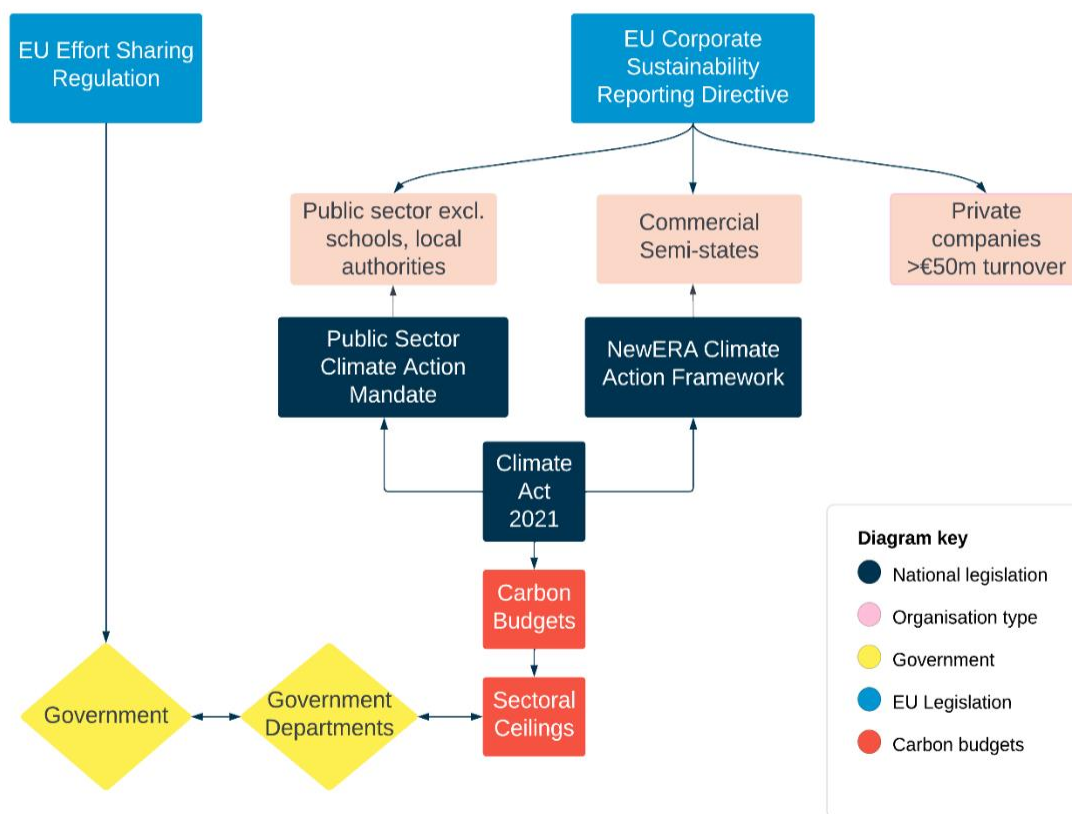


Figure 3: Ireland's climate policy - key actors and policy instruments pertaining to business and carbon budgets.

Companies in Ireland are engaged with action to address climate change. A 2020/21 survey of 4,200 client companies of three enterprise promotion agencies in Ireland (Enterprise Ireland, IDA Ireland and Údarás na Gaeltachta), revealed that 78% believe that a climate action response is either moderately or very important to their business (Kren and Lawless, 2023). However, only 21% of respondents have a climate action plan, and only 12% measure emissions (Kren and Lawless, 2023). The larger the business the more likely it is to have a climate plan and/or measure emissions.

business in taking climate action is referenced throughout Ireland's annual climate action plans, with specific sections focusing on the Industry sector. The Industry sector incorporates emissions from manufacturing industries (of which cement manufacturing is the largest) and industrial processing, and has a target of 35% reduction in emissions by 2030, relative to 2018. Although emissions fell in the sector from 2021 to 2022, they are still behind target with annual reductions of 9% required to meet the sectoral carbon budget target (EPA, 2024; Government of Ireland, 2023).

Business-Climate Policy Intersection

The 2023 Climate Action Plan (CAP23) states that climate action will “involve a significant change in life-styles and business models respectively over the period to 2030” (Government of Ireland, 2022a:15). The role of

Achieving Ireland's climate targets will require significant private sector, public sector and commercial semi-state investment (Casey and Carroll, 2023). An estimated €119bn investment by 2030 in key technologies will be required, more than half of which the government expects will be borne by the private sector (Government of Ireland, 2022b). Commercial semi-states will bear significant

costs, particularly in the energy and transport sectors (MacNamara, 2023). Annual Climate Action Plans set out various government supports and incentives for business to assist with climate action – from technology and innovation funds and skills development to direct grants/funding for retrofitting, to carbon pricing, taxation and other decarbonisation measures. For example, €50m will be “made available for climate action business supports” through the SEAI (Government of Ireland, 2022a:120). A full list of climate action and energy supports for business is provided by the Department of Enterprise, Trade and Employment¹. CAP23 references the importance of creating and benefiting from “new employment opportunities” (Government of Ireland, 2022a:4) that will be generated by climate action initiatives, while CAP24 asserts that “climate action can lead to market

opportunities that enable sustainable economic growth and green job creation” (Government of Ireland, 2023:57).

Business in the Community (BITC) has to date signed up 64 Irish companies to its Low Carbon Pledge, which asks companies to sign up to SBTs, and reports annually on progress. In 2023 the Low Carbon Pledge report revealed that 51% of pledge signatories, a mix of private sector and commercial semi states, had “integrated the Irish government’s Climate Action Plan into their sustainability strategy”, while 18% had “aligned their carbon emission reduction targets with the government’s sectoral carbon budgets” (BITC, 2023). We explore this further in the Findings section.

1 See: enterprise.gov.ie/en/what-we-do/supports-for-smes/energy-supports/.

3. Methods

Data Collection

Desk Research

Our work was informed initially by a focused literature review on the subject of national carbon budgets and business. As this report seeks to inform research, practice and policy, the documents reviewed incorporated academic literature; policy documents from Ireland, the UK, the EU and globally; grey literature including reports from professional services firms, think tanks and CSOs; and media commentary. BITC’s Low Carbon Pledge survey and related reports were foundational to the project, providing a starting point for the current state of business commitments to carbon budgeting in Ireland and indicating where businesses might be experiencing challenges.

Interviews

Semi-structured interviews were conducted with business representatives, state agencies and policymakers. Interviews allowed us to gain further insight into themes emerging from desk research and Low Carbon Pledge data. In line with best practice (Katz-Buonincontro,

2022), an interview protocol was developed and shared with participants in advance, along with an ethics statement and consent form.

We conducted 47 interviews with 55 individuals between April and August 2023. Figure 4 shows the number of interviewees in each category and Figure 5 illustrates the range of sectors included. As Figure 4 states, in the remainder of the report, we use “companies” to refer to private companies only, and “business” to refer to private companies plus commercial semi-states, unless otherwise specified. Interviews were conducted largely online with two in-person interviews. All were recorded and transcribed.

We acknowledge an inherent bias in the sample: company participants were typically sustainability practitioners with a good knowledge of climate and carbon. Likewise, interviewees from government agencies and departments were also focused on climate within their role. Therefore, our findings represent the views of sustainability practitioners and other experts and are not generalisable to all businesses or all policymakers.

Interview participants - category breakdown

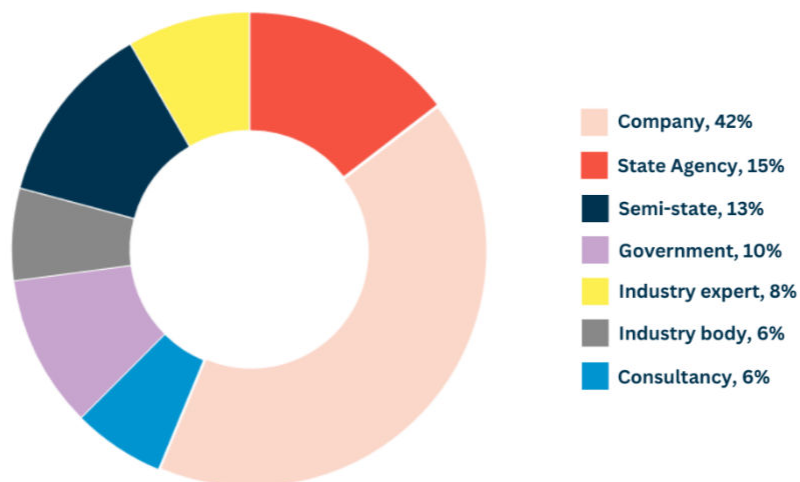


Figure 4: Interview participants - category breakdown.

