Business Working Together for a Low Carbon Future

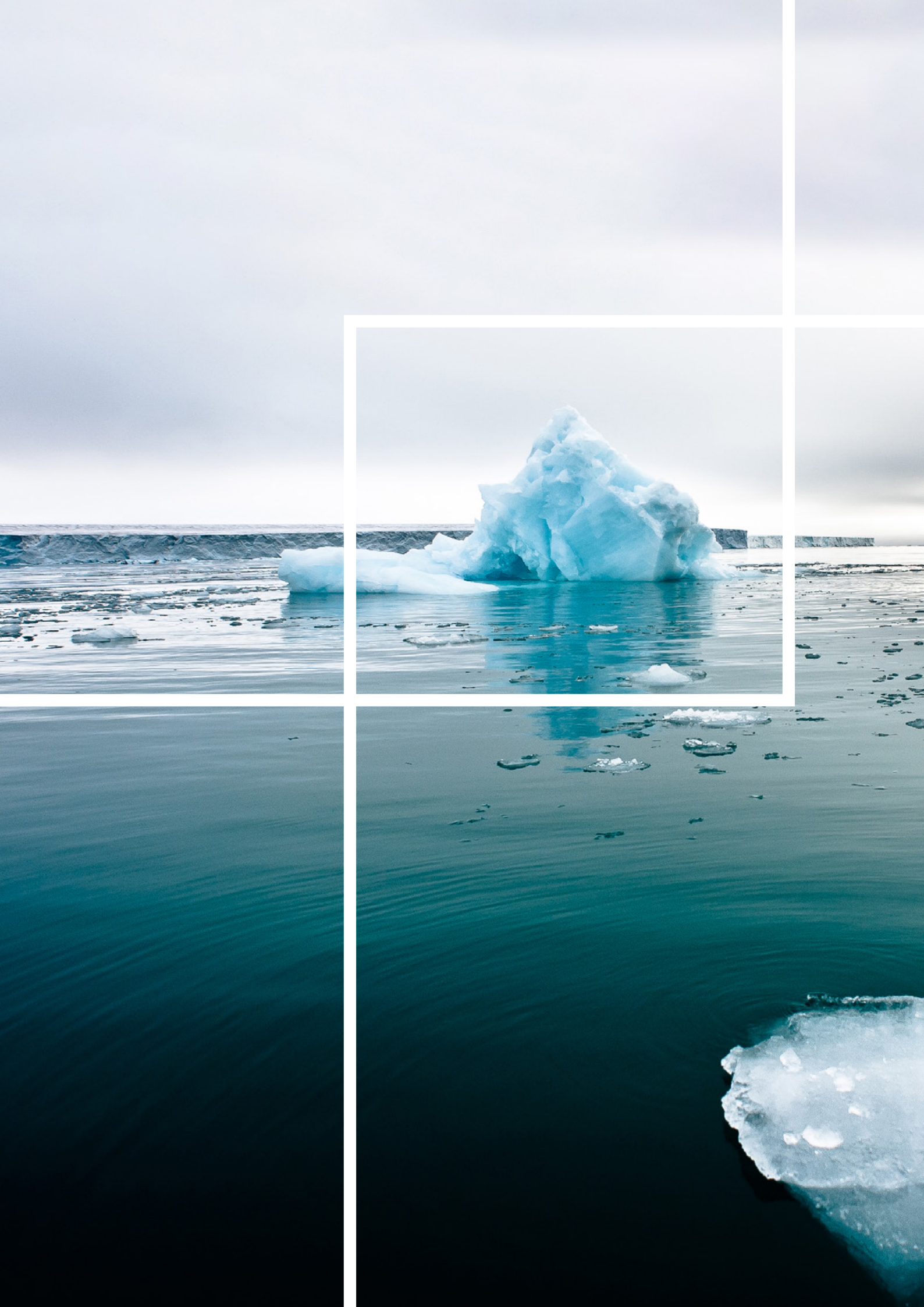
Net Zero backed by Science-Based Targets

PwC's 4th Annual Report on the Business in the Community Ireland (BITCI) Low Carbon Pledge

pwc

PwC June 2022

BUSINESS IN THE COMMUNITY IRELAND



Ministerial Foreword

Eamon Ryan TD

Minister for Transport, Climate, Environment & Communications

We are still grappling with the COVID-19 pandemic, particularly when you consider the current re-emergence of the virus. However, for the most part, we have, as a society and an economy, turned the corner, through resilience and collective action. We now must use the same collective resolve and strength to fight the climate and biodiversity crisis, for our individual health and wellbeing, and for the ongoing health of our planet.

Like Covid-19, the current war in Ukraine was not foreseen by most. It is having a devastating impact on the people of Ukraine, as well as on the country's economy. However, its effects are being felt worldwide, including here in Ireland, not least in the cost of living and increase in inflation.

As we deal with these immediate global and domestic issues, commentators have expressed a concern that there is a risk that the climate emergency that we are facing could be side-lined or pushed down the road. This cannot happen. In fact, the global energy crisis only highlights further how important it is that we shift away from our reliance on polluting, expensive fossil fuels.

Climate adaptation and energy security are key concerns for the Irish Government. Both can be achieved mutually by accelerating our shift away from fossil fuels to indigenous renewable energy and storage while also incorporating nature-based solutions into our climate strategies.

This decade is our final opportunity to peak and slash our carbon emissions firstly by 51% by 2030, and then to zero by 2050. To do this, we need to close the ambition, emission, power supply and credibility gaps to truly drive urgent and just climate action at every level.

In our most recent 2022 Climate Action Plan, the Government has provided a detailed pathway to achieving the 51% reduction in carbon emissions required by 2030 across all sectors of our economy - or a 7% year on year decline. In the coming weeks we will see the publication of the Government's first five-year carbon budgets and sectoral emissions ceilings. The budgets will provide guidance for the decarbonisation of each sector of the economy. However, we will need additional measures across Government, enterprise, and wider society if we are to really achieve our 2030 commitments.

The revised National Development Plan (NDP) commits €165billion to public infrastructure projects up to 2030, an increase of almost €50billion on the initial 2018 plan. The projects span transport, housing, healthcare, climate action, education, and cross-border initiatives. Alongside this, electrification of our society from electric transport and heat pumps alongside hydrogen energy presents significant solutions to end our reliance on carbon.

As we look towards COP27 in October, in addition to Government efforts, we need all the support of society and particularly the business and enterprise community, to help turn our ambition into credible action. Innovation and a move to a digital, circular, and net-zero society where everyone thrives is where business can lead.

The Business in the Community Ireland Low Carbon Pledge, now in its fourth year, continues to propel its 70 signatories towards a net-zero future, in alignment with the Paris Climate Agreement. This annual progress report and evidence-based commitment of the signatories to the Low Carbon Pledge underpins its accountability and credibility. Indeed, the Climate Action Plan directly references the Low Carbon Pledge as an initiative which demonstrates enterprise leadership toward a decarbonised Ireland.

Decisive business and political leadership can help us get to net zero much sooner than 2050. Scope 3 emissions and reduction targets outline the impacts of your ongoing business decisions and the need for collective transformation. I congratulate the businesses that are already involved in the movement led by Business in the Community Ireland and I call on other businesses to join.

I also want to acknowledge the considerable effort in preparing this report by Business in the Community Ireland, supported by the Co-Chairs of the Low Carbon Subgroup, Mark Foley, CEO, EirGrid and Denis O'Sullivan, Managing Director, Gas Networks Ireland.

This is an important example of the transformational change that is needed if Ireland is to decarbonise, and importantly, if Ireland is to thrive, both economically and socially, into the future.

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BUSINESS IN THE COMMUNITY IRELAND

Introduction from Business in the Community Ireland (BITCI)

Business in the Community Ireland's Low Carbon Pledge (The Pledge) is entering its third reporting year with a new ambition. Signatory companies must align their climate action with what science says is necessary to limit global warming to 1.5°C.

The Pledge aims to provide leadership, set a collective ambition, and drive practical action on the climate crisis. With this new commitment, businesses take a significant step forward. Businesses across all sectors need to play a vital role if we are to address the climate and biodiversity emergency.

"Delay means death" summarised UN Secretary General António Guterres to introduce the latest in a series of reports by the Intergovernmental Panel on Climate Change earlier this year. Any reductions in emissions achieved during the most severe lockdowns due to the pandemic have now been reversed and emissions, on a global scale, are growing. Extreme weather events all over the world continue to show the devastating impact of this climate emergency, especially impacting on the most vulnerable in our society. A global energy crisis, resulting from the Russian invasion of Ukraine, puts once again the spotlight on the need to reverse our dependency on fossil fuels and replace them with renewables.

It is against this challenging backdrop that we introduce the fourth annual report of the Business in the Community Ireland Low Carbon Pledge. Reflecting on the journey of the Pledge, we continue to see steady progress towards our stated ambition on companies having science-based emission reduction targets set no later than 2024. 41% of our 70 signatories have set their targets and these have been externally approved, and a further 29% have formally committed to setting science-based targets. It is encouraging to see that for nearly half (42%) of signatories, business model resilience is the main reason for signing-up to the Low Carbon Pledge.

Net-zero and nature positive is the next ambition for any business that wants to ensure their strategy and operating model is future-proof. While there is a significant response to the Net-Zero challenge, with 66% of Low Carbon Pledge signatories on this journey, the nature agenda requires metrics and targets for improvement and reduction. The 2022-2025 Business in the Community Ireland Strategic Action Plan will focus our efforts and action on helping companies achieve this ambition.

The scientific community has used every possible signal of alert to warn us of the irreversible changes we are causing to the planet and our livelihoods. This sentiment is echoed by the voices of investors, consumers, employees and particularly the voices of young people. "Eco-pessimism" is one of the new words in our vocabulary. This is a mission we cannot afford to fail, and we cannot leave anyone behind. Business must act and business must lead. The call for action is clear and it must be systemic.

Tomás Sercovich
CEO, Business in the Community Ireland

Mark Foley
CEO, EirGrid

Denis O'Sullivan
MD, Gas Networks Ireland

Organisations participating in this report

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The Decarbonisation Agenda

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The Decarbonisation Agenda

2.1 Introduction from PwC

PwC is proud to be once again working with BITCI on this the 4th edition of the Low Carbon Pledge report. The following sections outline the progress made by the signatory companies towards setting and adhering to science-based targets (SBTs). The subsequent analysis and case studies highlight some key actions and exemplar business practices that are helping companies to drive their emission-reduction efforts and to progress on a pathway towards genuinely sustainable business.

Whilst last year's Low Carbon Pledge report was set against the challenging backdrop of the COVID-19 pandemic, this year's report is set against the equally challenging setting of the war in Ukraine. With the war creating significant social and economic hardship and lasting impacts for those directly affected by the war, the war also raises potential challenges for the energy transition.

With energy security now a critical domestic policy priority requiring urgent attention, the risk exists that countries' replacements of Russian fossil fuels could have long-term decarbonisation impacts. Antonio Guterres, UN Secretary General noted that "as major economies pursue strategies to replace Russian fossil fuels, short-term measures might create long-term fossil fuel dependence and close the window to 1.5 degrees". The Secretary-General expressed his worries that countries "could become so consumed by the immediate fossil fuel supply gap that they neglect or knee-cap policies to cut fossil fuel use".[1]

However, the war's demonstration of the impact of global geopolitical risk and shocks on national energy security should be viewed as providing policymakers with further justification for accelerating investment and delivery of the renewable energy future.

