

A Path To Net Zero Emissions:

Decarbonising The Construction Supply Chain

Market – United Kingdom – Q3 2021



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→ A GREEN
FUTURE



Definition of net zero

“Net-zero emissions are reached when anthropogenic (i.e., human-caused) emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period.

Intergovernmental Panel on Climate Change (IPCC)

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Introduction

This report is a guide for Enterprise Ireland clients targeting or operating within the UK construction sector, to inform and support their navigation to the start line of a journey that leads to net zero carbon emissions.

We acknowledge that construction is a heavily fragmented industry, composed of businesses of all sizes and with revenue models that align to manufacturing, distribution, contracting, design, management and many more - one size does not fit all.

Nonetheless, the means of achieving net zero is becoming clearer and this is being expedited as industry and government begin to reset and rebuild from the annus horribilis that was 2020.

In a review of research there appear to be four key areas that contribute to the circa 40% of the UK's carbon emissions that are accounted for by the built environment:

1. The corporate emissions of organisations in the construction sector
2. Site based operations and activities
3. Embodied carbon through the lifecycle¹
4. Energy use in the operation of the completed asset.

A key focus of this report is to prioritise the key factors that address the question of Why focus on emissions? (making the business case) and to demystify the question of What? (a decarbonisation journey could look like).

In doing so, the report will lay out three sections:

- Nine key reasons that underpin the economic and social rationale for starting your journey
- The nine key components of a net zero roadmap
- Next steps and signposts to a selection of Enterprise Ireland supports and wider groups and business sources for further reading and understanding around this dynamic and rapidly evolving subject.

Climate action

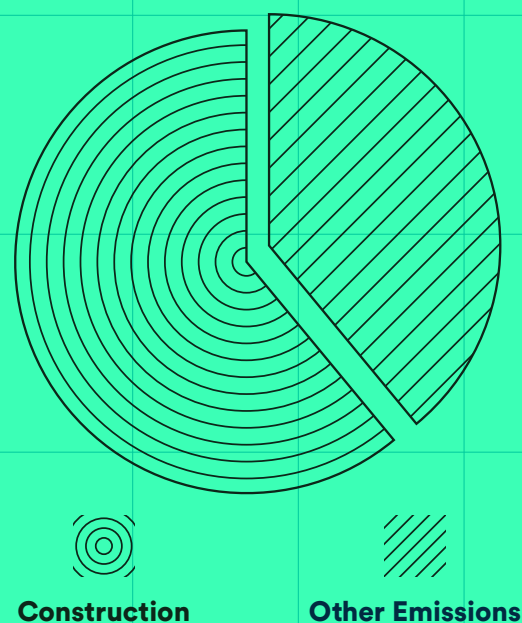
On April 20th 2021, as the UK emerged from the second wave of the pandemic, any concern that government momentum towards the 'Green Growth' agenda might be lost was further diluted by a tightening of time line and scope– to reduce 78% of all carbon emissions by 2035.ⁱⁱ *“Over half of Britons feel government should prioritise the environment over the economy in wake of the pandemic, even if this means slower economic growth or job loss.”* (December 2020 Ipsos MORI)

Fifty years ago, most people would not have yet encountered the terms 'global warming' or 'climate change': climate change didn't become a major concern on the global stage until the late 1970s. Since that time however, there has been immense change in both people's attitudes and in political will to tackle the problem – with an acceleration in business focus since the 2015 Paris Agreement.

In recent years extreme weather events have become far more evident. Floods, droughts, heatwaves and wildfires have been making headlines around the world, fulfilling scientific predictions of global warming. This has led climate activists to become increasingly visible. A seminal moment in 2019 saw Greta Thunberg addressing the UN Climate Summit and receiving a Nobel Peace Prize nomination with school boycotts taking place across the world. 'Extinction Rebellion' disrupted London's transport, retail and commercial infrastructure for 10 days to highlight the urgency of the issue.

Today, the electorate and consumer preferences are driving policy and business decision making and this is now having important implications for the construction industry. According to the World Green Building Council (WGBC), the built environment accounts for around 39% of the UK's carbon emissions.ⁱⁱⁱ As a result, it's important that we anticipate and preempt a series of further and deeper interventions in the years ahead.