Focus Groups

Two focus groups were held. The first was with a cross-section of BITC industry clients in May 2023, featuring participants from eight businesses across six sectors. Participants included three people who we had not interviewed, bringing the total participant number to 58. This focus group allowed us to sense check some of the emerging themes from the interviews.

A second focus group was held with BITC advisors at the end of August, presenting some preliminary findings and seeking their input. Both focus groups were recorded.

Data Analysis

Qualitative analysis software (NVivo) was used to code the interview and focus group data, using a coding schema drawn largely from the interview protocol and organised around the key themes of awareness, challenges, opportunities and recommendations. The analysis was primarily qualitative but did include some basic frequency analysis to identify the most commonly occurring themes and where possible, to distinguish between sectors/groups.

Business participants - sector breakdown

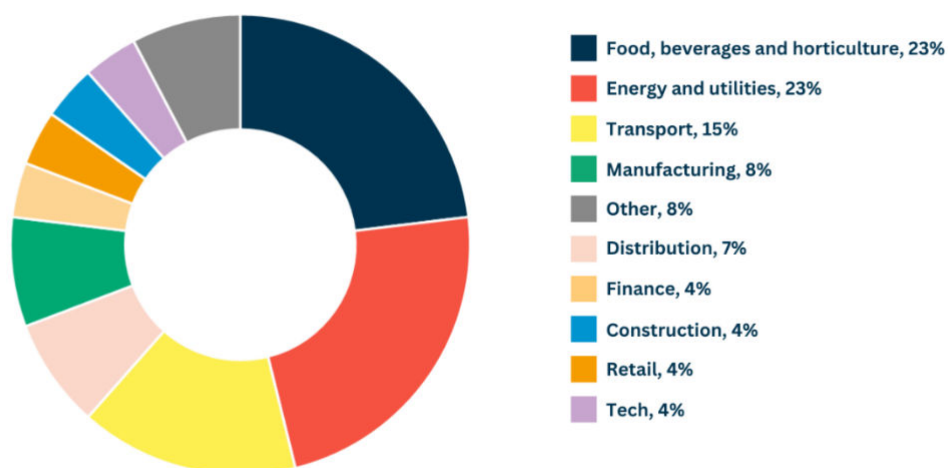


Figure 5: Business interview participants - sector breakdown.

4. Findings

Awareness and Understanding of Carbon Budgets

Businesses were conscious of the Government’s Climate Action Plan but awareness of national carbon budgets and how they apply at business level was quite low. Instead they were more likely to rely on global voluntary and regulatory frameworks to guide their engagement with climate action. Awareness and understanding of carbon budgets was higher among commercial semi-states.

Measuring and Managing Carbon

Businesses in our study were very aware of the need to be more sustainable and reduce GHG emissions. Eleven of our 26 business participants were signatories to BITC’s Low Carbon Pledge, while eight were subsidiaries of larger multinational companies with global corporate commitments.

Consistent with BITC’s (2023) findings, multiple reporting frameworks and certification schemes were used to measure and manage emissions (Table 2). There was a strong preference for external validation of emissions plans to support credibility, for example:

“We’ve had a lot of different conversations with a lot of certifiers, so we always want to be third party certified for our carbon neutral claim that it’s not just something we do ourselves.” (Participant 53, Company)

Forthcoming **regulation** was frequently cited as a driver for measuring and managing carbon. There was a widespread perception that the new EU CSRD and Taxonomy will be game changers for companies, with a lot of preparation required. CSRD was typically viewed as an onerous obligation on companies, causing pressure for those working to implement it. The related challenges are discussed in section 4.2. However, a number of participants welcomed the new regulation as increasing accountability for meeting emissions targets and putting carbon accounting on a par with financial accounting:

“...carbon accounting is actually a very good term because you have to operate in exactly the same way as you do with money. CSRD and the taxonomy, it’s brilliantly constructed – CSRD is about companies taking their sustainable impacts as seriously as their money, as their profits.” (Participant 18, Commercial semi-state)

| | Framework | Number of companies |
|------------------|--|---------------------|
| Mandatory | Corporate Sustainability Reporting Directive (CSRD) (Wave 1/2) | 11 |
| | Emissions Trading Scheme (ETS) | 4 |
| | Environmental Protection Agency (EPA) | 2 |
| | Other Regulation | 7 |
| Voluntary | Science Based Targets (SBT) | 15 |
| | Other Voluntary | 6 |

Table 2: Reporting and target-setting frameworks used by business interview participants.

Some participants were concerned about lack of regulatory coherence between CSRD and national frameworks like the Public Sector Mandate and NewERA framework:

“Well, look, it’s just like if we all have to do this at an EU level, my argument is, why are you giving us more to do domestically that doesn’t align with CSRD? You should just be aligning everything with CSRD because there’s already too much resource being taken away from doing the activities to reduce carbon.”
(Participant 40, Commercial Semi-state)

Businesses also used **target-setting** and, in the case of two companies, internal carbon budgets, to measure and manage carbon. Figure 6 shows a summary of targets set by companies and commercial semi-states, drawn from our interviews. Fifteen companies had adopted Science-based targets and several commented on the value of setting SBTs:

“So we validated those footprints with that external agency, and we’ve been able to then develop out targets in line with science based targets, 1.5 degree near term scenario or

target, and a long term target of net zero by 2040, with a view to submitting to SBTi at some stage later this year, probably later this summer.” (Participant 41, Company)

“The Science Based Targets initiative for us has given really good guidance based on the greenhouse gas protocol and all that, of course, goes back to very credible sources like the World Resources Institute.”
(Participant 53, Company)

One consultant noted however that, in some cases, companies do not assess the practical implications of a target. Another participant criticised the underlying SBT methodology:

“Sustainability initiatives like CDP and SBTi, which I think attempt to provide kind of a one size fits all approach... don’t set the bar too high because you want as many companies as possible to do this... And then you have airlines who can get an SBTi target. They just have kind of a passenger carbon intensity target. You can’t reconcile a carbon intensity target with the objectives of the Paris Agreement” (Participant 5, Company).

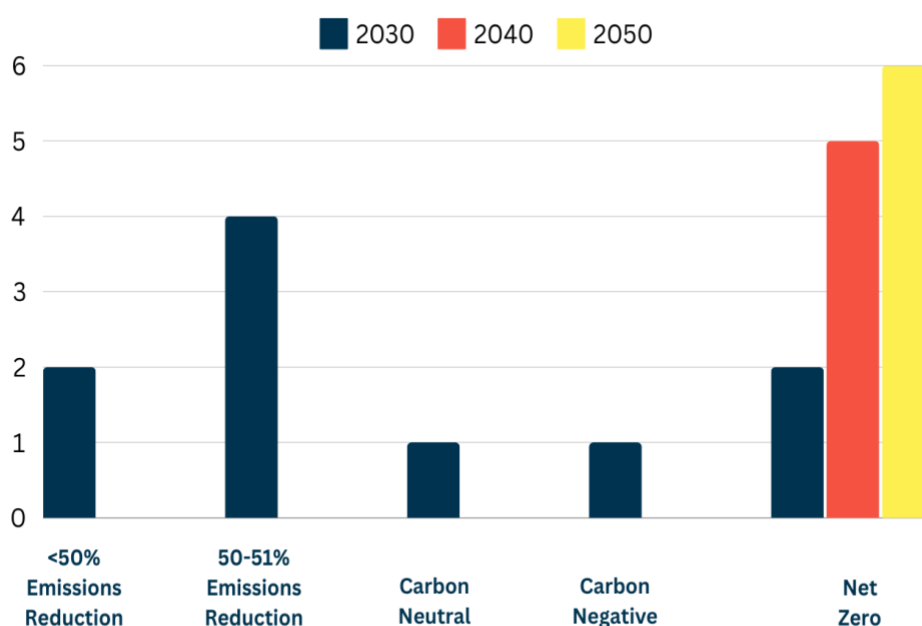


Figure 6: Emissions reduction targets set by interview participants.