2.2 Ireland's Decarbonisation Agenda

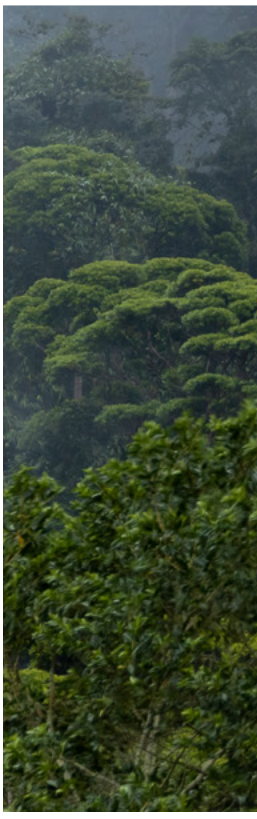
The 12-month period since the publication of last year's Low Carbon Pledge Report has seen a continued evolution and advancement of the decarbonisation policy pipeline. Whilst policy objectives and commitments are creating pathways to realise short and long-term climate goals, significant challenges remain regarding the pace and trend of Ireland's emissions decoupling.

Evolving European Climate Policy Agenda

The urgency of the climate challenge is evident from the speed with which the EU has quickly ratcheted up its decarbonisation agenda. Less than 2 years after the launch of the Green Deal and following political agreement in December 2020 by the EU Council, the European Commission in summer 2021 proposed the 'Fit for 55' package of legislative measures, aimed at setting the EU on the path to a greenhouse reduction of 55% by 2030 and, ultimately, climate neutrality by 2050. Without 'Fit for 55', under current EU climate legislation, the European Commission has indicated that the EU will only achieve a 60% emissions reduction by 2050.

1 UN Secretary-General: Ukraine can have major implications for the climate - United Nations Western Europe

The Fit for 55 package includes numerous proposals to revise and update the EU legislation as well as to introduce new initiatives ensuring that EU policies are in line with agreed climate targets. The Commission identifies the Fit for 55 policy mix as a careful balance between pricing, targets, standards, and support measures:



Pricing

- Stronger Emissions Trading System including aviation
- Extending Emissions Trading to maritime, road transport and buildings
- Updating Energy Taxation Directive
- New Carbon Border Adjustment Mechanism

Targets

- Updated Effort Sharing Regulation
- Updated Land Use, Land Use Change and Forestry (LULUCF) Regulation
- Updated Renewable Energy Directive
- Updated Energy Efficiency Directive

Standards

- Stricter CO^2 performance for cars and vans
- New infrastructure for alternative fuels
- ReFuelEU: more sustainable aviation fuels
- FuelEU: cleaner maritime fuels

Support Measures

- Social Climate Fund to help citizens finance investments in energy efficiency, clean mobility, and renewable energy

The European Climate Law[2] also entered into force summer 2021, converting the EU Green Deal's 2050 net-zero political commitment into a legal binding commitment. The Climate Law also establishes the steps necessary to achieve the 2050 objective with the Commission set to develop a 2030 – 2050 EU-wide emissions reduction trajectory to deliver the 2050 net zero emissions objective. By September 2023, and every five years thereafter, the Commission will assess EU and Member State climate policy measures for their compatibility with both the zero emissions objective and 2030 – 2050 trajectory. Where the Commission finds Member State measures are inconsistent with the climate neutrality objective, it may issue recommendations, fines and sanctions to that Member State.

Ireland's Decarbonisation Commitments

The Climate Action Plan 2021 (CAP 2021), the Government's second action plan since the inaugural plan of 2019, provides a framework for delivering the Government's target of a 51% reduction (relative to 2018) in greenhouse gas (GHG) emissions by 2030. CAP21 follows the Climate Action and Low Carbon Development (Amendment) Act 2021 ('the Climate Act'), which commits Ireland to a legally binding target of net-zero greenhouse gas emissions no later than 2050, and a reduction of 51% by 2030. The Climate Act provides a governance framework for annual revisions of the Climate Action Plan and the development of a National Long Term Climate Action Strategy at least once every ten years. The Government is also committed to reducing emissions by an average 7% per annum by 2030. The Climate Act legally requires the Government to approve a system of successive five-year carbon budgets submitted by the Minister for the Environment, Climate and Communications to achieve the national climate objective.

Sectoral Challenges

While CAP21 does not define individual sectoral targets, it details indicative emissions reductions ranges for each sector of the economy. Some of the ranges are wide - electricity must reduce emissions somewhere between 62% and 81%, a difference of 19%. Others have a narrower range - agriculture must reduce emissions somewhere between 22% and 30% - only an 8% difference.

Emissions reductions by 2030:

- Electricity: 62-81%
- Transport: 42-50%
- Buildings: 44-56%
- Industry/Enterprise: 29-41%
- Agriculture: 22-30%
- LULUCF: 37-58%

Sectoral reduction ranges will be translated into sectoral emissions ceilings following the legal adoption of the Government's carbon budgets and sectoral emissions ceilings. These targets will be finalised in Climate Action Plan 2022.

In October (2021), the Climate Change Advisory published its proposed economy-wide carbon budgets, which are to be applied across relevant sectors as emissions ceilings by the Minister for the Environment. The first carbon budget will see emissions reduced by 4.8% on average between 2021 and 2025. The second budget, running from 2026 to 2030, will see emissions reduced by 8.3% on average. The first two carbon budgets are designed to align with the Government's 2030 emissions reduction target. Achieving a 51% reduction in GHG will result in a cut of almost 35 million tonnes of CO2.

If sectoral targets and carbon budgets are not achieved, CAP21 establishes that corrective or additional measures may be introduced to ensure targets are achieved. However, the provisions of the Climate Act stipulate that at the end of a five-year carbon budget period, any excess emissions will be carried forward to the next budget period, which will be reduced accordingly. Policy makers may also consider how individual sectors could bear any compliance costs for the state arising from failure to reach sectoral targets.

Ireland's Challenging Net Zero Pathway

The latest EPA projections (June 2022) highlight the need for an acceleration in the pace and scale of Ireland's decarbonisation efforts. Ireland's 2030 commitments are critical "steppingstones" on Ireland's net-zero journey. EPA analysis finds that while Ireland can meet its EU 2030 obligations, Ireland faces a significant challenge to achieve its own nationally legally binding 2030 commitments [as per CAP 21].

Ireland's compliance with its EU non-ETS target of a 30% reduction by 2030 (relative to 2005) is contingent on the successful implementation of all planned policies and measures and use of the land use flexibility using the Climate Action Plan 2021 afforestation rate of 8,000 hectares per annum.

However, according to the EPA, urgent implementation of "all climate plans and policies, plus further new measures" will be needed for Ireland to meet a legally-binding 51 per cent emissions reduction target by 2030. Ireland is currently on-track for a 9%-28% reduction by 2030. The EPA's analysis also identifies a significant gap between the carbon budgets and the projected emissions over the budget periods. These require urgent attention if Ireland is to stay within the Carbon Budgets.

2 Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') Publications Office

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Background to the Low Carbon Pledge

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Background to the Low Carbon Pledge

3.1 Science-based Targets

The Science Based Targets initiative (SBTi) drives ambitious climate action in the private sector by enabling companies to set science-based emission reduction targets.

Science-based targets (SBTs) provide a well-defined pathway for companies to reduce greenhouse gas (GHG) emissions, helping to avoid the worst effects of climate change and future-proof business growth. Targets are considered 'science-based' if they are in line with the latest climate science necessary to meet the goals of the Paris Agreement – to limit global warming to well below 2°C above pre-industrial levels and pursuing efforts to limit warming to 1.5°C.

SBTs are short to medium-term milestones, which aim to mobilise the private sector to take urgent climate action and ultimately enable companies to reach their long-term climate ambitions.

Despite government efforts, GHG emissions continue to increase. Without strengthening climate policies, GHG emissions are projected to lead to a median global warming of approximately 3.2°C by the end of this century.[3]

The private sector has a central role to play in ensuring that the global temperature goals are met, however the aggregation of existing company targets would not achieve the desired target and greater ambition is required. The majority of global GHG emissions are directly or indirectly influenced by the corporate sector. Many companies, recognising the risk climate change poses to their business, and the opportunity it creates for leadership and innovation, have set GHG emissions reduction targets. Yet, to date, most companies' targets do not match the ambition and timeframes consistent with a 1.5°C future.

The Pledge aims to demonstrate the commitment of Irish businesses to reducing their GHG emissions in line with the SBTs and to demonstrate their willingness to take a leadership role in helping to achieve Ireland's emissions reduction objectives. The Pledge requires that all signatories commit to setting SBTs no later than 2024, and significantly review and assess indirect and supply chain emissions. The ultimate goal of The Pledge is to achieve carbon neutrality. Setting SBTs represents a significant step forward towards a net-zero economy by 2050

3.2 Capturing the Journey to Setting Science-based Targets

One of the objectives of this report is to demonstrate the progress made by the signatory companies in setting SBTs and to detail their specific journeys towards decarbonising their operations across the entire value chain. A questionnaire, developed by both BITCI and PwC, was used to collect data for each company. All signatory companies responded to the questionnaire, giving a 100% response rate.

The aim of the questionnaire was to:

- Establish where companies are on the journey to formally setting SBTs;
- Determine what is driving the ambition to set SBTs and understand any sectoral differences;
- Determine where companies are on the pathway to assessing their scope 3 emissions;
- Ascertain what companies find to be the main challenges when setting SBTs.

Section 4 provides a breakdown of the main findings and observations stemming from the questionnaire responses.