Global Carbon Emissions



UK Climate Policy

- The UK government to set into law the world's most ambitious climate change target, cutting emissions by 78% by 2035 compared to 1990 levels
- For the first time, the UK's sixth Carbon Budget will incorporate the UK's share of international aviation and shipping emissions
- This would bring the UK more than three-quarters of the way to net zero by 2050

SECTION ONE:

9 reasons to go net zero

1. A societal shift
2. Government policy
3. Public procurement
4. Investor demand for Environmental, Social & Governance (ESG)
5. Asset owners' demand
6. Construction supply chain
7. War for talent
8. Industry leadership and momentum
9. Competitive advantage



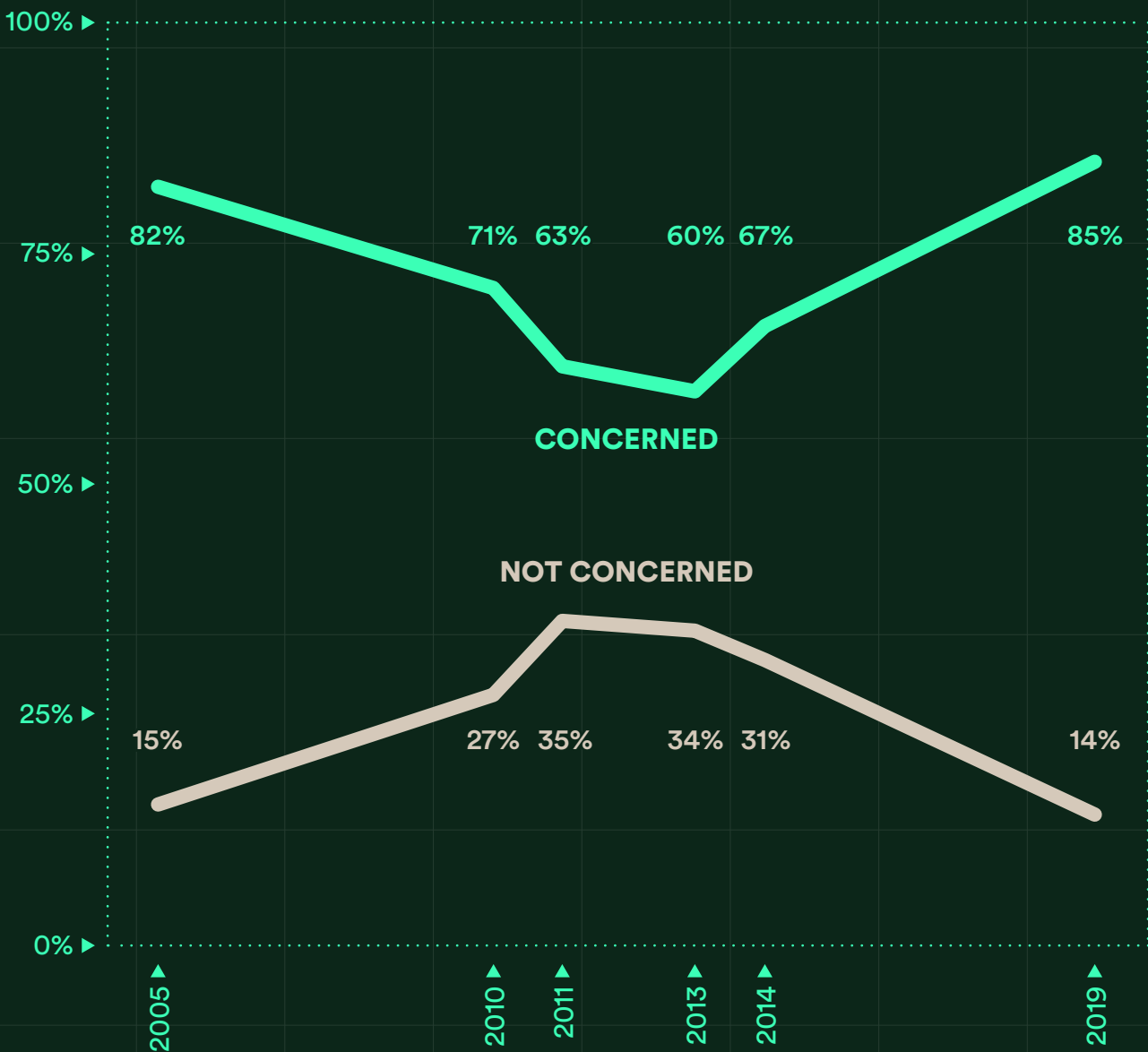
A societal shift

Public opinion on climate change has certainly shifted in recent years. In August 2019 an Ipsos MORI poll showed that 85% of British people were concerned about climate change, while three in four believe that Britain is already feeling the effects of climate change. This compares to 41% who thought the same nine years earlier in a 2010 poll.

The majority polled thought that the UK should bring all emissions to net zero more quickly than by the 2050 target that had been announced by the Conservative government in 2019.^{iv}

Climate Change Concern

How concerned, if at all, are you about climate change, sometimes referred to as 'global warming'?





2

Government policy

Both domestic and international policy have changed to reflect the shift in sentiment of society.