Two companies, both large multinational businesses, found setting **internal carbon budgets** at departmental level useful, and noted that executive bonuses were linked to the achievement of the budget and there were penalties for going over budget. Another company however, had tried to introduce an internal carbon budget but it was not implemented:

“we actually tried to bring in carbon budgets within the business, internal carbon budgets... It was going to be quite crude. We measured the project by turnover and applied a factor to that. And they would be required to stay within that. If not, they'd have to pay a fee, something like that. Just something to try and again, focus the mind, get them thinking about what they need to do. But just, again, anything that was going to cost a project any more money there's just no appetite for whatsoever.” (Participant 26, Company)

National Climate Policy and Carbon Budgets

In our interviews, businesses across all sectors were aware of the Government's Climate Action Plan and the scale of Ireland's emissions reduction ambition. The 2023 BITC Low Carbon Pledge survey provides some initial data on business engagement with climate policy. The survey found that 51% of respondents had integrated the Climate Action Plan into their strategy, although the form of integration varied. Some companies had mirrored the overall 2050 and 2030 targets, while some pointed to specific initiatives of theirs that aligned with similar initiatives in the Climate Action Plan. Some of our interviewees stressed that their performance was contingent on government action:

“Our success in much of what we're trying to achieve is based on the government's continued development and introduction of policies to support the transition to low carbon.” (Participant 50, Company)

However, when it came to carbon budgets for specific sectors and to identifying how carbon budgets might apply to a particular business,

awareness was much lower. When asked if they had aligned their targets to the national carbon budgets, only 16% of respondents to BITC's 2023 Low Carbon Pledge survey said yes (BITC, 2023). However, this alignment again took the form of either specific initiatives which spoke to elements of the Climate Action Plan or high level targets. In the survey only one company specifically referred to a particular sectoral ceiling and how it related to their business.

Government agencies we spoke to acknowledged that the way the data is collected and carbon budgets constructed by sector does not necessarily flow through to individual businesses, even large ones. For example, companies can find themselves spanning multiple sectors, for example, energy, commercial buildings and transport.

“take the hotel sector, for instance, they have construction, they've got food, they're in entertainment, they're in travel and transport. So if you're talking about a net zero strategy for a hotel, then all of those sectors are relevant to you. And trying to understand how that then matches to the government's and carbon budgets...it's a ways off.” (Participant 12, Consultant)

In addition, businesses were confused about the **implications** (if any) of not meeting carbon budget targets:

“What I keep coming back to in my head and I'm thinking one thing that I don't understand is what happens? We know what happens if the country doesn't reach its carbon budget but where's the onus on each organisation? Where's the link back up to government? So will there be any penalties or incentives for individual organisations?” (Participant 25, Company)

Many companies, particularly multinationals, commented that their own climate targets were in excess of the national targets, and preferred to measure their performance against these targets rather than the carbon budgets. Some commented that the government targets did not go far enough and

that government was lagging behind business in target-setting. This was a feature of both responses to the 2023 BITC Low Carbon Pledge Survey and our interviews:

“When I looked through the guidance and the direction that was given under those sectoral budgets, none of them apply to the work that we do. So there's nothing in that that refers to us. And from a buildings perspective, we're already ahead on that.” (Participant 4, Commercial semi-state)

Understanding of how business-level emissions connect with national emissions was higher in industries with high Scope 1 emissions, for example in sectors such as energy, transport or manufacturing. Consultants and industry experts noted that companies typically do not connect their Scope 3 emissions in particular to national emissions or carbon budgets and if they were making the connection to national emissions it was through Scope 1 and 2.

Commercial semi-states, many of which operate in sectors with high Scope 1 emissions, were generally more aware than private companies of the national carbon budgets and of their obligations under the NewERA framework:

“It's not really going to be accepted for us as a commercial semi state to not hit those targets.” (Participant 4, Commercial semi-state)

“51% reduction in GHG emissions by 2030, 50% improvement in energy efficiency by 2030. They're coming directly from the National Climate Action Plan 2023... And in setting these targets we understand that we have a fundamental responsibility to lead out on climate action.” (Participant 15, Commercial Semi-state)

Challenges

Much of the interview and focus group time was spent discussing challenges. Two main categories were identified: operational challenges such as data collection, cost and

human resources, and systemic challenges including energy infrastructure, policy and business models.

Operational Challenges

Data Collection

Businesses across sectors highlighted access to **accurate, consistent data** as a major challenge, particularly under the time pressure of CSRD:

“Unless you actually start measuring where you're at at the moment, you can't really identify areas where you can improve. Because the first thing people go is, you know what, I'm flying blind here. I don't know how much we spend on corporate travel or I don't know what the existing consumption is of our whole IT estate, right? And until you get that, then you can't really do anything.” (Participant 46, Company)

“So it is challenging in parts to get the data because we are not on one ERP system. You do a lot of data cleaning, you also do a lot of mapping and averaging.” (Participant 34, Company)

Some noted that increased **reporting requirements** had time and cost implications, potentially diverting resources from implementation.

“So why have I got all this reporting obligation coming in 2024? ...What are we trying to solve here? And the risk is you create an army of advisors, an army of reporters, and you postpone the actual action, getting on with the doing, getting on with the decarbonising.” (Participant 23, Company)

A number of companies relied on consultants to calculate their emissions and were sometimes concerned about the credibility of external advisors. Credibility of carbon offsets was also an issue.

“There's a lot of cowboys in this space and you need to be really careful about who you engage in and what you're trying to do

because it is a big cost to organisations.”
(Participant 33, Company)

“The people that are actually being paid to put these things together, especially around scope three, are potentially not even doing it properly.” (Participant 39, Company)

Calculating **Scope 3 emissions** was most challenging. Difficulties included access to data from downstream (customers, employees) and upstream (suppliers) supply chain actors, data quality, inconsistency in methodologies and lack of engagement from other actors. Several companies commented that they could not “control” emissions elsewhere in the supply chain from customers, suppliers and employees. A number of businesses had advice for monitoring Scope 3 emissions, namely developing close, trusting relationships with suppliers, and obtaining independent verification of Scope 3 emissions.

Financial Barriers

The cost of decarbonisation was a major challenge for businesses. Companies were concerned about the **cost, return on investment and payback period** of decarbonisation projects such as building retrofit and equipment upgrade.

“Really it comes down to: is there going to be a business case around sustainability in general which is very hard nose about it. If it's going to cost money and there's not going to be a financial benefit, companies aren't going to be interested in it and it's fine for the larger companies who have their piece in the media. It's all part of their overall image. It's part of the global strategy. And they will have that in place. And they'll have their overall net zero targets and everything that's put out there. For the medium to small companies, I think it'll be much more of a challenge because you're going to be introducing more costs for them to have that. They're not going to see an overall benefit.” (Participant 10, Consultant)

Many companies had availed of **government grants** but some participants from government and government agencies noted that uptake had been quite low (to date), particularly from

SMEs and micro enterprises. Barriers to uptake cited by companies were that the financing available is insufficient, grants are slow to access, grants are more useful for some sectors, such as manufacturing and those involved in import or export, and lack of awareness of supports.

Companies providing business-to-business (B2B) products or services observed that large trade customers, driven by upcoming CSRD requirements, expect emissions reductions from suppliers without considering cost implications for the supplier. Some participants pointed out that their business could lose contracts with customers if they didn't meet certain targets.

“The retailer will push back on their suppliers and farmers and everybody else and ask them to do this, that and the other. They're not prepared to pay for it.” (Participant 44, Company)

Underlining this point, Government agencies and consultants that are working with **SMEs** pointed out that there is a significant difference between larger companies and SMEs in terms of having emissions reduction strategies. Unlike large companies, SMEs often do not have the resources – financial or time – to make emissions reduction a priority.

“I think one of the things we should be doing or could be doing is to see how can we make it easy for SMEs? There is a bit of an onus on organisations like ourselves to try and come up with something simple that can fit into the busy life of an SME owner operator to help them kind of solidify.” (Participant 9, Commercial semi-state)

Some of the larger companies acknowledged the need to bring their suppliers and smaller businesses with them, describing how they are working with smaller suppliers to educate them and help them develop their own plans:

“A huge amount of our time on my side of the house right now, working with the front end of the business is looking at training supports,

partnerships that actually can help customers on that journey.” (Participant 50, Company)

At national level, semi-states and industry experts commented that regulations on semi-state funding models were comparatively restrictive and did not support agile and timely decision making.