3 Source: UN IPCC WG6 Report 2022

Table 1: 70 Low Carbon Pledge signatories and report participants

Company	Sector
A&L Goodbody	*Professional Services*
Abbvie	*Pharma/Med-tech*
ABP Ireland	*Agribusiness/Food & Drink*
Accenture	*Technology*
Actavo	*Construction*
AIB Group	*Financial Services*
Aldi	*Retail*
Allianz	*Financial Services*
An Post	*Transport/logistics*
Arup	*Professional Services*
Axa Insurance	*Financial Services*
Aviva	*Financial Services*
Bank of Ireland Group	*Financial Services*
Bidvest Noonan	*Facilities Management/ Foodservice*
Boots	*Retail*
Britvic Ireland	*Agribusiness/Food & Drink*
BT	*Technology*
Cairn Homes	*Construction*
Cook Medical	*Pharma/Med-tech*
College Proteins Group	*Agribusiness/Food & Drink*
Compass Group Ireland	*Food & Drink*
Cisco	*Technology*
Dawn Meats Group	*Agribusiness/Food & Drink*
Deloitte	*Professional Services*
DePuy Synthes	*Pharma/Med-tech*
DHL Supply Chain	*Transport/Logistics*
Diageo Ireland	*Agribusiness/Food & Drink*
Dublin Bus	*Transport/Logistics*
Eir	*Communications*
EirGrid plc	*Energy & Utilities*
Enterprise Rent-a-car	*Transport/Logistics*
ESB Group	*Energy & Utilities*
EY (Dublin)	*Professional services*
Fujitsu Ireland	*Technology*
Gas Networks Ireland	*Energy & Utilities*
Grant Thornton	*Professional Services*
HEINEKEN Ireland	*Agribusiness/Food & Drink*

Company	Sector
Hovione Ireland	*Pharma/Med-tech*
Iarnród Éireann (Irish Rail)	*Transport/Logistics*
Irish Distillers	*Agribusiness/Food & Drink*
Irish Water	*Energy & Utilities*
Janssen Pharmaceutical Sciences UC	*Pharma/Med-tech*
Johnson & Johnson Vision Care	*Pharma/Med-tech*
KBC Bank Ireland	*Financial Services*
KSG	*Agribusiness/Food & Drink*
Keelings	*Agribusiness/Food & Drink*
KPMG	*Professional Services*
Lidl Ireland	*Retail*
Marks & Spencer (Ireland) Ltd	*Retail*
Momentum Support	*Facilities Management / Foodservice*
Mercury Eng.	*Construction*
Musgrave Group	*Retail*
Ornua	*Agribusiness/Food & Drink*
Permanent TSB	*Financial Services*
PM Group	*Professional Services*
PwC	*Professional Services*
RSA Insurance	*Financial Services*
RTE	*Communications*
Sky Ireland	*Communications*
Sodexo Ireland	*Facilities Management/ Foodservice*
SSE Ireland	*Energy & Utilities*
Stryker Ireland	*Pharma/Med-tech*
Tesco Ireland	*Retail*
Three Ireland	*Communications*
Ulster Bank Ireland DAC	*Financial Services*
Veolia	*Professional Services*
Verizon	*Technology*
Virgin Media Ireland	*Communications*
Vodafone Ireland	*Communications*
William Fry	*Professional Services*

Note: The sector "professional services" includes environmental services. The sector "financial services" includes insurance. Note that agribusiness and food & drink have been combined in this year's report.

Figure 2: Overview of scope 1, 2 and scope 3 emissions

Scope 3	Scope 1 and 2	Scope 3
Supply chain ('Upstream')	**Reporting company**	**Customers ('Downstream')**
1. Purchased goods and services		9. Downstream transportation and distribution
2. Capital goods		10. Processing of sold products
3. Fuel and energy related activities (not included in scope 1 or scope 2)		11. Use of sold products
4. Upstream transportation and distribution		12. End-of-life treatment of sold products
5. Waste generated in operations		13. Downstream leased assets
6. Business travel		14. Franchises
7. Employee commuting		15. Investments
8. Upstream leased assets		

Source: Greenhouse Gas Protocol, Scope 3 Standard

Understanding scope 1, 2 & 3 emissions

- **Scope 1:** Direct GHG emissions occur from sources that are owned or controlled by the company. This segment comprises four principal emissions sources: process, stationary, fugitive, and mobile.
- **Scope 2:** Indirect greenhouse gas emissions from consumption of purchased electricity, heat, or steam.
- **Scope 3:** Other indirect emissions. Figure 2 displays the 15 categories of scope 3 emissions, as outlined by the Greenhouse Gas Protocol.

The benefits of setting science-based targets

SBTs are undeniably good for the planet but setting them also makes business sense. The following are benefits companies can expect to see after setting SBTs:

1. **Stakeholder confidence:** Increasingly investors are taking an interest in companies' environmental policies as they become more focused on value protection. Some companies are using SBTs to underpin their sustainability ambitions with a view to meeting customer expectations and, in many cases, to maintain a fundamental 'licence to operate'.

2. **Policy and regulatory readiness:** Companies are anticipating enhanced climate policy and regulation and SBTs are viewed as an important means of staying ahead of these changes.

3. **Increased innovation:** Companies are aligning their strategies to a low-carbon economy which allows them to access the significant associated business opportunities. When companies set SBTs, they also benefit from the target validation process and detailed feedback and support provided by the technical expertise of the Science Based Target initiative (SBTi). Businesses who sign the SBT commitment letter, are immediately recognised as "committed" on the SBTi website, as well as the websites of CDP, UN Global Compact and We Mean Business.

Setting science-based targets

Embedding SBTs in a company's corporate and sustainability strategy is crucial. The SBTi have a general set of criteria that companies must follow when setting SBTs[4]:

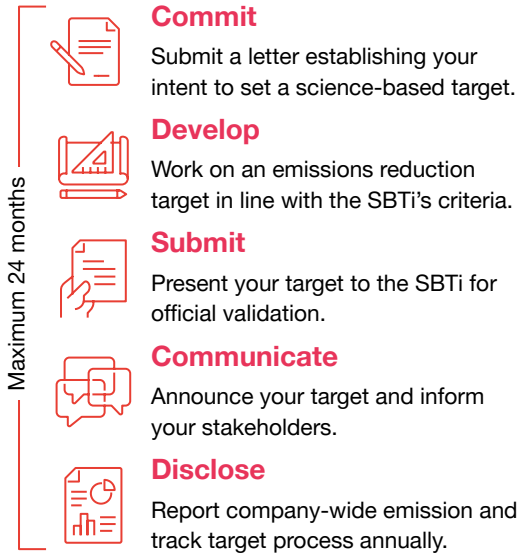
- Boundaries: Targets must cover 95% of scope 1 and 2 GHG emissions, and scope 3 where > 40% of emissions.[5]
- Timeframe: 5/10/15 years into the future from the date the target is submitted to SBTi for official validation.
- Ambition: At a minimum, scope 1 and scope 2 targets must be consistent with the level of decarbonisation required to keep global temperature increase to well-below 2°C compared to preindustrial temperatures. However, companies are encouraged to pursue greater efforts towards a 1.5°C trajectory.
- Offsets: The use of offsets must not be counted as emissions reduction toward the attainment of companies' SBTs.

Setting SBTs is a five-step process (see figure 3 below). Once signatories have completed step 1, and formally committed to setting SBTs, they have 2 years to have their SBTs set and approved. As every sector is different, the SBTi is developing sector-specific guidance.

4 See SBTi Science-Based Targets Criteria: SBTi Criteria and Recommendations

5 All companies that are involved in the sale or distribution of natural gas or other fossil fuel products must set scope 3 targets for the use of sold products, irrespective of the share of these emissions compared to the total scope 1, 2, and 3 emissions of the company.

Figure 3: Five-step process of setting-science based targets

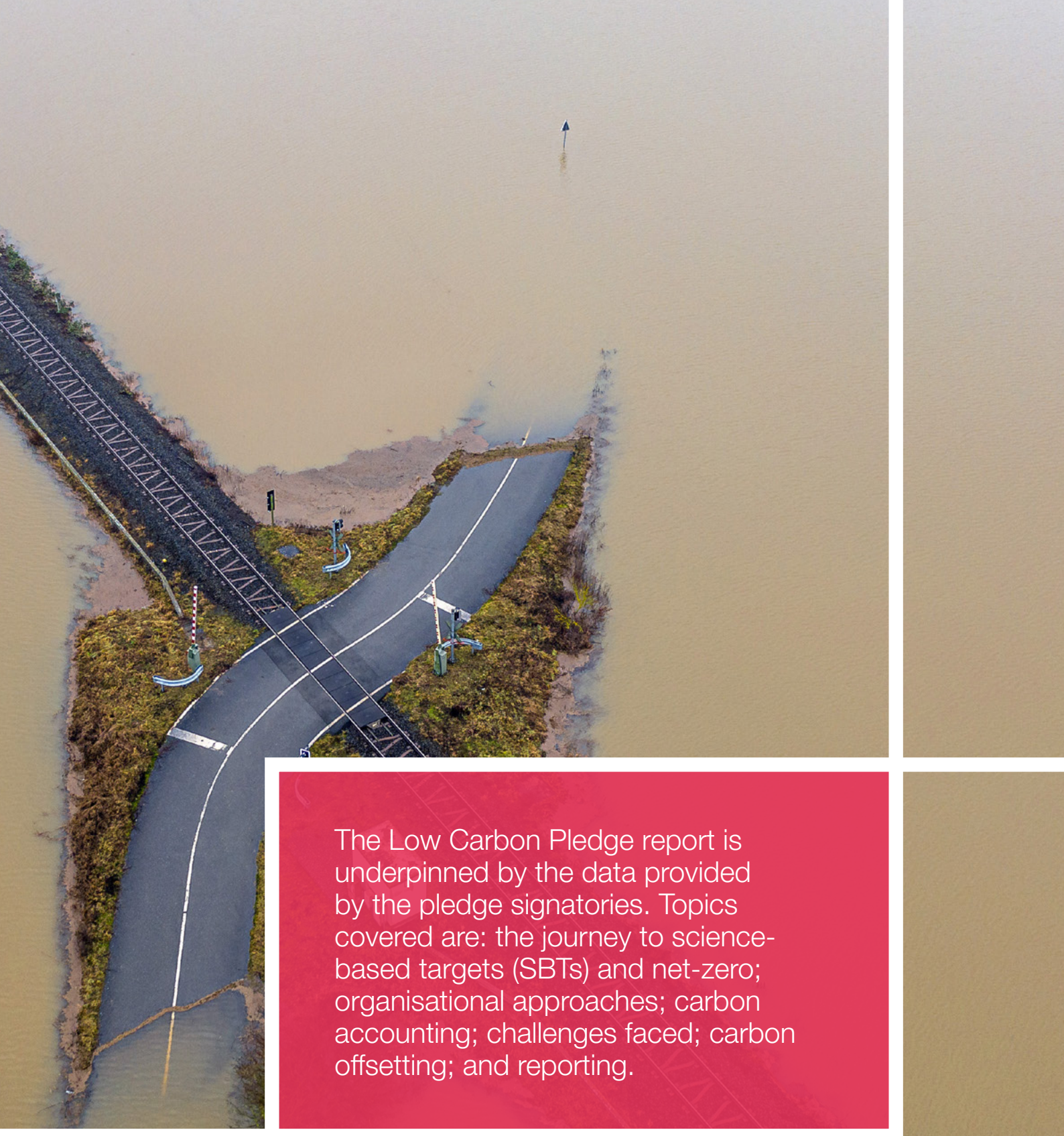


The science-based path to net-zero

The path to net-zero must be science-based. Extensive scientific research clearly states the need to reach net-zero global CO2 emissions by mid-century in order to limit global warming to 1.5°C and to reduce the destructive impacts of climate change.[6] The concept of net-zero has risen in prominence over the last few years, as companies are increasingly committing to reaching this ambitious goal. In contrast to SBTs, net-zero targets indicate carbon neutrality, rather than direct emissions reductions and therefore carbon offsetting is allowed.

However, not all net-zero targets are equal. The definition of "net-zero", as well as the path to get there, are diverse and often inconsistent. To address this the SBTi launched the first science-based global standard for corporate net-zero targets. The SBTi Net-Zero Standard defines corporate net-zero as reducing scope 1, 2, and 3 emissions to zero or to a residual level that is consistent with reaching net-zero emissions at the global or sector level in eligible 1.5°C-aligned pathways. SBTs provide the short and medium-term milestones to align with the Paris Agreement but these targets can also give credibility to companies' net-zero commitments.

6 Source: SBTi



The Low Carbon Pledge report is underpinned by the data provided by the pledge signatories. Topics covered are: the journey to science-based targets (SBTs) and net-zero; organisational approaches; carbon accounting; challenges faced; carbon offsetting; and reporting.