At an international level, 197 countries signed the Paris Agreement which aims to keep the rise in global temperatures this century to well below 2 degrees Celsius above pre-industrial levels, and to limit the temperature increase to 1.5 degrees Celsius.^v

Domestically, the UK government set the legally binding target of becoming a net zero economy by 2050.^{vi} In 2020 the Prime Minister highlighted the government's commitment to combatting climate change when he revealed his integrated Ten Point Plan for a Green Industrial Revolution.^{vii} This was further evidence that climate action is coming to the forefront of the UK's longterm industrial strategy, pre-empting further pre-empting of rules and introducing new climate action policies for the construction industry in the years ahead.

UK Government's Ten Point Plan for a Green Industrial Revolution

- Offshore wind to power every home, supporting up to 60,000 jobs
- Develop the world's first town heated entirely by hydrogen by the end of the decade
- Advancing nuclear as a clean energy source
- Backing car manufacturers to accelerate the transition to electric vehicles
- Investing in public transport, walking and cycling
- Supporting industries to become greener in zero-emission planes and ships
- Making homes, schools and hospitals greener, whilst creating 50,000 jobs by 2030
- Become a world leader in carbon capture tech
- Planting 30,000 hectares of trees every year to protect our environment
- Making the City of London the global centre of green finance

Public procurement

The public sector is the biggest customer for construction in the UK. In 2021 alone, up to £37 billion worth of contracts will be brought to market across economic and social infrastructure.