“It feels to me like there’s a very traditional mechanism for funding. So government funds, say, public transport, and yet in other countries, public transport organisations are more agile. They have different funding models, and they work with private finance. We just don’t seem to have an innovative approach to some of these issues and problems at all... So it could be a case that there are too many roadblocks to actually delivering what is ultimately an economic change.” (Participant 13, Commercial Semi-state)

Some industry experts and government participants noted that there is a general lack of understanding of the **scale of investment** required for delivery of the Climate Action Plan and of the split between private and public sector investment.

“I think it just has to be recognised. It’s going to be tens of millions investment, say, from the EI funding supports or IDA funding or anything DETE could do that’s hundreds of millions that an industry is going to have to invest if they’re truly going to revamp their entire systems, if they’re going to change their production lines, if they’re going to change their heating system.” (Participant 35, Government)

Pace and Scale of Change

Participants across all sectors identified challenges in managing the extensive changes that are required to meet emissions reduction targets in their businesses. These challenges encompassed both the extent or scale of the change and the pace at which it must be delivered. Many noted the ambition of targets, both national and enterprise level.

“So it’s very ambitious and we’ve given ourselves a very ambitious time or a

demanding timeline to do all this as well. [The business] made public claims to actually achieve this by the end of calendar year 2026. So some very big goals.” (Participant 27, Company)

“The complexity and how rapidly the targets and the requirements are changing is phenomenal. This is my whole job and I find it difficult to keep up with. So there’s no way that people not working in this all the time can keep up with what’s happening.” (Participant 4, Commercial Semi-state)

Interviewees from government departments and agencies also observed that the businesses they were supporting were challenged to manage the change required, particularly smaller businesses with fewer resources. There was a widespread sense that SMEs would need more support.

“The SME base tends to be extremely time poor, as in keeping their business running, keeping the lights on, paying staff, getting product to markets, providing service – that occupies all of their attention and is the bread and butter of what they do. So asking them to engage in what might be a medium term, strategic conversation about what does a transition to a low carbon economy mean for them, that’s a difficult conversation for them to really get involved in.” (Participant 30, Government)

People, Skills and Leadership Gaps

The challenge of change management is exacerbated by gaps in resources. Participants from all categories agreed that there was a shortage of people and skills in crucial areas such as planning, construction, retrofit and carbon accounting. The shortages were identified both in capacity (number of resources available) and capability (specific skills). Some suggested that important skills in some of these sectors are not valued enough in Ireland and are not being developed quickly enough. Participants also expressed concern about lack of capacity in the civil service to implement climate policy alongside their existing responsibilities.

“In our sector, there's a massive skill shortage. There's a massive resource shortage. So our people have never been busier, and we can't get more people. It's a real problem. So everyone is beyond capacity. At the moment, I'm hiring for a carbon manager and a carbon engineer. Those skills don't really exist. Okay. So we're going at a pace that's too quick for education or the skills to feed into us.”
(Participant 26, Company)

“Someone had a day job and it was just lumped on them. Oh, there's a new action, there's a new climate action plan. I mean, the system is great for action plans and strategies and plans and someone already has a day job and... they were already flat out with the [other] area. Conflicts around skills, capacity, resource capability... leads to a natural resistance.” (Participant 35, Government)

Very few heads of sustainability in our study reported directly to the CEO of their organisation and typically there appeared to be little engagement at CFO level although that may change with the introduction of CSRD. Despite this, many company participants emphasised the support for sustainability from senior management in their companies. However, they also referenced the challenges of ensuring that business leaders truly incorporate emissions reduction plans into business activities, particularly where there is a perceived cost.

“So with management in the company you have different mindsets in regards to sustainability. Some see it probably more as a nuisance and cost and more things to do and others see the urgency and the need that we have to do some things. So it's going to be a challenge for managers that have been managing a business successfully, over the last decade or more, to now have to consider social and environmental aspects.”
(Participant 34, Company)

“But just, again, anything that was going to cost any more money there is just no appetite for whatsoever.” (Participant 26, Company)

Businesses emphasise the role of government in providing leadership and acting with urgency, given the ambitious plans that are in place. Some express frustration at delays.

“There are huge challenges for us and we're constantly trying to get the government to roll out the policy and go quicker because businesses are ready and can go faster. But infrastructure is holding us back.”
(Participant 7, Commercial semi-state)

“I think we overanalyse and we spend a lot of time sometimes getting reports done that are out of date before the bloody things are written. So there needs to be urgency. Urgency has to be at the core of everything that the government does in relation to climate change.” (Participant 44, Company)

Systemic Challenges

Policy Gaps and Conflicts

Policy challenges included specific barriers such as lack of guidance for particular technologies, and broader questions such as the nature of industrial development in Ireland. **Policy gaps** were highlighted in the areas of green procurement, hydrogen, biofuels, carbon capture and storage, district heating and the timetable of renewable energy auctions. We note that the government has since published its hydrogen strategy (Government of Ireland, 2023a), green procurement strategy (Government of Ireland, 2024) and biomethane strategy (Government of Ireland, 2024a).

Some participants, including from companies, government, and state agencies, commented that the policies were not yet in place to meet the carbon budgets, particularly in agriculture but also in energy and transport.

“I'm still waiting for the policy makers to actually make policy, how we're going to get to the target. There's no operational way, how are you going to get it – regulation, taxes, you know, market measures, education...? The sector has a target, but there's no link to production.” (Participant 14, State Agency)

They also expressed concern about the ability of policy development to match the pace of decarbonization required to meet the carbon budgets.

“And then for government, I suppose, whilst we have the 2030 targets for offshore wind and onshore wind, the auctions that are set don't look like they're going to add up to the target over time. So we just don't have that pathway to get to the target.” (Participant 37, Company)

Industry experts and some government and semi-state participants cited a **lack of vision** from government for industrial development in Ireland compatible with national carbon budgets. They pointed to a lack of political consensus and buy-in on growth priorities and critical infrastructure such as airports or data centres, as well as a need to consider which types of inward investments the country should be attracting.

“The government should be assessing how we should grow as a country over the next 20 to 30 years. What that looks like, how we need to facilitate that, how we're going to prioritise that growth, what critical infrastructure do we need to keep to maintain the country and economy that we need and who do we need to engage with?” (Participant 4, Commercial semi-state).

Several participants, including consultants, industry bodies, government and industry experts, highlighted **policy conflict** between emissions reduction targets and industrial, housing and agriculture growth targets.

“If I'm a construction company and I'm being told I have to build 50,000 houses over the next three years or whatever it is, how do I square that circle in terms of keeping my emissions down?” (Participant 10, Consultant).

“At the moment we have Food Vision, we have EI [Enterprise Ireland] Strategy, then we have the Climate Action Plan, and they don't tell the same story... We're telling two stories and we're dialing them up depending on who the storyteller is, who the audience is, and there's no plan.” (Participant 3, Industry Expert).

Energy Infrastructure and Systems

The challenge of decarbonising the energy system in Ireland was a consistent theme across participants. Concerns included electricity infrastructure capacity, technology maturity, competition for energy, supply chain delays, and policy and financial barriers. Many businesses noted that they were dependent on grid decarbonisation for Scope 2 emission reduction, and participants from all categories expressed concerns at the **capacity of the Irish electricity grid** to cope with the increased electricity demand necessary for decarbonization.

“The development of the grid... It's slower than you would like.. And if we are going to electrify all this transport, demand could treble or quadruple. And really, we're not seeing the grid build up that scale. So as we all plug in our electric cars, what's going to happen there?” (Participant 37, Company)

Policy barriers to increased renewable energy generation cited included **planning delays**, connection restrictions and medium-term **policy uncertainty**, for example in the event of a change of government, which could lead to stranded assets. Competition for energy was also mentioned, namely demand for bio-based resources for both food and energy, and demand for electricity from data centres.

Emerging technologies such as hydrogen, biomethane and carbon capture and storage were cited as solutions for hard to decarbonise sectors such as cement manufacture or aviation. But despite the perceived emphasis on some of these solutions, major barriers to development included technology readiness, material and product shortages, the cost and scale of investment, and lack of supportive policies.