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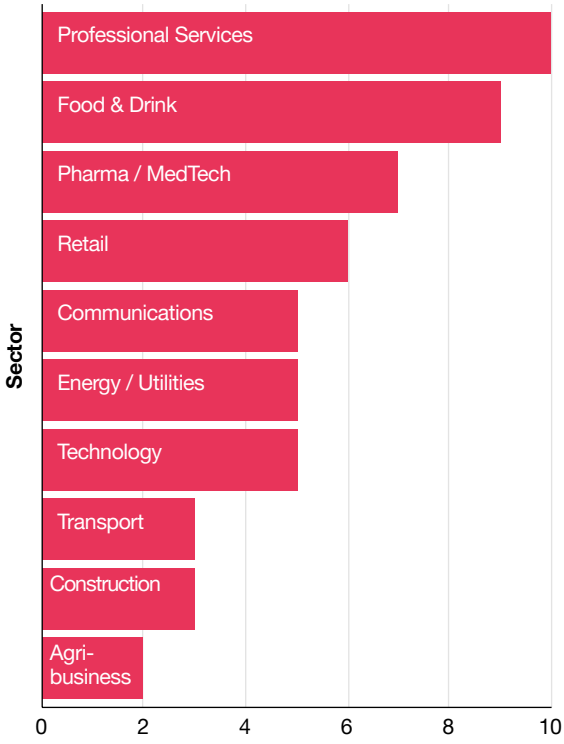
Low Carbon Pledge Results Overview

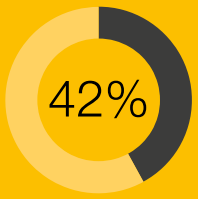
4.1 Introduction to The Pledge Signatories

Since commencing the Low Carbon Pledge, there has been an annual increase in the number of signatories, and this trend has continued. This is a promising sign as we continue to see more businesses addressing the issue of climate change. 70 companies have signed this year's Pledge (see table 1), up from 58 signatories in 2020. The signatories span 11 different sectors, with Professional Services and Food & Drink companies being the largest sector groups.

Figure 4: Signatories per sector

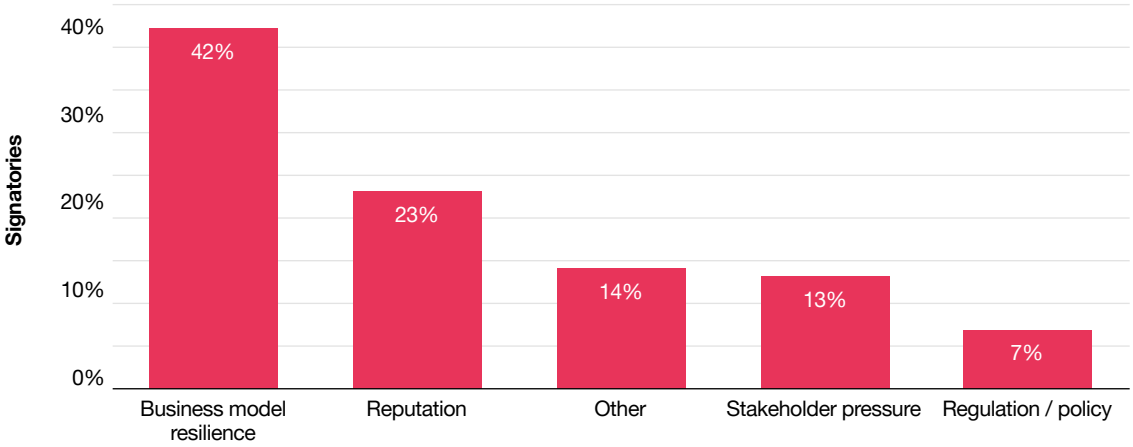


Business model resilience was the main driver for signing this more ambitious Pledge, with 42% of companies citing this reason. The global pandemic has challenged businesses and has forced many to innovate and rethink their business model, in order to survive and thrive. This trend will continue as we decarbonise our economy, and thus businesses will have to continually adapt. Reputation followed closely, with 23% of signatories recognising it as a driving factor. In recent years we have seen consumers putting pressure on companies to embrace more sustainable business practices and offer alternative choices. The modern consumer is more educated and becoming increasingly aware of unsustainable business practices. Companies need to work harder to maintain their reputation and retain their customer base. Other drivers for signing The Pledge included stakeholder pressure, corporate and social responsibility, policy and regulation. Some cited signing up because it was simply the right thing to do.



of signatories saw business model resilience as the main driver for signing the Low Carbon Pledge

Figure 5: Main factors for signing the Low Carbon Pledge



4.2 The Journey to Science-based Targets

The journey to science-based targets (SBTs) can be challenging, however The Pledge companies have shown real ambition. In many cases significant progress has already been made with 41% having successfully set SBTs and had them approved by the Science Based Targets initiative (SBTi). A further 29% have formally committed to setting SBTs, 6% of which have set them and are awaiting approval. This means that 70% of the signatories are well progressed to setting science-based targets by 2024. Of the remaining signatories (30%), 9% have already completed an initial analysis. It is important to note that the majority of those who have not yet set SBTs, have set emission reduction targets, which is an important step towards setting SBTs.

When setting SBTs, companies must also select the timeframe over which to achieve the targets. The most common timeframe chosen was 10 years. A 10-year timeframe means that the majority of respondents are set to achieve their SBTs by 2030 or earlier. This date is significant both at global and national level with our own climate action plan targets calling out significant decarbonisation targets on a sectoral basis. For many, a 5-year timeframe may be too challenging to achieve while a 15-year timeframe may not sufficiently signal ambition to customers, employees or regulators.

Figure 6: Progress of signatories on the journey to science-based targets (per stage)

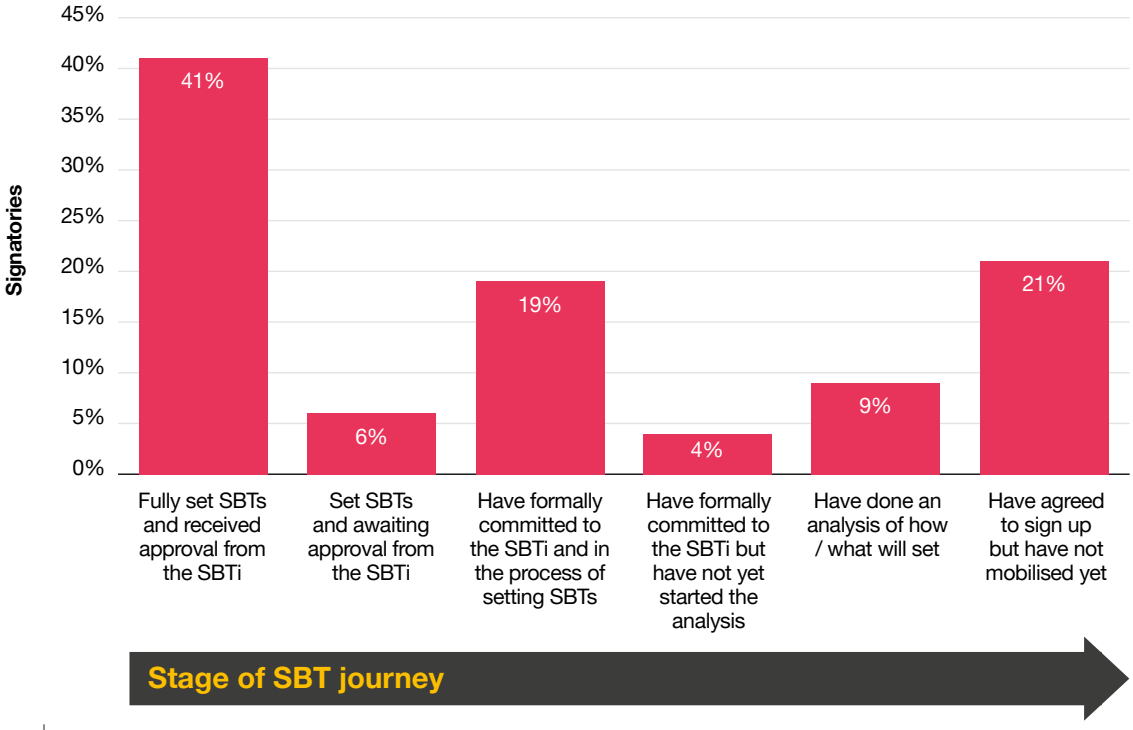


Table 2: Timeframe chosen by respondents when setting science-based targets

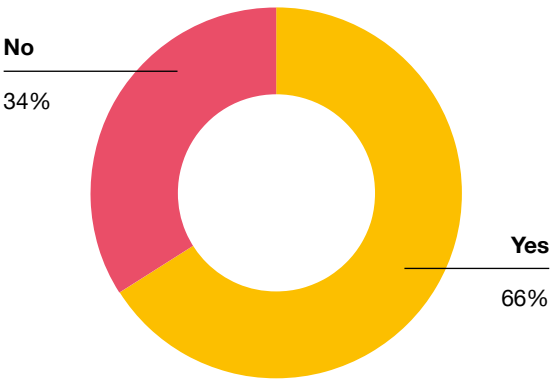
	5 years	10 years	15 years
Scope 1 and 2 emissions	12%	64%	24%
Scope 3 emissions	15%	50%	35%

4.3 Net-zero

Science-based targets (SBTs) are short to medium-targets, which can be used as a stepping-stone to achieve longer term net-zero ambitions. Therefore, although this report is primarily focussed on setting SBTs, net-zero commitments are also considered.

Very significantly, 66% of The Pledge signatories say they have set a public net-zero target, an increase of 24 percentage points from last year. They describe the biggest challenge to setting a net-zero target as 'Cost' (29%) followed by 'Lack of technology' (26%) and 'No analysis done' (23%).

Figure 7: Have you set a net-zero target through the science-based targets initiative?



Signatories who have set a net-zero ambition

Similar to SBTs, net-zero ambitions are often set separately for scope 1, 2 and 3 emissions. Table 3 provides an overview of net-zero timeframes. The majority of respondents have set their scope 1 and 2 ambitions to beyond 2030. Scope 3 emissions are again proving more difficult to reduce, with only 12% choosing a net-zero ambition by 2030 or earlier. One signatory, within the transport sector, explained that they require new decarbonisation technologies for heavy vehicles if they are to achieve net-zero in a more ambitious time frame.

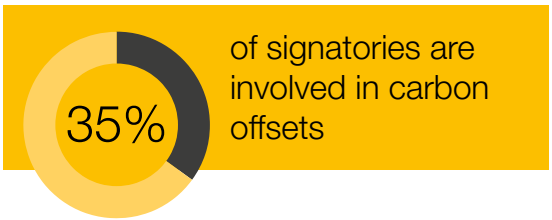
Table 3: Timeframe chosen by respondents when setting net-zero ambition

	2030 or earlier	Beyond 2030	Not Stated
Scope 1 and 2 emissions	26%	34%	40%
Scope 3 emissions	12%	37%	51%

4.4 Carbon Offsetting

Note: The use of carbon offsets is not permitted to achieve science-based targets (SBTs). The Science Based Targets initiative (SBTi) requires companies to achieve SBTs based on actual emission reductions, through direct action within their own operations and value chains. Offsets, however, are often considered by companies looking to achieve net-zero targets in the near term.