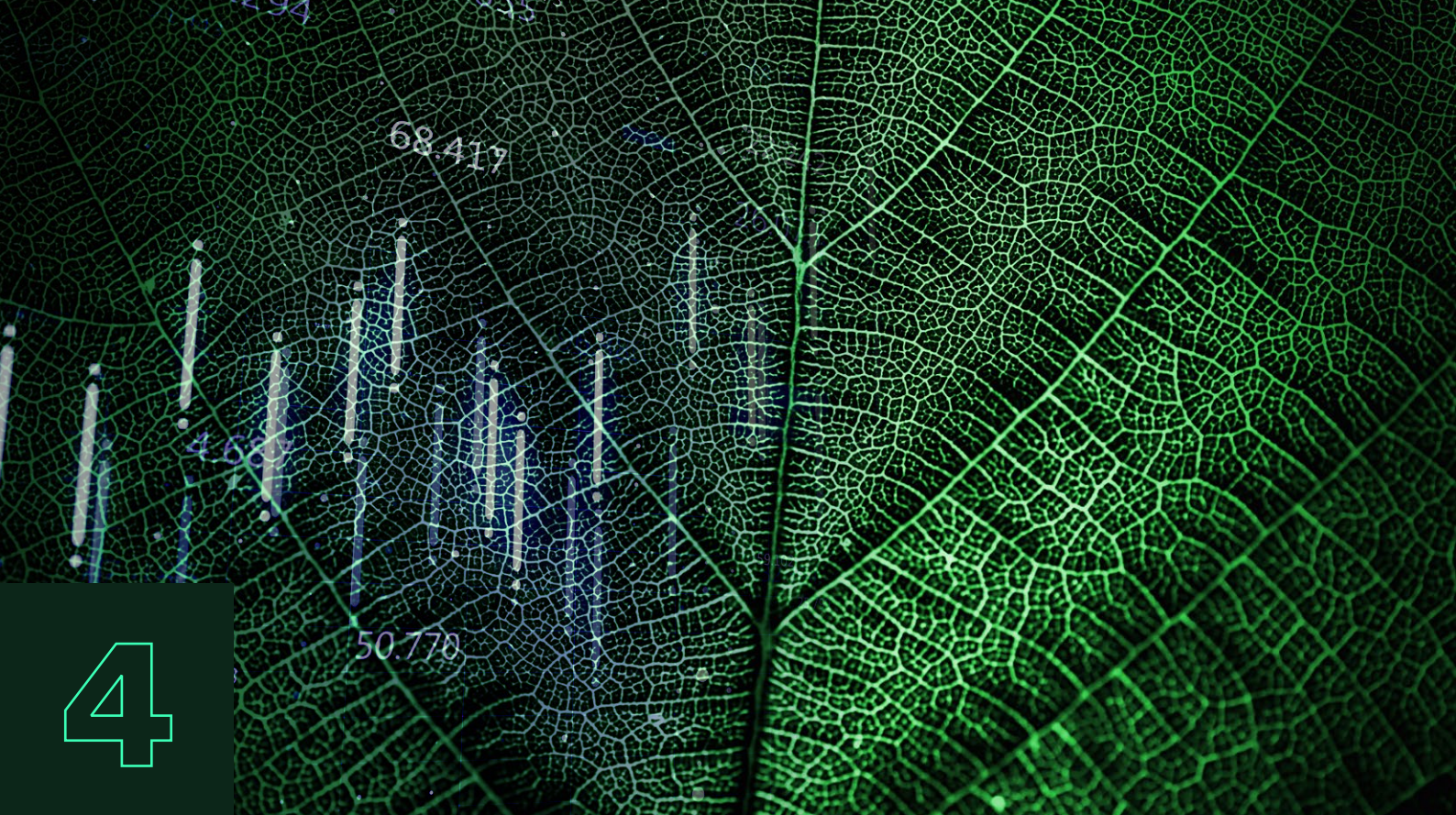
New public procurement rules announced on 5th June 2021 will require businesses to have implemented a net zero carbon reduction plan from 30th September 2021 if they wish to tender for framework agreements or through dynamic purchasing systems. The Public Policy Note (PPN 06/21)^{viii}, applies to procurement contracts valued over £5 million from all central government departments, their executive agencies and non-departmental public bodies.

In December 2020, The National Audit Office (NAO) published a report 'Achieving net zero'.^{ix} The NAO noted that new Greening Government Commitments targets, which are targets set to reduce the environmental impact of government bodies, were due in April 2021 and new procurement requirements would also come into force in 2021. The procurement requirements will place a minimum 10% weighting within the quality/social value bid assessment criteria on environmental outcomes such as 'Decarbonising and Safeguarding our World: To ensure the places where people live and work are cleaner and greener, to promote sustainable procurement and secure the long-term future of our planet'.^x

The NAO report also highlighted the importance of the Department of Business, Energy and Industrial Strategy (BEIS), HM Treasury and the Cabinet Office in decarbonising the UK. BEIS will launch the UK's net zero Strategy in November 2021, ahead of the UN Climate Change Conference COP26^{xi} later that month and HM Treasury is to publish its review on the cost of net zero and principles for how it could be paid for. Combined, the aim is to set out the government's vision for transitioning to a net zero economy by 2050.

3





Investor demand for ESG

Investors are becoming increasingly committed to corporate climate action policies and many are focusing on this issue when evaluating investment and divestment decisions. This has led to investors demanding more consistent information with companies having to improve the quality and detail of their reporting. A number of different ratings and indices are measuring corporate ESG performance, drawing data through ESG frameworks such as CDP or SASB.