“Clients with heat requirements that are greater than 120 degrees, that's when it becomes more challenging. You need a gas solution or a biomethane solution or hydrogen solution which gets a lot of noise, or some other green gas solution. And that's where obviously the technology isn't there yet.” (Participant 29, State Agency)

“A lot more is happening in other countries... We need 10-12 large scale anaerobic digesters across the country, we’re a long way off that.” (Participant 14, State Agency)

Business and Economic Models

The need for new business and economic models was discussed across participant categories. A number of companies spoke of the challenge of increasing capacity while reducing emissions. Some participants suggested that a fundamental change in business models might be required:

“I think this capital competing platform that we have driven over the last decade, it’s not fit for purpose anymore. Collaboration and business models and longer term thinking needs to be valued more. These are the key.” (Participant 34, Company).

“If they’re a factory, a manufacturing factory, they’ll go to the likes of the SEAI for a grant, they’ll get it depending on the energy intensity of the company. But maybe nobody is challenging what the business model of the company or the industry is. And then we’re rewarding essentially a damaging business model that no amount of energy efficiency is going to transform.” (Participant 3, Industry Expert)

Only one business participant considered whether their own business products were viable longer term.

“I think if you talk about [our products], are they really an essential product? Maybe not, maybe in some circumstances, or for some people they are, but, yeah, it’s obviously debatable. If we look at the size of the climate crisis, I think it’s also really a necessity for our sector to look at becoming sustainable or otherwise having some very serious question marks around the viability of the long term aspect of our business.” (Participant 53, Company)

In some industries, businesses felt a negative perception of their sector and associated emissions, and highlighted efficiency gains, reduced emissions per unit of product.

Industry experts however questioned the credibility of efficiency gains, questioning the growth capacity of high-emitting industries including fossil fuels and agriculture. Along with participants from state agencies, they suggested that emissions reductions will not occur if activity continues to rise, highlighting the need to examine economic growth at national level.

“I suppose there’s still fundamental limits to mitigation in most sectors. Agriculture is an example where you can come up with an awful lot of different mitigation measures but if the activity keeps going up and up and up, you can’t mitigate all of it necessarily.” (Participant 54, State Agency)

Government and state agencies discussed the challenge of finding a balance between jobs and emissions reduction and some suggested lower-carbon and diversified growth.

“We’re starting to see a little bit of a conflict where you’ll have community elements that really understand the whole climate change agenda and they’ll have particularly strong opinionated views of where the world should be. How do we marry that with the needs of economic development and business and keep that balance? Because at the end of the day some of this is going to require choice and a judgement call because fundamentally we’re not driving our local communities, creating jobs, creating employment but you’ve got to do that in a sustainable manner. What does that look like?” (Participant 42, State Agency).

Other Challenges

A number of additional systemic challenges were mentioned by a small number of participants:

Mental blocks – established beliefs counter to climate action and lack of engagement from individuals including policymakers, farmers, businesspeople and wider society, for example:

“The mobilising society bit is the bit that’s missing. It’s happening in different silos

sometimes, but there isn't. And partly, of course, at a political level, it's not spread. I mean, there are some people who talk strongly about climate, but not enough.”
 (Participant 11, Industry Expert)

Climate change - some businesses are already experiencing the impact of climate change on their operations, for example:

“So climate change is having an impact on those areas and has had a direct impact on our business. Puerto Rico, for example, has had some significant hurricanes, wildfires in California, water scarcity.” (Participant 45, Company)

“There are definitely impacts. Our most strategic and our biggest suppliers are actually based in regions that are anticipated to get wetter with climate change, which also isn't always good news. Thus far it's been fortunately not that big of a risk or that big of an impact. But, yeah, we're seeing it and we'll probably start seeing it more and more”.
 (Participant 53, Company)



Figure 7: Summary of challenges and opportunities.

Opportunities

Participants spent considerably less time discussing opportunities than challenges. Two key themes emerged.

Industry-specific Opportunities

The focus here was largely on opportunities in the energy sector, particularly in offshore wind but also in hydrogen, biofuels and carbon capture and storage. Opportunities were also identified for the construction and agriculture industries, and for high tech research and development.

A large number of interviews touched on the opportunities presented by advances in **renewable energy**, both for Ireland as a whole and for industry. Renewable energy was seen as providing the foundation for electricity to be “the workhorse of decarbonisation for other sectors like heat and transport” (Participant 37, Company).

Across the spectrum of businesses and government entities, offshore wind was referenced as an enormous business opportunity for Ireland, setting the country up for energy security and to become a net exporter of energy.

“Clearly the offshore wind sea area we have is a huge asset, and everybody gets that. So there’s a lot of investors looking at the offshore wind potential. So the idea being A) that we could become a major exporter of green electricity through green power into Europe that needs it and B) as an attraction to drive a lot of other industry here that needs a lot of energy.” (Participant 29, State Agency)

There was a strong appetite for access to **alternative fuels** across different industries, whether that be Sustainable Aviation Fuel (SAF) or green hydrogen or biogas from Anaerobic Digestion units. Although the opportunity is seen as significant, enthusiasm is tempered by a sense that Ireland has been slow to move on establishing necessary infrastructure.

“So the opportunities are huge. The risk... is that we wait too long to jump on the bandwagon. Especially in cutting edge tech like green hydrogen, carbon capture and storage, even sort of cutting edge nuclear technology. Whether some of this might happen, some of it might not happen. But if we sit on our hands and wait for other people to develop it, we’ll ultimately be the market takers rather than market makers”.
(Participant 30, Government).

Some interviewees noted that farmers could benefit from applying **nature-based solutions** to the decarbonisation challenge. Examples included rewetting peat soils, or using parts of farms for ecosystem restoration. This could have the double benefit of protecting farms and the environment.

Business Benefits

The benefits of emissions reduction were cited as an opportunity both for business and for Ireland. For businesses, there were lower energy costs, access to finance, reputation boost, reducing risk and increasing resilience, and the opportunity to differentiate the business. The opportunity to win new business through green procurement requirements were noted.

Eighteen of our interviews highlighted the potential for **market opportunities** emerging from the carbon transition. Leading in sustainability was seen as potentially offering competitive advantage to firms, particularly as customers and other stakeholders (e.g., employees, investors) become more conscious of the need for climate action. Some interviews highlighted the opportunity to retain existing customers and attract new business, and described sustainability as a ‘pillar of growth’.

“We see it as a huge opportunity for growth. First of all, it’s the right thing to do because we are part of the problem. But we also see this as a huge growth opportunity and actually a very strong pillar in our business. But we see sustainability as one of those pillars of growth because we know we’re ahead of the game at

the minute” (Participant 57, Commercial semi-state)

The positive **impact on employees** was also highlighted as an opportunity – whether current staff or talent being recruited externally.

“It has helped us with staff retention. So we've got a sustainability role now and people internally want to apply for it... Even attracting new staff, they'll always ask now, what is our agenda? It seems that the young people are really keen on it.” (Participant 57, Commercial semi-state)

Some participants highlighted the **competitive advantage for Ireland** of decarbonising industry and creating jobs in lower carbon industries:

“There's a big strategic opportunity... which is, there's a race to decarbonisation in ways here, with investment talent, consumers looking at the environmental footprint of products and services. If we can deliver that ahead of other countries, that's a huge opportunity.” (Participant 17, Industry Expert)

“Look at six years ago, [this business] wasn't around. Today we're employing, between direct and indirect, probably 30 people. Ireland is a very competitive country, and there's a lot of hungry animals out there.” (Participant 44, Company)

Access to finance, both public and private finance, was highlighted as an opportunity. One participant suggested that companies access EU funding, such as the EU innovation Fund.

“it's definitely an area that there has to be much more potential for Irish companies to take advantage of.” (Participant 10, Consultant)

Interviewees in publicly traded companies were very conscious of the opportunity to impress investors.

“Because what that allows me to do is to go to CEOs and CFOs and the board and say, right, we're currently net zero by 2050. But you know what? If we got there quicker, we're going to win business. And if we got there quicker, I'd be pretty confident investment fund A and Investment Fund B would want to own more of our stock because now you're creating a business case for doing it rather than the stick of regulation”. (Participant 23, Company)

Companies noted the value of intra-industry **collaboration**, working with partners to deliver infrastructure projects or engage on policy, and working with suppliers to share knowledge and support best practice. Cross-industry collaboration and sectoral initiatives were also mentioned but it was noted that they can sometimes be problematic.