A carbon offset is a reduction in carbon dioxide emissions to compensate for emissions made elsewhere. They reduce, remove or avoid greenhouse gas (GHG) emissions but can also bring a host of positive co-benefits, e.g. empowering communities or protecting ecosystems. Overall, 35% of signatories are involved in carbon offsets. Of these, 95% use offsets as part of their net-zero strategy. The involvement in offsetting is primarily focussed in the transport/logistics and professional services sectors.



4.5 Reporting

Over four out of five (81%) of the signatory companies publicly report non-financial data, which is slightly above the portion (74%) that are obligated to do so. All signatories in the energy & utilities, transport, retail and financial services sectors report non-financial data. A high level of reporting exists among signatories in the food & drink and pharma/ med-tech sectors, with 75% reporting non-financial data. The most reported scope 3 category is business travel, with 82% of signatories reporting on this category. Emissions from waste generated in operations and purchased goods and services also have high levels of reporting.

Non-financial reporting has moved from something that used to be a 'nice-to-have', to something that stakeholders now expect from companies. With this external focus comes the risks associated with inaccurate and incomplete reporting. Ensuring that the verification, both internally by the company and externally by a third party, of emissions data is robust and accurate is the best method to mitigate against these risks. 70% of this year's signatories receive external verification of their emissions data, compared to 65% in last year's report.

Climate Disclosure Project (CDP) is the most popular reporting framework among signatories, with 61% of signatories submitting data. Other commonly used reporting frameworks are the Global Reporting Initiative (GRI), Task Force on Climate-related Financial Disclosures (TCFD) and Sustainability Accounting Standards Board (SASB). A small number of signatories indicated they report to the International Reporting Framework (IRF) and Carbon Trust. Many of the respondents said that impactfulness was a key reason for reporting against certain frameworks, while transparency and credibility were also important. Reporting on sustainability is further discussed in section 5.6 of this report.

Figure 8: Reporting non-financial data among signatories

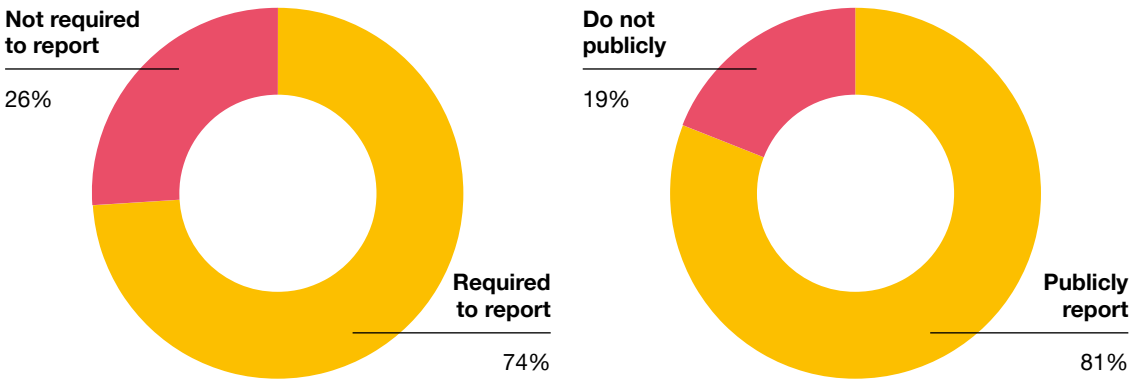
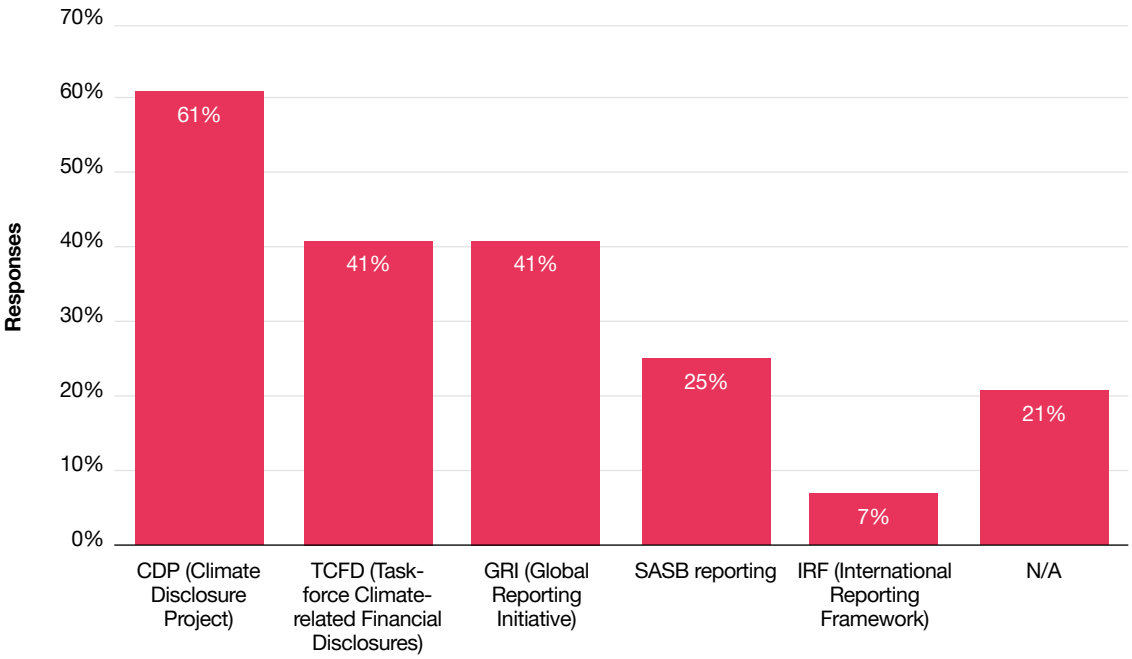


Figure 9: Non-financial reporting frameworks among signatories



5

The case study analysis provides a short overview of how five companies from within the 70 Low Carbon Pledge signatory companies are seeking to decarbonise their business operations and progress on the journey to science-based targets (SBTs). The companies involved are Bank of Ireland, Cairn Homes, Dublin Bus, Keelings and Vodafone. The case studies seek to highlight the challenges faced in different sectors and how companies have successfully addressed these hurdles. Based on the questionnaires returned it was apparent that companies across multiple sectors were grappling with a number of specific topics including: reporting on sustainability, supply chain management, low carbon transport and decarbonisation of the energy system. This section outlines some insights on these topics which are relevant as companies look to set SBTs.

5

Case Study Analysis

5.1 Bank of Ireland

Bank of Ireland is one of the pillar banks in Ireland and therefore recognises the important role it plays in driving attainment of the national climate targets. Firstly, Bank of Ireland can show leadership through its internal focus on sustainability and secondly, by setting ambitious climate targets aligned to science-based targets (SBTs), the bank can drive cross-sectoral change by evolving its sustainable finance product and propositions and lending strategies. Through its ownership of New Ireland and Davy, it can also drive change through its investment propositions.

Stakeholder Expectations

Bank of Ireland has seen the external focus on sustainability growing considerably over the past number of years, with ever-growing expectations from customers, investors, regulators and wider society for increased action and transparency. As one example, in January 2022 the European Central Bank (ECB) launched a supervisory climate risk stress test to assess how prepared banks are for dealing with financial and economic shocks stemming from climate risk. Further interventions like this are expected.

In response to growing stakeholder expectations, and to deliver on its strategic commitments regarding sustainability, Bank of Ireland is evolving its portfolios and lending practices to align with the Paris Agreement and has committed to setting science-based targets across all portfolios and operations by the end of 2022.

Bank of Ireland has also committed to transparent reporting on the progress it is making towards fulfilling its sustainability ambitions, which include non-financial reporting in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The Bank has recently released its second set of TCFD disclosures

in its Annual Report 2021, is publishing a standalone Responsible and Sustainable Business Report, and is making significant progress in shifting the internal focus from reporting into operationalising sustainability across the bank. To further accelerate this shift, the Bank has established a separate board-level committee focused on ESG and has recently appointed a new Chief Sustainability & Investor Relations Officer to join up sustainability activities across the business.

Responsible and Sustainable Business Strategy

Bank of Ireland's RSB strategy commits to the publication and achievement of ESG targets. Following SBT methodology, the strategy focusses on key portfolios with the Bank currently selecting time horizons per portfolio and setting targets. These activities will form the foundation of future risk analysis leading to mitigating activities to help reduce longer term risks, while also looking to identify commercial opportunities such as increasing green lending. An initial set of metrics for climate-related risks has been developed to support the setting of relevant targets and controls. These will enable Bank of Ireland to track progress against its strategy and guide related disclosure. When set, the targets will be communicated across all Business Units for full alignment with existing business planning.

Bank of Ireland's RSB Strategy commits the whole organisation to working with customers, colleagues and communities to support their transition to a resilient, net zero economy by 2050. Bank of Ireland offers a suite of sustainable finance products and propositions to support customers in their own green transitions. These include Ireland's first green mortgage in 2019, which is designed to incentivise energy efficient homes. The Bank also offers discounted finance for home retrofits and energy-efficiency upgrades for businesses. Bank of Ireland is also the largest wholesale provider of finance for electrically-charged vehicles and a leading provider of finance for renewable energy assets across the island of Ireland.

Challenges

A key challenge that Bank of Ireland has identified is how to effectively move from strategy to execution while keeping all stakeholders engaged. To help overcome these challenges the Bank has established a central team whose role it is to coordinate different business teams in the execution of the strategy, and roll-out training programmes to 8,500+ employees, including all its senior leaders and executives and customer relationship managers. This ensures consistent impact on and engagement with multiple external stakeholders across all sectors. Bank of Ireland has also established a green decision group comprising senior representatives from across all key business units. This group tracks progress on environmental issues and oversees the SBTs and target setting helping to ensure everyone knows what the targets are and what the business is doing to achieve them.

While Bank of Ireland's exposure to high fossil fuels intensive industries is minimal/negligible, they have prioritised supporting customers in their own decarbonisation journeys where they can make a difference, including the likes of mortgages, real estate, transport, energy and agriculture.

Key Learnings

Bank of Ireland's primary piece of advice to others is to start by ensuring full senior leadership sponsorship. Combating climate change is one of the greatest challenges facing the financial services sector and there will be many difficulties on the journey to net-zero. It is therefore vital that everybody across the whole organisation understands the importance and the urgency of this agenda and how it aligns with the corporate strategy. When looking at its impact beyond the organisation, Bank of Ireland see relationship managers as having a critical role in working with customers in key industries in reducing their own carbon footprints. Working closely with the relevant regulators and other key stakeholders is also key as is accelerating the capture, and reporting, of related emissions data and integrating this into lending and management information systems in order to have a reliable fact base against which to continually manage, risk assess and track progress.

5.2 Cairn Homes

Together, building and construction are responsible for 39% of all carbon emissions in the world and therefore represent a must-win decarbonisation segment both globally and locally. Cairn Homes want to take a prominent role in promoting sustainable and attainable building in Ireland, while in parallel being respectful of the change this will have on both suppliers and customers.