In December 2020, The net zero Asset Managers Initiative involving some of the world’s largest investors (collectively managing assets worth more than \$9 trillion) committing to investing only in companies with net zero carbon dioxide emissions by 2050 as part of the fight to contain the climate crisis^{xii}.

Legal & General Investment Management - the UK’s largest investor - and UBS Asset Management are among the signatories, pledging they will aim for all companies in their portfolios to be decarbonised by 2050 or earlier.

Leading Investors representing \$71 trillion call on banks to set enhanced net zero targets

- 35 Investors with \$11 Trillion aum urge banks to align financing with net zero emissions , scale up green finance and withdraw from projects that fail to meet paris goals.
- Banks invited to participate in development of paris alignment assessment benchmark.
- Investors call on bank remuneration committees to ensure variable remuneration is aligned with delivery of the net zero commitment and interim targets.

A group of leading global investors has developed investor expectations for the banking sector through the Institutional Investors Group on Climate Change (IIGCC), calling on banking firms to set enhanced net zero targets for 2050 or sooner with interim targets to be included, scale up green finance and withdraw from projects that fail to meet Paris Agreement goals.

(from an IIGCC press release dated April 2021)

The largest investors and shareholders have significant power to incentivise companies to decarbonise. The world’s largest asset manager, Blackrock, has seen a ‘material shift in the last two to three years’ in regard to ESG investment criteria. This material shift was crystalized as ‘tectonic’ in the Blackrock CEO, Harry Fink’s, 2021 letter to CEOs.

In recent months there has also been a recognition of investor influence on lenders. For example, a group of leading global investors stated their intention to align \$11 trillion of financing with net zero commitments.

The ‘tectonic’ shift in investor sentiment looks to have already carried through to construction projects and contractors. The December 2020 National Federation of Builders’ (NFB) ‘Delivering a Low Carbon Future’ handbook highlights that the largest stakeholder group exerting pressure on contractors/ builders to reduce their carbon emissions was shareholders and investors.

BLACKROCK: The Tectonic Shift Accelerates

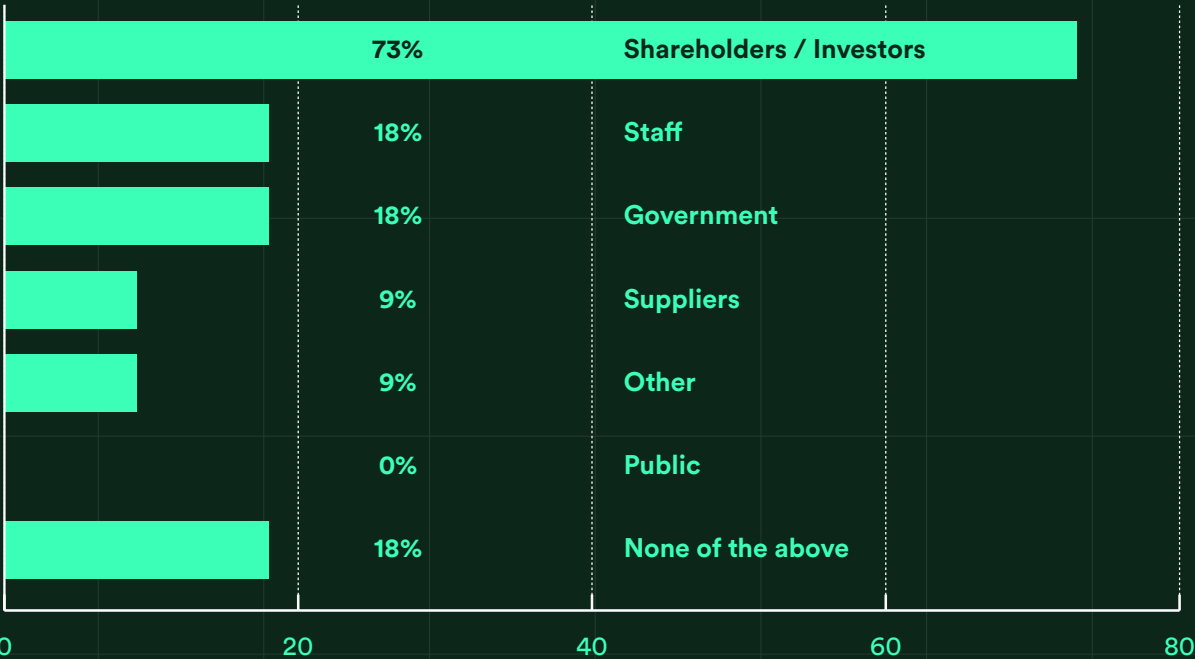
Last year, we outlined our conviction that the world was on the cusp of a tectonic shift – a fundamental reallocation of capital towards sustainable assets. In 2020, we began to see this shift take shape. From January to November 2020, investors in mutual funds and ETFs globally invested \$288 billion in sustainable products, a 96% increase over the whole of 2019.1