“What you'll find is that companies, through their networks and through the other players in their sector, will want to be part of those sectoral initiatives, but it still doesn't stop them from wanting to be competitive on their own”. (Participant 12, Consultant)

“I think as an industry we're probably still struggling with partnering up with our competitors to look at the tech, which is probably something we need to cop on...the intra-industry collaboration is weak, but I expect it to grow.” (Participant 23, Company)

Participant Recommendations

Policy and Regulation

Participants proposed policy and regulatory changes to incentivise action and penalise poor performance. Suggested **incentives** included tax credits, incentives for big infrastructure projects and building sustainability into procurement contracts. One interviewee suggested that agriculture incentives should change to ensure that farmers are paid for the provision of public goods. Another participant noted that current incentives are inadequate as they reward action instead of outcomes.

There were many calls for policies to support offshore wind, biomethane, hydrogen and CCS, including changes to planning. Policy clarity, particularly in relation to biofuels and hydrogen, and long-term planning in climate policy were also recommended.

In contrast, several participants, across categories, argued that incentives had not worked and that more **regulation** was required. For example,

“There has to be regulation because people are not going to make the sort of significant changes that need to be made that do affect their profits unless there is regulation.. It's just that reality. The market won't do it voluntarily. That's ridiculous because they won't. So there has to be just very clear limits set out and that's it” (Participant 2, Government)

“So we will not be able to do it by ourselves. We will need the government and regulation so actually it's a bit of a carrot and stick, we won't be by ourselves.” (Participant 50, Company)

The Inflation Reduction Act in the US was cited as legislation which will drive low carbon investment, while one participant suggested creating a law that gives company directors a climate duty.

Some wanted **penalties** for poor performance. It was suggested by more than one participant that the carbon budgets lacked “teeth”:

“If carbon budgets were to come in and they were to have some sort of penalty, if they had some teeth, what it would do is it would probably cause a fair bit of panic. It would make people take note, it would make people measure the scale of the problem. By measuring, you're able to manage the emissions and by managing, then you're reducing” (Participant 26, Company).

Others advocated placing certain requirements or conditions on companies. Reforming public sector procurement so that “green” companies are given preference was mentioned, along with “climate proofing” new infrastructure such as data centres. A government respondent suggested that data centres should be required to have their own renewables or direct renewable power purchase agreements and others suggested that government grants should only be open to those who understand their energy use and have an energy transition plan. Similarly, one participant said that biodiversity net gain should be a requirement for Renewable Energy Support Scheme (RESS) projects.

Technology

There was an emphasis from company respondents on technologies, often those which do not yet exist at scale such as biomethane, hydrogen and sustainable aviation fuel (SAF). Opinions differed as to the value of biofuels and hydrogen. Some thought they had a major role to play in replacing fossil fuels:

“Renewable gas has to be part of the future because the sun doesn't always shine, the wind don't blow. But [the government] are so focused on the electric side, they're not focused on renewable gas. They're slow on trying to develop the methane strategy and hydrogen strategy. And really we need to start on that because they're not engaging with industry on that or why do they have that gas?”

The industry is screaming for biomethane, the high heat users are screaming.” (Participant 7, Commercial semi-state).

Others highlighted challenges. For example, one interviewee cautioned against overvaluing the potential of biomethane to decarbonise the gas grid:

“I guess the first thing there should be very careful with the green washing. So like 99.99% of the gas on the Irish grid is fossil gas. So there is a vanishingly small amount of biomethane being injected to the grid in Kesh. There's a lot of talk about where this can go, but it's really pilot level at the moment... even getting to 20% biomethane in the next 20 or 30 years would be an enormous step forward... So there's just a real danger that business or suppliers, they greenwash the 20%, and then people are actually still left burning 80% fossil fuels on the other side as well”. (Participant 36, State Agency)

Investment in research technology centres was also suggested, supported by regulatory sandboxes, where the government would allow organisations to market test new innovations under less stringent regulatory conditions than usual.

Public and Private Financing

Many conversations on finance focused on the need for government investment. Pointing to the level of infrastructure development required to meet climate action goals, commercial semi-states called for large scale capital funding for infrastructure. Joint funding models leveraging private finance were suggested for semi-states and one interviewee pointed to joint ventures in offshore wind as a useful model.

The role of private finance was also emphasised. A government participant noted that the public sector is currently paying for about half of the investment required, suggesting that private sector investment should be increased in proportion to market share. There was general agreement that finance needed to be redirected in line with the

EU Green Taxonomy. A specific recommendation was that financial institutions should offer low-interest loans for low carbon projects, as in this domestic financing scheme:

“There's a scheme that the government has planned for a few years... the idea was to borrow money from the European Investment Bank and... there will be a guarantee against default. And then the retail banks could give green loans using the European funds at a very low interest rate... And every year [the plan] gets rolled over, and I'm not too sure why, which is very frustrating because there is a large proportion of domestic customers out there who probably have a fairly low mortgage, have been there for a while, probably have a little bit of money to spend. And if they got a low interest rate loan where their repayments aren't that different from what they're currently paying for their fuel bills, I think a lot of people would go for that because they'd say, okay, it's coming.” (Participant 18, Commercial semi-state)

Shared Vision

Vision and leadership were called for from both government and business. It was suggested that government needs to communicate that we all need to engage in climate action, to make it clear that this will be difficult, but also highlight opportunities. This was seen as important to countering lack of engagement from individuals including policymakers, farmers, businesspeople and wider society, for example:

“The mobilising society bit is the bit that's missing. It's happening in different silos sometimes. And partly, of course, at a political level, it's not widespread. I mean, there are some people who talk strongly about climate, but not enough.” (Participant 11, Industry Expert)

A business participant noted some frustration with the focus on individual responsibility:

“I'm really frustrated with how much time we have lost by putting the responsibility and the onus on consumers to make more environmentally friendly choices when they

don't have the information, they don't have the resources, and they don't have the options available to them. I think it's a real cop out and I think businesses and governments have leaned on it for the last 20 years.” (Participant 4, Commercial semi-state)

This participant also asked “what do we want Ireland to look like in 2050?” and argued that government is lagging behind business in terms of target-setting on climate. Another echoed the question of vision:

“So there's this misalign between kind of plastering over the bad stuff, but a lack of a vision. Where exactly are we trying to get to with the budget? If we achieve them on time, what does industry in Ireland look like?” (Participant 3, Industry Expert)

Others recommended that business should take a leadership role and one participant suggested that government should bring together and listen to business voices who are showing leadership in this space and perhaps convene a citizens’ assembly on the role of business and industry in Ireland. On the theme of business and government working together, one participant pointed to the Netherlands where the climate law was agreed with different sectors through their National Climate Agreement (Government of the Netherlands, 2019).

Training - How and Who

In response to the challenge of people and skills shortages, some participants advocated for better education and training opportunities. While few participants mentioned ‘just transition’, one interviewee did highlight the future training needs of people in emissions-intensive industries such as fossil fuels, aviation and agriculture. Some focus group participants called for new and better training for sustainability professionals:

“If you want someone with the sustainability expertise, the business experience, that collaborative individual doesn't seem to do this at the moment... Yeah, there isn't a pipeline there, is there? So we've seen that all the time. I think we'll have to educate internally, but where do we send them?” (Participant 25, Company).

A government participant suggested that industry has a bigger role to play in the training and upskilling required:

“Sometimes you feel like they just throw up their hands and go, what's the government going to do to solve my skills gap? And I'm going, well, pay people more money and train some of them yourself. That'd be a start.” (Participant 1, Government)

5. Discussion

Three key themes emerge from the findings: the challenge of measuring emissions, the relationship between business and government, and how we can move forward and scale up. The discussion here provides the foundation for our recommendations in the next section.

Measuring What Matters

Awareness of climate policy and enthusiasm for climate action were high among our participants. However, understanding of and engagement with national carbon budgets was extremely variable. Engagement with climate policy, and with carbon budgets in particular, was largely from two types of business: commercial semi-states or companies with significant Scope 1 emissions, categories which overlap in many cases. These companies are subject to more legislation and policy than most firms, some newer, like the NewERA climate action framework for CSSs and some more established, like EPA pollution licences. They have more experience with and incentive to measure, disclose and reduce GHGs. Scope 1 (and Scope 2) emissions are also easiest to measure and to connect with the national sectoral ceilings.

The Industry sector, which accounts for 11% of national emissions, is a case in point. Emissions are largely Scope 1 and there is a good knowledge of sources and pathways to reduction. As one of our interviewees noted, 70% of industry emissions in Ireland are caused by 60 companies. These are the high emitting industries familiar from the ETS - power generation, cement and aluminium manufacture. Per our findings, the challenges in these hard to decarbonise sectors, and to Scope 1 in general, relate chiefly to systemic issues of technology readiness and policy conflict and clarity.