Strategy

While Cairn Homes has had a longstanding interest in sustainability a significant turning point occurred 3 years ago, when in 2019, a commitment was made to investors to change from the then CSR focus to basing a sustainability strategy rooted across the full E, S and G spectrum. This allowed the company to identify the truly material ESG factors for their business and set the path towards science-based targets. BITCI played a central role in supporting and encouraging this change in focus. This shift was fundamentally strategic, and Cairn Homes found that it was critical to balance the low carbon construction ambition with a broader interpretation of sustainability which takes account, for example, of the very important societal role they play in the provision of much needed housing.

Reporting

A strong data driven fact base underpins both the sustainability strategy and the associated action plan. Cairn Homes reports in line with definitions prescribed in internationally recognised frameworks: Sustainability Accounting Standards Board (SASB) Standards, Task Force on Climate Related Financial Disclosures (TCFD), and partially reports under the Global Reporting Initiative (GRI). This helps keep them accountable by ensuring their metrics and key performance indicators (KPIs) are comparable to those of their peers and allows external stakeholders, including investors, to understand the material actions being taken to deliver on their ESG strategy. In addition, they show the on-the-ground reality of the implementation of their strategy through case studies that illustrate the depth and breadth of a culture of sustainability at Cairn.

Science-Based Targets

In January 2022, Cairn Homes went one step further, and committed to setting Greenhouse Gas (GHG) emission reduction targets aligned with the Science-Based Targets Initiative with expected verification in 2023. They have measured their Scope 1 and 2 emissions and are in the process of measuring a Scope 3 baseline incorporating all relevant supply chain categories. They are also conducting Life Cycle Assessments (LCA) of their homes to understand the embodied carbon in their homes and how best to reduce it further. They have measured their Scope 1 and 2 in line with international best practice – the GHG Protocol Corporate Accounting and Reporting Standard and the aligned ISO 14064-3 standard.

Their research to date has shown that their Scope 3 comprises the vast majority of their total emissions and within Scope 3, the majority of those emissions arise from the materials they choose and through the energy consumption of the homes they build over the lifetime of the home. As a result, their sustainability actions focus on their most material impacts: the energy efficiency of their homes in use and the construction materials used. They are also broadening their circular economy activities, starting with their soil management strategy and looking to net gain biodiversity targets for their sites going forward.

Innovation

Their actions to date range from innovations in the fabric, structure, materials, construction methods and technologies they use. This has led, for example, to prioritising timber frame construction and incorporation of air-source heat pumps in new homes which eliminate the need for fossil fuel-based heating systems. They are constantly seeking new innovations to maximise the energy efficiency in home use, with the result that 100% of their homes are BER (Building Energy Rating) A rated as a minimum standard. They are also driving further carbon savings through innovations such as the use of light gauge steel which can reduce the quantity of carbon intensive concrete required by up to 50%.

Advice for Others

Cairn Homes has some specific recommendations for others embarking on this journey. *Pilot new technologies* - don't rely on traditional methods to achieve your decarbonisation targets. *Business strategy and sustainability strategy* need to be aligned. Fully integrate material sustainability issues into your corporate strategy. **Imbed sustainability** across the organisation - make it everyone's job. **Get on the journey as fast as possible** but be patient in terms of collecting the required information, it needs to be verified and accurate. **Treat non-financial data the same way you treat your financial data** and often talking to your Finance team can help as they have the required mindset to accurately gather and report on data.

In relation to the building sector, Cairn Homes recognise the need to reduce usage of non-renewable materials and builders and developers should incorporate circular economy principles into the development of their products. Supply chain visibility is a high priority for Cairn Homes under both Environmental and Social categories, and they recommend that all industry stakeholders commit to continuous structured engagement with their suppliers and subcontractors, to help to deepen their ESG knowledge, increase collaboration and share more sustainable ways of working.

5.3 Dublin Bus

Transport is a key area of the Climate Action Plan 2021 and targets set out aim to reduce emissions from this sector by up to 51% by 2030. Emissions in the transport sector have risen rapidly in recent decades and remain coupled to economic growth. As one of Ireland's largest businesses, Dublin Bus recognises that it has a responsibility and an opportunity to act on some of the most pressing climate and environmental challenges in the world today. With unparalleled reach across the capital, in thousands of communities, Dublin Bus is acutely aware that they have a real opportunity to create change.

Reducing carbon emissions in this sector will require a transition to renewable fuels but in cities in particular, will also require a major shift from an over reliance on the private car to more sustainable transport providers like Dublin Bus.

A clean, green, reliable, and efficient bus service enables sustainable transport habits. Dublin Bus is committed to the reduction of emissions, congestion, and energy usage. Through its work to promote faster, more sustainable public transport it is also

committed to making Dublin a more liveable city. Every time one of its customers chooses the bus, rather than taking the same journey by car, they are reducing their own carbon footprint and making a positive contribution to the environment.

By carrying up to 142 million people annually pre-Covid and 70 million people last year, Dublin Bus currently takes up to 87,354 cars off the road each day, as our customers opt for sustainable public transport. Every single full bus replaces the equivalent of 80 cars on our roads, reducing emissions by over 90% and freeing up 300 metres of roadway. This is accelerating the shift away from private cars, speeds up journey times, frees up road space and reduces emissions. New energy efficiency baselines have been set by SEAI averaging from 2016 to 2018 and Dublin Bus have reduced emissions by 14,238 tonnes in 2021.

Modal Change & Targets

Dublin Bus plans to sign up to Science Based Targets thereby committing them to becoming a zero-emissions operator by 2050. To help achieve this goal Dublin Bus is introducing zero-emission routes served by fully electric, battery operated vehicles. They envisage that by 2035, 100% of the fleet will be made up of diesel hybrid and battery electric buses. They are also progressing towards having their first two depots installed with electrical infrastructure over the next year or two which will facilitate the first order of battery electric buses with a view for further roll out across all other depots over the coming years. Depots across all locations will have partial infrastructure installed until full electrification in 2035.

Similar to other sectors, technology is changing the way transport services are provided to customers, which in turn is also enabling changes to the business models of traditional service providers like Dublin Bus. Dublin Bus recognise that they "[We] will not stay successful by standing still" and "[We] have to get ahead of the next wave and catch it". Anticipating the availability of these solutions is an important component of achieving the net zero strategy. For example, while Dublin Bus is not in control of when an affordable double decker electric bus will be available, they can prioritise route optimisation first while deploying single decker electric buses for those routes which are consistent with current battery ranges. Planning must also take account of the different space and logistic requirements for electric vehicles. Buses requiring overnight charging typically take up approximately 10% of a depot which, together with range considerations, will require a revised site strategy. A key element of their strategy is balancing near term deployment of proven technologies with roadmaps involving emerging technology which get to net zero.

Dublin Bus will be working closely with the NTA on delivery of electrification for the fleet and will monitor operational constraints in terms of range and may look at alternatives where battery electric cannot deliver. For emerging solutions, Dublin Bus are engaging with the wider stakeholder community to ensure that the required infrastructure and policy regime is in place to support new technologies such as green hydrogen for transport.

In advance of fleet replacement Dublin Bus is prioritising training initiatives to improve efficiency. Fuel efficiency measures have reduced consumption of diesel by more than 2.5 million litres per year. They have also adopted a range of waste reduction, water usage, and recycling measures including a ban on single use plastics and recycling 63% of waste across its eight depots in 2021.

Advice for Others

Dublin Bus' advice for other organisations seeking to achieve similarly ambitious goals is that it is essential to embed a sustainability strategy across your functions and operations and to define specific roles for key employee groups. Once a materiality assessment has been conducted the most material emission sources will be identified and technology assessments can be conducted which map out how the targeted reductions can be achieved. During this phase it will be important to get management alignment on future technical developments as these will form a cornerstone of the new strategy.

At Dublin Bus they have ensured that the entire team is committed to supporting this journey. This is all the more important as sustainability is moving at a very fast pace and requires clear communication and regular upskilling opportunities for all employees, from board to the depot, ensuring full engagement with initiatives such as driver training. This holistic approach to sustainability will be further expanded in the coming years to ensure that climate is embedded into all aspects of Dublin Bus's operations.

5.4 Keelings

Food production, both globally and in Ireland, makes up over a third of overall GHG emissions. The Climate Action Plan (CAP) has a number of agriculture specific actions and where the additional measures are taken into account (With Additional Measures scenario) the anticipated result would be emissions decreasing to approximately 19 Mt CO2 eq by 2030 which is an 11.3% reduction over the period 2020-2030. It is clear that these are very ambitious targets and significant change will be required in the sector. Keelings is a 100% Irish-owned family business dating back to 1926 when they established their farm. In the 1930s, they began growing fruits & salads and supplying them to the local Dublin markets. Now, Keelings Group employs approximately 2,700 people across 11 Divisions including - Keelings Retail, Keelings Market, Keelings Farm Fresh, Keelings International and Keelings Solutions.

Science-Based Targets

Keelings are clear that sustainability-based business practices are fundamentally aligned with their core value proposition and these practices applied to their operations can have a positive impact on the environment, the economy and the community. In line with this philosophy, in 2022, Keelings publicly committed to setting science-based carbon emissions reduction targets by 2024. Work was then conducted to identify the significant drivers of the emissions footprint and potential solutions to mitigate these sources. Keelings launched their Better World initiatives internally in June 2021.

In order to bring all their staff together on the journey, they appointed business unit leaders to drive the various initiatives. Key to this was providing upskilling workshops on topics such as climate change, biodiversity, and sustainable sourcing to each business unit, with a clear focus on the linkage to enabling the company to deliver on their sustainability commitments. A process was then initiated leveraging data collection and quantification which culminated in each business unit producing a workbook with proposed initiatives and target reductions per pathway. This was used to report to the board giving them confidence to support publicly launching the SBTI commitments in January 2022.

Keelings have cited the importance of seeking pathways that support business growth whilst decreasing absolute emissions (also known as decoupling) and having a clear narrative on this when engaging with the various business units and stakeholder groups. Another challenge to be overcome is ensuring a common interpretation of sustainability language and data across the organisation and when communicating externally. Key to this is common reporting frameworks and extensive engagement throughout the process bringing the business along with you on the sustainability journey, helping different stakeholders understand what these targets mean for them and providing them with the knowledge and tools to make the transformation to a low carbon business model possible.

Decarbonisation Journey

Keelings recommends others begin their sustainability journey by looking at the actions which can have maximum impact. For example, a major decarbonisation opportunity Keelings identified was

to increase the efficiency of their refrigeration systems used to keep fruit cool during distribution and storage. By conducting a review of their asset estate and accelerating equipment replacement Keelings estimates that their overall operational emissions decreased by over 24% between 2019 and 2021.

Another area Keelings are prioritising is the deployment of solar power to reduce their fossil fuel consumption. Careful focus on the payback period is critical when making this transition in order to create robust business cases that align with the overarching commercial imperative. Other considerations include glare studies due to their close proximity to Dublin Airport. Keelings are also looking at using heat recovery solutions from their industrial processes which can be used to heat water. In addition to setting a Science-Based Target, Keelings are also part of the Origin Green programme. Origin Green is an environmental sustainability program run by Bord Bia with specific initiatives linked to the reduction of energy consumption and carbon footprint as well as the overall lessening impact on the environment.

Conclusion

For companies in this sector, it is important to bring your stakeholders with you on your sustainability journey, tackle the most material issues first whilst ensuring you remain competitive. Keelings have shown that it is possible to do this and is committed to playing a leading role in reducing their carbon emissions in line with the Paris Agreement goals.