This increasing shift towards sustainable assets has resulted from a range of factors – improved sustainability data, a widened array of sustainable investment options, and a growing consensus about sustainability as a persistent driver of returns. This is fuelling a global reallocation of capital towards more sustainable companies that will continue over many years – and we believe that investors who move more quickly to take part in this reallocation will benefit.

During 2020, 81% of a globally-representative selection of sustainable indexes outperformed their parent benchmarks.

- Harry Fink’s 2021 letter to CEOs.

Has your business experienced pressure to decarbonise from the following stakeholders?



British Land – Pathway to net zero Carbon



British Land is one of the UK's largest property companies with assets valued at more than £10.3 billion.

Over the past decade, sustainability has been embedded throughout British Land. "Our continued strong sustainability performance is reflected in our rankings in ESG indices, including a green star rating for the tenth consecutive year in the Global Real Estate Sustainability Benchmark (GRESB), AAA rating in MSCI, 96th percentile in Sustainalytics for our sector, and inclusion in FTSE4Good and Dow Jones Sustainability Indices (DJSI) 2019."

After coming to the end of its carbon strategy in 2019, British Land embarked on a new journey 'Pathway to net zero Carbon.' This plan outlines the company's most ambitious target to date - achieving net zero carbon by 2030.



Juliette Morgan
Head of Sustainable Development



“Investors are far more focused on this issue than ever before. Even though the topic has become more complex over the last number of years, investor knowledge in the area has developed rapidly.”

Priority drivers

There have been a number of important drivers behind British Land's ambitious targets. Firstly, Morgan pointed out the importance of the employee cultural acceptance that is being embedded with a clear commitment to carbon reduction at all levels. "Last year marked the first time that remuneration levels of the executive directors became linked to our carbon reduction targets. Also, teams across the business must report their carbon levels every quarter and this drives an internal competition to keep emissions low. Similarly, there are now a number of committees within British Land that are exclusively committed to the agenda. It's important that a mechanism exists for all employees to have the opportunity to be involved."

Morgan also pointed to the pressure, but also the reward, from investors as a key driver for increasing the pace of change within British Land. "Investors are far more focused on this issue than ever before. Even though the topic has become more complex over the last number of years, investor knowledge in the area has developed rapidly." British Land has recently reaped the benefits of their strong ESG performance when Royal Bank of Canada changed the company's stock rating

from 'sell' to 'hold' "based explicitly on its sustainability performance."

Offsetting

From 2020 offsetting began to play a role in British Land's net zero transition. Clearly, no building can be built without carbon, so offsetting can help in compensating for any residual emissions. According to Morgan, offsetting should only be carried out after every other option for carbon reduction has been exhausted. "You offset what's left, it's important you don't buy your way to carbon reduction when that investment could be better placed. There are many different ways to offset, for example, British Land has chosen nature-based solutions, but there are many other viable options such as investing in renewables and forestry." Morgan pointed out the importance of ensuring your offsets are approved. In the UK the Gold Standard and Verified Carbon Standard (VCS) are the most recognized standards and will verify the quality of your offset.