These challenges are closely connected with energy, which accounts for 17% of national GHG emissions. Several of our interviewees noted that they are reliant on grid

transformation to reduce their Scope 2 emissions (from purchased electricity). There was optimism but also concern about the time, investment and human resources required to electrify the grid, and its capacity to cope with predicted demand from data centres. This reflects a wider policy debate - the Ministers for Enterprise and Environment recently clashed over data centre electricity demand (McQuinn, 2024).

Where businesses struggled most, and consistent with existing research (BITC, 2020, Nyhan and Fitzgerald, 2022), was with measuring and managing Scope 3 emissions. This is hugely problematic, as Scope 3 emissions account for the majority of emissions in most industries, with the exception of heavy industry (e.g. cement, steel) and energy production and generation (CDP, 2023, Figure 8). It is estimated that globally, firms may be underestimating their Scope 3 emissions by 44% (Nguyen et al., 2023).

For many businesses, CSRD is the first time that they will be required to engage seriously with Scope 3, and they are concerned about data collection and quality. For example, our participants questioned the quality of carbon offsets and these concerns are well-founded; less than 5% of offsets actually remove carbon from the atmosphere (Rathi and Elgin, 2022). Others we interviewed suggested that third party certification can give businesses assurance over their Scope 3 emissions, including offsets. Furthermore, greater involvement of business finance teams can help with reduction of harder to manage emissions, with controls put in place which mirror financial controls, such as internal carbon budgets and incentives for performance.

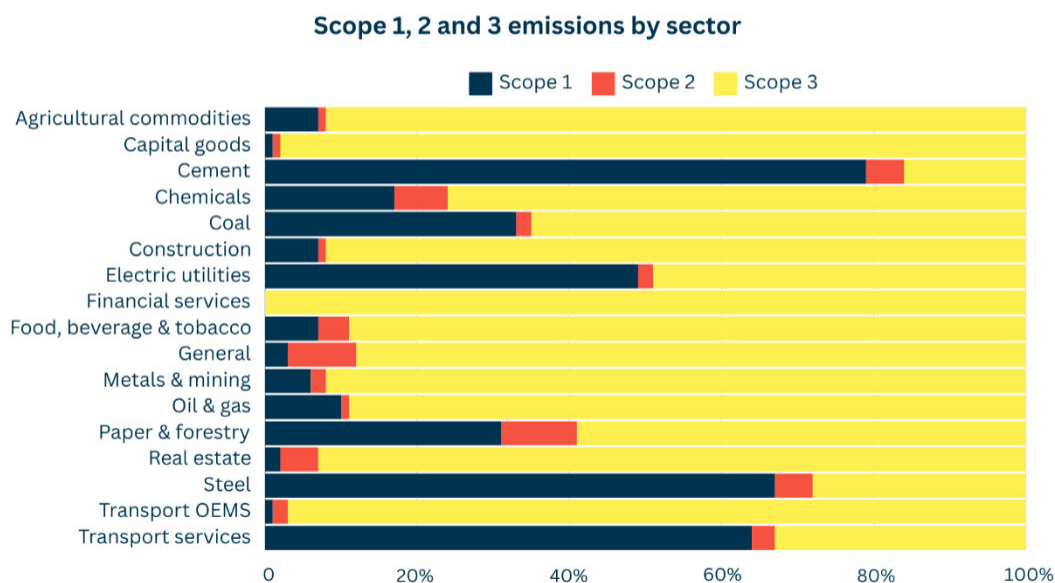


Figure 8: Scope 1, 2 and 3 GHG emissions by sector (Adapted from CDP, 2023).

Whose Power, Whose Responsibility?

In a 2020 report, the UK Climate Change Committee described Scope 3 emissions as “a consequence of the activities of the company” (UKCCC, 2020). Larger companies we interviewed consistently suggested that Scope 3 is challenging because they cannot “control” their suppliers or customers. Those suppliers, however, often smaller companies, complained of pressure from large customers to reduce emissions, without support to do so. Large companies are typically the most powerful actors in the supply chain (Jack et al., 2018) and research suggests that they can play a role in supporting sustainability across the supply chain through rewards and incentives (Meqdadi et al., 2019). There is an opportunity here for more committed partnerships where focal firms support suppliers, including financially, to decarbonise. For example, some manufacturing companies we interviewed spoke of partnerships with large energy companies and universities to trial new energy technology at their manufacturing plants. Others described providing sustainability training and support to smaller suppliers.

There is also a role for government to play in supporting SMEs in particular to achieve emissions reduction. Business recommendations typically turned outwards, often asking governments for more supports and for incentives for “good behaviour”, for example for reporting or for reducing emissions. Some suggested incentives included tax credits, regulatory sandboxes, procurement advantages and low-interest loans. Some interviewees felt that government grants for climate action were not promoted enough, and also that they were more applicable to heavy industry sectors. Policymakers we interviewed, however, suggested that uptake is slow on the grants and businesses are not sufficiently engaged. There is opportunity for better collaboration and communication between business and government here. This is also true for skills development and training: many government initiatives are in place but companies are still struggling to recruit sufficient numbers of people with sustainability expertise.

Regulation was a divisive topic. Some felt that regulation, particularly CSRD, could actually prevent action, with resources used for disclosure as opposed to driving action. Others however, typically businesses at an advanced level of carbon management, welcomed additional regulation as it creates a

level playing field. Our findings illustrate that the new national regulation and policy, including the Climate Act and carbon budgets, and the Public Sector Mandate and NewERA framework, have focused the attention of businesses affected and created a stronger impetus to reduce emissions. For these businesses however there was a fear of regulation overload if they are also subject to CSRD, suggesting that there is opportunity for better regulatory coherence at national level.

A common perspective from companies was that their own internal targets were more ambitious than the government climate targets, particularly when they had set SBTs. Although SBTs were seen as rigorous and challenging and were recommended for improving carbon measurement and management, we also heard some concerns about the methodology used and the potential for focusing on carbon intensity rather than reduction. This echoes criticism in the literature of the SBT methodology and approach (Robiou du Pont et al., 2024; Bjørn et al., 2021). The popularity of SBTs is reflective of a wider shift from a rules-based approach (for example the GRI Guidelines) to a goal-based approach to engaging with sustainability. However, with specific quantitative goals such as net zero, the potential for tensions and trade-offs in pursuing these goals is high and can lead to suboptimal outcomes (Grabs and Garrett, 2023). Reflecting this, in April 2024 SBTi removed the net zero targets of over 200 companies for failing to present credible pathways to target realisation (Bryan and Pooler, 2024). Ultimately it is most important to focus on outcomes rather than either goal-setting or reporting.

Moving Forward and Scaling Up

A consistent theme was policy conflict, and the wider issue of a holistic economic vision for Ireland. Our interviewees raised crucial questions around future directions for policy, business, and the country as a whole. This was most prominent when discussing emissions-intensive industries such as fossil

fuels, aviation, cement production and agriculture. For example, some participants noted the challenge of meeting housing and agrifood export targets while also meeting climate action targets. There was a sense from several interviewees, from both business and policy, that in relation to economic and industrial development on one hand, and climate and energy targets on the other, the numbers do not add up. The challenge of maintaining business and national economic growth within climate limits was a recurring issue. Trade-offs need to be acknowledged and addressed by both business and government. For example, climate action may be an opportunity for some businesses, such as those in the offshore wind sector, but a threat which may require business model overhaul for others, as has happened with Bord na Móna's move from peat to tourism and renewable energy.

A more cohesive approach is needed from both business and government which takes both a systemic and sectoral view of the economy. In 2023 the CSO published its Decoupling Emissions from Economic Activity report. This report details how outputs from some sectors, particularly agriculture, forestry and fishing, are used by other sectors (CSO, 2023). We see for example that 35% of output from agriculture, forestry and fisheries is used by the food manufacturing sector in Ireland, 17% is used by beverage and tobacco industries and 55% is exported. Similar data is available for the cement and other non-metallic minerals (mostly lime) sector, which shows that 50% of the output is used by the construction sector (CSO, 2023). All of these actors need to be involved in emissions reduction efforts, not just the primary source of the emissions. Growth at one end of the supply chain impacts the other and business and policy targets throughout the value chain must be coordinated to allow reductions to be delivered at sector level. Cohesion and coherence will also support financing. If the projected €119bn investment by 2030 is to be achieved, huge investments will need to be made by the private sector, as well as CSSs and the public sector (Government of Ireland, 2022, MacNamara, 2023).