5.5 Vodafone

As the largest pan-European and African technology communications company, Vodafone, provides a strong example of how a company is successfully integrating ESG and sustainability considerations with its commercial / corporate strategy. To help the company realise its sustainable business strategy and goals, Vodafone has identified three purpose pillars to underpin its commercial activities:

- **Inclusion for all – Ensuring everyone has access to the benefits of a digital society**
- **Planet – Reducing its environmental impact and helping society decarbonise**
- **Digital society – Connecting people and things and digitalising critical sectors**

The SBT Journey

Vodafone's SBTs are underpinned by a combined Net Zero and SBT strategy. Vodafone's SBT journey has been informed by a number of key actions. The company's governance structure has been a key enabler of the company's SBT journey. The ExCo has overall accountability to the Board for Vodafone's sustainable business strategy and regularly reviews progress and was responsible for signing-off on Vodafone's SBTs. In 2021, the Board established a new Committee of the Board, the ESG Committee. The objectives of the ESG Committee includes the oversight of Vodafone's ESG programme including monitoring progress against KPIs and external ESG index results. The ESG Committee meets twice yearly and has 3 board directors. In parallel the Audit and Risk Committee are responsible for TCFD business risks. Joint ARC and ESG Committee meetings provide a mechanism for cross function ESG analysis

and engagement and the avoidance of 'group think'. With the chair of the ARC also sitting on the board of HSBC, Vodafone identify this as an important benefit as the Chair's external experience can provide additional external perspectives.

Vodafone utilised Datamaran's materiality analysis to inform their understanding of ESG, geopolitical, technology and emerging issues and stakeholders' consideration (Investors, governments and regulators, local communities and NGOs, suppliers and customers, employees). From a commercial perspective, Vodafone recognised the emerging evidence that consumers are becoming ESG engaged. In addition, with the EU Green Deal identifying a critical role for ICT in supporting delivery of the EU's decarbonisation ambitions, Vodafone believed that it would be challenging to access Green Deal project funding without having a credible sustainability strategy including SBTs.

With an industry wide commitment to SBTs, Vodafone also recognised the benefit to being first mover. The GSMA, in collaboration with the Global Enabling Sustainability Initiative (GeSI), the International Telecommunications Union (ITU) and the SBTi, developed an industry pathway for ICT companies to set SBTs. Vodafone was the first ICT operator / member of GSMA to use this SBT pathway.

Net Zero Ambition

Vodafone aims to realise its net zero ambition by 2040, bringing forward by 10 years Vodafone's original 2050 ambition to reach net-zero across its full carbon footprint.

Scope 1 and scope 2 emissions were previously targeted to achieve net-zero by 2030. Energy efficiency improvements and renewable electricity are key to these objectives. However, by July 2021 Vodafone had established itself as a totally Green Network within Europe powered by 100% renewable electricity. Vodafone's ambition is to globally purchase 100% of electricity from renewable sources by 2025, including across its African footprint.

Vodafone aims to achieve a 50% reduction in Scope 3 emissions by 2030. Improving data collection is identified as critical to reducing emissions associated with purchased goods and services (e.g. network infrastructure, handset devices). Procurement procedures which attach a 20% weighting to ESG focused criteria when evaluating suppliers are also central to Vodafone's scope 3 reduction strategy (e.g. suppliers that have set SBTs or provided CO2 data and reduction pathways are scored positively). Vodafone are also using CDP to support evaluation of their suppliers.

In parallel to its net zero ambitions, Vodafone aims to use its network, technologies and the services and products it offers its customers to support them in achieving their own ESG ambitions. Vodafone aim to support its customers to reduce their emissions by 350Mt between 2020 and 2030. IoT is helping customers reduce their emissions in different ways. For logistics, IoT can be used to identify optimal delivery routes to save time, optimising fleet management and productivity and decreasing fuel consumption. With Smart Metering, meters can be managed remotely reducing the need to physically send people to record the latest information, thereby supporting reductions in carbon footprints.

MyFarmWeb, an interactive cloud-based web platform, uses IoT technology to capture data and information, from the soil of a farm through to agricultural markets, into a system which supports analysis of that data. This can support farmers and agricultural businesses with best practice decision making resulting in environmental benefits including optimised crop management, fertiliser usage and reduced energy consumption. While the MyFarmWeb platform was originally built in South Africa, it is now being used in Ireland by Dairygold.

Though offsetting will play a role in fully abating carbon emissions, the company wish to minimise the role of offsets in their net zero strategy and are focused on reducing their emissions footprint.

Advice for Others

Vodafone identify Governance structures and early engagement with a company's financial function as being integral steps to SBT, Net Zero and ESG strategy development. SBT, Net Zero and ESG commitments can incur significant investments and costs. Whilst it is critical that the finance team are informed of the costs of SBTs and Net Zero, it is equally important that they understand the costs of not making such investments and the impact that this could have on the company's long-term commercial strategy, positioning with consumers and peers and regulatory exposure.

Reporting on sustainability

PwC reporting lead: Fiona Gaskin

ESG issues are relevant in some way to all organisations. The key point is to, firstly, assess and define what ESG topics are material to your business. This involves considering your strategy with an ESG lens, embedding consideration of those areas into your operations and, finally, reporting on the topics that matter. Recently there has been a great deal of dialogue around the need for comparable, consistent, mandatory, and independently assured sustainability information to enable stakeholders to make informed decisions on organisations and assess their performance in relation to others. To that end, there are a number of reporting requirements that organisations should be aware of:

- CSRD - On 21 April 2021, the European Commission presented its proposal for a Corporate Sustainability Reporting Directive (CSRD), which aims to revise and strengthen the existing rules introduced by the Non-Financial Reporting Directive (NFRD). Companies will have to report on how sustainability issues affect their business and the impact of their activities on people and the environment. Disclosure requirements include a description of the business model and strategy, sustainability targets and performance, roles and responsibilities, descriptions of policies as well as materiality assessments and due diligence processes implemented. The ESG topics include Climate Change, Water and Marine Resources, Biodiversity and Ecosystems, Resource Use and Circular Economy, Own Workforce, Workers in the Value Chain, Governance, Risk Management, Internal Control and Business Conduct. The proposed CSRD will require additional sustainability disclosures and, for the first time, a level of independent third-party assurance of reported ESG information - this means the assurance process will be essentially similar to an organisation's financial audit but will focus instead on non-financial information. The proposal for the Corporate Sustainability Reporting Directive includes provision for a common set of European reporting rules that will increase transparency and a requirement for companies to report sustainability information in a consistent and comparable manner. The proposed date for when the reporting requirements will come into force is currently being considered by the EU but it is expected to be in 2023 or 2024 for all large EU and listed companies. EU listed small and medium-sized enterprises (SMEs) are expected to be in scope for reporting from 1 January 2026.[7]
- ESRS - As noted above, one of the key provisions of the CSRD is that companies in scope would have to report using a common set of European reporting rules. These rules will take the form of European Sustainability Reporting Standards (ESRS) which will be adopted by the European Commission as delegated acts, on the basis of technical advice provided by the European Financial Reporting Advisory Group (EFRAG). EFRAG has been mandated to develop the draft ESRS and currently thirteen draft standards are in the public consultation phase. It would be wise to consider the ESRS' as akin to new financial reporting standards. As such, organisations should plan their adoption in a manner consistent with approaching a new reporting standard over something fundamental like revenue recognition.
- EU Taxonomy - As part of the EU Action Plan on Financing Sustainable Growth the Taxonomy Regulation was published in June 2020 to improve and standardise reporting on sustainability. In particular, the Taxonomy supports the Sustainable Finance Disclosure Regulation (SFDR) and the upcoming CSRD. The taxonomy is intended to be a classification system to categorise economic activities as either sustainable or otherwise, with the specific intention of allowing for direct comparison between products and entities, and for the elimination of greenwashing. Currently, the Taxonomy Regulations apply to large public interest entities that are required to publish non-financial information under the Non-Financial Reporting Directive as well as to Financial market participants that offer financial products in the EU. However, once implemented, any company reporting under CSRD must also report under the Taxonomy. There is a significant exercise required for any organisation to consider all of the technical requirements in the taxonomy and then identify and report on the required metrics.
- TCFD - For UK premium listed commercial companies, the UK Financial Conduct Authority has published a rule and guidance promoting better climate-related financial disclosures with alignment to the Task Force on Climate-related Financial Disclosures (TCFD). The FCA has recently expanded this rule beyond premium listed companies to require standard listed companies to report against the TCFD framework for periods beginning 1 January 2022. The UK Government

7 Definitions for large company and/or small and medium-sized enterprises can be found in the Accounting Directive 2013/34 EU.

has also legislated similar reporting requirements for certain publicly quoted companies, certain large private companies and limited liability partnership for periods beginning on or after 6 April 2022.

- SEC - In the USA, in March 2022 the Securities and Exchange Commission (SEC) released proposed rules on climate-related disclosures to enhance and standardise Climate-Related Disclosures. While they are not yet final, the SEC is likely to advance rules that require disclosure of prospective risks and material impacts on the business, strategy and outlook caused by climate change. The reporting requirements are generally aligned with the Task Force on Climate-Related Financial Disclosures (TCFD) framework. Mandatory assurance on this data is also a component of this proposed rule.

In addition to the above reporting requirements, there have also been significant changes regarding some of the voluntary sustainability reporting frameworks. Many of these frameworks that have become familiar to us namely Sustainability Accounting Standards Board (SASB), Climate Disclosure Standards Board (CDSB) and International Integrated Reporting Council (IIRC) have aligned under the International Sustainability Standards Board (ISSB), which is an International Financial Reporting Standards (IFRS) Organisation.

The ISSB have recently released two exposure draft prototype standards, one on the general requirements for disclosure of sustainability-related information, and the other on climate-related information which is currently in the consultation phase until July 2022. These standards are planned to be finalised by the end of 2022 subject to the feedback and discussions. It is hoped that they will align closely with the ESRS' noted above.

There is a clear direction of travel in terms of the focus and magnitude of sustainability reporting requirements. It is imperative that companies remain attentive and ensure that they are reporting in line with their stakeholder requirements, which includes focusing on material impacts, risks and opportunities, as well as complying with relevant reporting rules and regulations. Given the focus on reporting of sustainability information, the accuracy and credibility of this reporting should be front of mind and companies should ensure that they plan early to be able to comply with the ever-expanding list of regulatory and stakeholder reporting requirements. In particular, organisations should not underestimate the significant improvements typically needed to bring their non-financial reporting data up to a level suitable for mandatory or voluntary assurance.

Supply chain management

PwC supply chain lead: Mark McKeever

Supply chain management has emerged as the frontline of sustainability challenges and aspirations across the business world. It is through the lens of physical supply chains that we see the impact businesses have on our environment and the role that they can play in fostering an inclusive society. With this perspective, supply chain management has become a space in which businesses can put their words into action and build sustainability into their day-to-day operations.

Global supply chains have experienced more than two years of severe disruption as a result of COVID-19 and now with the war in Ukraine, the volatility continues today with cost price inflation, energy supply shocks, long and uncertain lead times, shortages in supply of key raw materials, food security concerns, ongoing 'lockdowns', port congestion and airspace closures on key trade lanes. It is vital, therefore, that businesses navigate supply chain volatility without sacrificing their sustainability achievements and aspirations. Indeed, innovative companies are identifying solutions to meet these challenges which meet both their commercial and sustainability objectives such as near-shoring, using alternative transport routings and modes, and optimising last mile delivery services to reduce wasted trips and driving/vehicle waiting time.

The global regulatory and reporting landscape is also evolving, driving businesses to consider both their impact on the environment and society, and the impact of climate change on their operating models, as well as changing the way we view and report on business performance. The Corporate Sustainability Reporting Directive (CSRD), for example, requires that all large companies publish reports on their environmental and social impact activities to assist key stakeholders in evaluating non-financial performance.

In addition, we are seeing multilateral initiatives that will affect local and global business operations. At the COP 26 climate summit, for example, nearly 200 countries pledged to address deforestation, fossil fuel financing, reductions in methane emissions and transitions to zero-emission vehicles. Building sustainability into supply chain management is, therefore, crucial to making genuine progress towards our national and international sustainability aspirations.

In practice, a strategic shift is underway across many physical supply chains as we rethink the way that businesses source and produce goods in order to develop sustainable products, business models and stakeholder relationships. As part of this, many businesses are proactively building social and environmental considerations into their supplier relationships and working with suppliers to ensure adherence to a changing regulatory landscape. Some businesses are also embracing sustainability trends and pressure from stakeholders as an opportunity to gain competitive advantage. The concept of the Circular Economy, for example, is emerging as an opportunity to harness sustainable growth by shifting from a traditional, linear view of global supply chains towards a circular view of the supply chain where end-of-life physical products are not left to accumulate as waste but are fed back as inputs to production.

However, one of the key barriers to enhancing supply chain sustainability has long been the lack of transparency and control over suppliers' own supply chains i.e. the operations of both suppliers and suppliers' suppliers. Technology is helping to address this problem. The emergence of the Supply Chain Control Tower, for example, is providing enhanced visibility capabilities that allow a business to see and understand its entire material flow and logistics network, giving a holistic overview of the global supply chain and emissions generated by supply chain activities. Indeed, we are seeing an increase in companies investing in tools and technologies to track their suppliers' carbon emissions. Based on our recent PwC Global Procurement survey, 27% of companies have either used or experimented with this particular use case. In addition, Blockchain has emerged as a technology that can dramatically enhance control over the provenance and quality of input materials and finished products, particularly in industries where consumer or patient safety requires a robust control framework. Innovation in supply chain management can, therefore, play a key role in achieving a company's sustainability agenda.

Transport

PwC sector lead: Yvonnne Thompson

Road Transport

Our transport infrastructure is the backbone of our economy and our society. Our roads, in particular, have been well developed through the past 30 years with a major motorway network, well maintained national roads and a network of regional and rural roads of over 100,000 kilometres in distance. This enables connectivity and transport relatively quickly across the country. However, the majority of the vehicles utilising our road network: private cars, buses, Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs) are internal combustion engine (ICE) vehicles.

As we continue on our journey to Net Zero, we are starting to see a shift in policy with significant funding targeted at the pull factors of improving more sustainable mobility such as public transport, cycling and walking to create a modal shift which will significantly reduce carbon emissions in transport.

While the pull factors of modal shift have started to receive significant investment, the push factor of increased cost to disincentivise private car use in particular has not yet started. We have seen the implementation of the carbon tax and the recent increase in the cost of fuel which has pushed people to consider hybrid or electric, but a road user charge based on journey time or congestion charging has yet to be implemented. This is of particular use in urban areas where congestion and pollution can be significant, and charging can help force the modal shift needed to reduce emissions. It can also help reduce congestion on roads, a significant cost to business.

Electric Vehicles & Hydrogen

Over the last two years we have seen a jump in the number of electric vehicles on our roads. This has been aided by the recent hike in fuel costs, but it remains low relative to other European countries and is still well off the target of 1 million EVs by 2030. To enable further growth, investment must be made in EV charging infrastructure. The Department of Transport recently announced a draft strategy on this. We await the outcome of the strategy process which should result in development of a framework for delivering public charging points across the country as well as potential subsidisation in some areas.

While the private car and light goods vehicle transition is likely to veer towards electric, the technology for HGVs is likely to be in the form of sustainable fuels such as green hydrogen. The challenge for businesses is their reliance on supporting policy and infrastructure to enable these solutions to be delivered at a pace that is in line with companies', often more ambitious, decarbonisation trajectories.

Aviation & Shipping

The aviation and shipping industries have committed to achieving net zero carbon emissions by 2050 through the International Air Transport Association (IATA) and International Chamber of Shipping (ICS). Both aviation and shipping are hard to abate industries meaning that the emissions reduction solutions required to meet net zero goals will come from technologies that are not yet commercially available. The transition to carbon neutrality is critically dependent on actions taken today, even though the results of those actions will not be immediately apparent.

Aviation is an innovative sector and actions to reduce GHG emissions are already underway. Aircraft emissions have reduced by over 50% per seat kilometre through improvements in aircraft design and operational efficiency since. The key areas of focus to meet aviation's net zero target are centred around sustainable aviation fuel (SAF), operational improvements (improved air traffic management, etc.), other alternative fuels (hydrogen, electric, etc.), carbon capture techniques and verified carbon credits schemes.

Energy system

PwC sector lead: Kim McClenaghan

Ireland's commitment to a long-term (2050) zero carbon economy, coupled with EU objectives of a climate neutral EU, requires significant abatement policies and activity. As last winter approached security of supply concerns were raised and interventions tabled to deliver additional fossil fuel-based generation assets. The Russian invasion of the Ukraine has escalated this to a critical domestic policy issue requiring urgent attention. Immediate action is required to ensure that our national energy needs are met over the next 24 months. Policy makers are looking to balance this need with the wider energy sector decarbonisation objective. Increasing energy costs are contributing to rising inflation rates and severely impacting on those with unhedged energy exposures. The need to deliver sufficient, cost effective energy to meet national demand while in parallel decoupling economic growth from emissions growth will be very challenging in the short term.

However, this should not distract from the longer-term objective of a low carbon energy system. Ireland's geographical position, an island on the edge of Europe, requires Ireland to solve a slightly different problem to that facing many of our European peers with a greater obligation to find national solutions to meet electricity demand. This will continue to require significant deployment of wind, solar and storage energy infrastructure. The near-term priority for policy makers is to significantly increase the percentage of renewable electricity produced, up from just over 30% to at least 80% by 2030, while in parallel looking to the electrification of significant portions of the heat and transport demand. This is essentially a two-dimensional challenge as we are chasing a much bigger percentage of a much bigger number.

The increasing focus on Net Zero and Science Based Targets is leading companies to look at innovative ways to drastically reduce their usage of fossil fuels. In light of rapidly increasing energy costs many companies are re-looking at the business case for solutions such as deep retrofitting and fleet upgrading. Looking further ahead it is anticipated that a zero-carbon gas solution will be required both for heat and transport applications but also as a fuel for electricity generation to address periods of low wind speed and poor solar irradiation. In essence the future energy system will see much higher levels of electrification complimented by availability of a 'clean' gas. Policy makers are determining what this 'clean' gas system will look like but the solution will, in all likelihood, rely heavily on biogas and green hydrogen. It is important that companies ensure that they have sufficient clarity on emerging policy, and the deployment of national energy infrastructure, to appropriately feed into their individual plans to reduce scope 1 and 2 emissions. This will enable them to make the right investment decisions which will minimise the costs associated with their net zero commitments.

The 4th Low Carbon Pledge report details the progress of the signatories on their journey to setting science-based targets (SBTs). To meet our increasingly ambitious national targets, it is imperative that businesses work together to enable the transition to a low carbon economy.

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Conclusion and Recommendations

The Pledge signatories continue to make significant progress in reducing their carbon emissions. The business community is clearly taking a leadership role in the transition to a low carbon economy. The case studies clearly signpost some of the key elements that companies should consider when setting their SBTs.

A number of insights and observations have been collated while writing this report.

Recommendations

Establish your true baseline

Before determining how quickly you can move on the pathway to Net Zero, accurately assess your full carbon footprint. This can be done by using accepted methodologies to determine your scope 1, 2 and 3 emissions, to understand what the material factors are driving these emissions for each. This will provide you with clarity as to where the challenges lie.

Understand your operating environment

Once you have clarity on your emissions, it is important to consider your regulatory/commercial operating environment. What commitments are your peers making? What do your customers expect? Are regulatory or policy changes anticipated? This will inform how quickly you will need to adapt.

Set ambitious targets

Set an ambitious target. It will not always be possible to know exactly how you will achieve your netzero target. A robust review of your operating environment, and detailed examination of your emissions profile, will allow you to set 'stretch' but achievable targets. Set both long and short-term targets to provide appropriate milestones for your Net Zero journey. It is important to understand the risks and opportunities resulting from these targets. It is important to develop actions to mitigate and adapt to the identified priorities.

Senior leadership sponsorship & aligning your corporate strategy to Net Zero

Ensuring full senior leadership sponsorship is critical to a successful SBT journey. It is vital that everybody across the whole organisation understands the importance and the urgency of this agenda and how it aligns with the corporate strategy.

Corporate strategies should be reviewed to ensure their full alignment with your Net Zero ambition. This will require decoupling the business from carbon intensive assets and activities. Companies will need to target climate-related opportunities, while at the same time ensuring sustainable growth in the short to medium-term. This will require that your Net Zero targets are integrated into your strategic planning and risk management frameworks. Care should also be given to enhancing governance frameworks to drive the required change.

Report and verify

Targets should be underpinned by appropriate standards/ measurement methodologies, such as science-based targets, and attention should be given as to how best to report progress against your net-zero, and wider sustainability objectives. Having selected the appropriate reporting framework, such as Task Force on Climate-related Financial Disclosures (TCFD) or Global Reporting Initiative (GRI), define how you will communicate progress with stakeholders. In order to provide confidence to those outside the organisation, it is important to get external validation of your non-financial data. This will confirm the accuracy and credibility of your reporting through appropriate assurance, commensurate with the criticality of this data to your stakeholders.

Engage your finance department

SBT, Net Zero and ESG commitments can incur significant investments and costs. Whilst it is critical that the finance team are informed of the costs of SBTs and Net Zero, it is equally important that they understand the costs of not making such investments and the impact that this could have on the company's long-term commercial strategy, positioning with consumers and peers and regulatory exposure.

Supply chain support

With supply chain decarbonisation underpinning Scope 3 emissions reduction ambition, commit to continuous structured engagement with your suppliers and subcontractors, to help to deepen their ESG knowledge, increase collaboration and share more sustainable ways of working.

In 2025, BITC will reveal the new Pledge which will contain a net-zero and nature requirement. Such requirements are viewed as integral to efforts to further raise the Pledge's ambition. The IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation notes that with the exception of solar and wind energy, the most effective strategies for mitigating CO2 emissions are all natural based solutions (NBS).[8]

As the low carbon pledge transitions towards net-zero and nature considerations, it is important that Pledge signatories are aware of these future requirements and consider how best to prepare for them. When considering the role of NBS with a company's carbon strategy recognition must be given to both the SBTi's 5-10% rule on offsetting and the complexity and variability of NBS ecosystems and associated carbon accounting.

8 NBS include ecosystem protection, restoration, and better management of farmlands. The IPCC found that these could mitigate between 11 to 14 billion metric tons of greenhouse gases per year

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