Much of this will be in new technologies, and our interviewees had divided opinions on key technologies such as biomethane, hydrogen and carbon capture and storage. They were largely optimistic about the potential of new technology, but pessimistic about technology readiness and sceptical about plans and progress. Participants gave the impression that there is significant international private and public finance available, but more work is needed to understand where this investment should be directed and which sectors of the economy are to be prioritised. Policy coherence is evolving, as illustrated by the more focused actions of the 2024 Climate Action Plan, but it is as yet unclear where the investment will come from to provide solutions at scale and with the urgency required. In particular, it is important to ensure that investment addresses some of the key funding gaps identified by our research, such as supporting SMEs to decarbonise, to provide quality jobs and a just transition.

6. Overall Recommendations

While tackling climate change requires action from all actors across society, our recommendations reflect the themes of our findings and therefore focus on business and policymakers. Policy, investment and best practice in this space are evolving rapidly, and there have already been many developments since our interviews took place in 2023. For example, the EU has launched the Corporate Sustainability Due Diligence Directive (CSDDD) and new policy and legislation in Ireland have been developed including the reformed Planning and Development Act, the Green Public Procurement Strategy, the Hydrogen Strategy and the Biomethane Strategy. Our recommendations therefore focus on the major issues raised by our analysis that have not yet been addressed. Recommendations to address selected operational challenges identified by businesses are shown in Figure 9.

| | | |
|---|--|---|
|  | Challenge: Cost of decarbonisation | Cost, return on investment and payback period of decarbonization projects |
|  | Recommendation: | Establish top management buy-in for initiatives and leverage national and local government supports, see: enterprise.gov.ie/en/what-we-do/supports-for-smes/energy-supports/ |
|  | Challenge: Data collection | Access to data from downstream and upstream supply chain actors, data quality, inconsistency in methodologies. |
|  | Recommendation: | Develop close, trusting relationships with suppliers, seek independent verification of Scope 3 emissions and engage the finance team with carbon measurement and management. |
|  | Challenge: Shortage of people and skills | Skills shortage in crucial areas such as construction, retrofit and carbon accounting. |
|  | Recommendation: | Partnership between business and government required to develop new and better training for sustainability professionals. |

Figure 9: Selected operational challenges and recommendations.

Policy Recommendations

Develop a holistic vision for industrial development

Interviewees highlighted policy conflict relating to emissions-intensive industries such as fossil fuels, aviation, cement production and agriculture, for example, the challenge of meeting housing and agrifood export targets while also meeting climate action targets. Enormous strides have been made in infrastructure investment, policy development, and the provision of government supports for business climate action. A cohesive vision for industrial and economic development which aligns with climate goals is the next step in ensuring a just transition, and leveraging finance to support it. Some of our interviewees and focus group participants, including some from companies, talked about the challenges of business growth in the context of Irish economic development. The carbon budgets provide a valuable framework to organise economic goals and activity within climate limits. However, currently the role of business, and the focus of the Department of Enterprise, Trade and Employment, is largely on heavy industry and reducing emissions from commercial buildings. There is a need to reconceptualise the role of business to recognise how it influences the major sources of our emissions - Agriculture, Energy, Transport (Figure 1). Forums are needed for business, workers, policymakers and other stakeholders to discuss growth, policy coherence and the future of key sectors, and develop a shared socioeconomic vision for a net zero Ireland.

Consolidate and strengthen domestic regulation

Regulation at national and EU level has focused business minds, for example the Public Sector Climate Action Mandate and the NewERA framework for commercial semi-states have created an expectation in the relevant businesses not just to measure and disclose but to reduce emissions in line with

national targets. However, there is considerable concern among businesses about capacity to meet disclosure obligations, particularly under CSRD. There is an appetite for greater incentives to reduce emissions, but which reward outcomes i.e. emissions reduction, rather than action such as disclosure. Many of our interviewees also suggested that they would welcome penalties for non-compliance or poor performance, and wondered whether non-compliance with the carbon budgets would result in penalties.

New supranational regulatory frameworks such as CSRD provide a golden opportunity to consolidate and strengthen national policy and legislation and incentivise businesses to disclose and reduce emissions simultaneously. Emissions reduction requirements could be integrated into disclosure legislation, and an associated framework of incentives and penalties put in place. It is important to ensure that performance is rewarded, not just disclosure or compliance, as disclosure does not necessarily lead to emissions reduction. Companies could be required to connect their emissions, including Scope 3, with the national carbon budgets, and disclose their analysis and commitments as part of CSRD double materiality assessments, which require companies to consider both the impact it has on society and the environment, as well as the relevant impact on the company, when identifying material items for disclosure. Existing domestic frameworks such as NewERA can be integrated with supranational regulation to begin to address business capacity concerns. This will support connecting business emissions to national climate policy and carbon budgets, as is the case in existing legislation pertaining to the public sector and commercial semi-states.

Business Recommendations

Take responsibility for emissions in a national context

Businesses can utilise the carbon budgets as a tool to reframe emissions accounting through a sectoral lens or value chain lens. Our findings highlight the challenge of measuring and managing Scope 3 value chain emissions, and lack of awareness among businesses of how these emissions map to national carbon budgets. We recommend mapping company scope assessments to the carbon budgets, aligning impacts throughout the value chain to the national emissions sectors and taking responsibility for Scope 3 emissions reduction in a national context.

This can help firms to understand better how they drive Scope 3 emissions within the value chain, how this connects to national emissions, and where their business can contribute to reducing Ireland's emissions. The starting point is the national emissions categories (Figure 1), which in turn are linked to the sectoral emissions ceilings (Table 1). Carbon Disclosure Project provides technical guidance for Scope 3 emissions for industry sectors (CDP, 2023). By breaking down each material category, businesses can connect emissions to the national categories. For example, as one of our interviewees discussed, a company in the hotel sector can look at the carbon budget categories - Transport, Buildings, Agriculture for example, and map its activities and inputs and outputs, such as construction, food or travel, whether

they fall into Scope 1, 2 or 3 emissions, to these national categories. In this way they can evaluate their impacts at national level and develop a net zero strategy for their business which is in line with the national targets. This will also counter overreliance on global company targets, the methodology of which is increasingly challenged.

Direct investment to support SMEs and address people and skills gaps

The opportunity of private sector finance for climate action has not yet been fully exploited. Along with capital investments, for example premises upgrades and investment in new technologies to decarbonise heavy industry, financing must be directed to support SMEs to decarbonise and address people and skills shortages through training and skills development. This will support a just transition, where those organisations and people most impacted by decarbonisation, such as small businesses and workers, are supported. Companies reliant on suppliers and customers for Scope 3 emissions reduction can play an invaluable role in investing financial and other resources in partnerships to reduce emissions. A coordinated approach to investment, including intra-industry partnership and funding models which maximise the potential of commercial semi-states, for example to develop big infrastructure projects, is needed.

7. Concluding Remarks

In our interviews there was little discussion of the impacts of climate change, with only two companies noting how extreme weather has already affected some of their sites globally. Climate change is more likely to be viewed as a risk to be managed or one more reporting obligation, integrated into daily business as usual rather than the existential threat it presents. Most of the businesses in our sample had managers and/or teams whose roles included responsibility for sustainability and for emissions reduction plans. Many companies included sustainability as part of their overall strategy, however the environmental and social impacts typically come second to the economic impacts of a decision, with a “business case” needed for sustainability initiatives. Furthermore, most sustainability leads we interviewed were not at executive level. It is positive that businesses have integrated climate action into their strategies, but there is a danger of losing sight of the reality that this is a game-changing problem. Tackling climate change requires new business models, and for some companies, total reinvention.

Interviewing both business and policymakers, we found that businesses typically highlighted what policymakers could do for climate action, while policymakers talked about what business could do. This is not surprising; it is easier to direct action outwards. We need collective, coordinated responsibility to address climate change, and this involves every business, every government and every individual. One of the core principles of the Paris Agreement is the recognition of “common but differentiated responsibilities and respective capabilities, in the light of different national circumstances” (CBDR-RC). Ireland is an emissions-intensive economy with high responsibility for climate change (Central Bank of Ireland, 2023), and strong respective capabilities to address it. Businesses are among the most powerful actors in our economy and they can take the lead in achieving the national climate targets.



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