Innovation

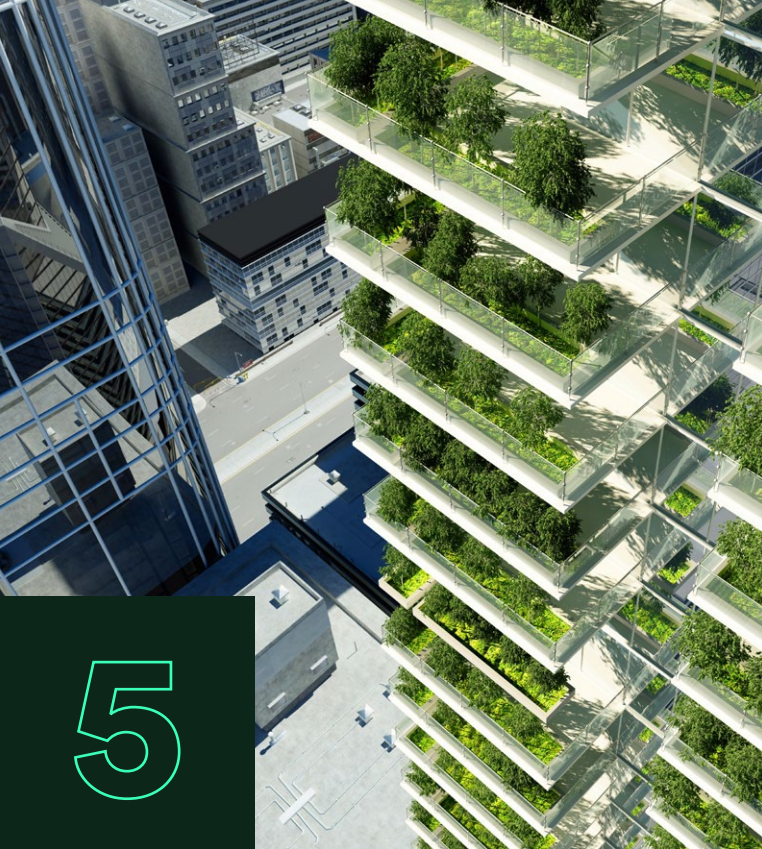
British Land has recently set up a transition vehicle to raise funding for its comprehensive decarbonisation programme which involved placing a carbon levy of £60 for each tonne of carbon embodied in

new developments. This levy will encourage teams to keep emissions low. The levy also helps British Land in reaching their goals as one third of the fund will go toward the purchase of accredited offsets, while the remaining two thirds of the fund will provide capital to retrofit the company's standing assets.

Supply chain

From 2023 British Land has signaled its intention to incorporate net zero carbon criteria into its procurement of goods and services. This is a clear signal to the supply chain that the values of British Land must be shared values.

Morgan also highlighted the importance of collaboration within the industry to reduce carbon across the built environment. "It will be important for the whole industry, including insurers, regulators, clients, researchers and material manufacturers to move as a system. Organisations such as UKGBC and IGBC and standards such as BREAMM will help us work towards this common goal. 'For example, I've been impressed with the way different stakeholders have come together to develop the case for structural timber in construction – a key material for reducing embodied carbon in buildings.'"



The corporate clients of construction

The UK Treasury’s plans show that all companies listed on the stock market will be forced to report climate data by 2022. This mandatory UK climate data will be in line with standards set by the taskforce for climate-related financial disclosures (TCFD).^{xiii} The carbon disclosure data requests, which cover all the TCFD requirements, are backed by more than 500 investors with \$106 trillion in assets under management.

Also driven by investor sentiment, consumer attitudes and pre-emptive policies by governments, many private sector clients of construction have been taking significant steps on the carbon reduction journey. This will have a direct impact on the sector and the companies working within it.

Leading UK real estate investment trusts (REITs) such as British Land and Landsec have put together comprehensive plans to demonstrate how they will reach their targets. Many of these companies have set targets that will put them at net zero carbon well before the UK’s legally binding 2050 commitment. These companies’ supply chains will play a key role in helping them to meet their carbon reduction plans.

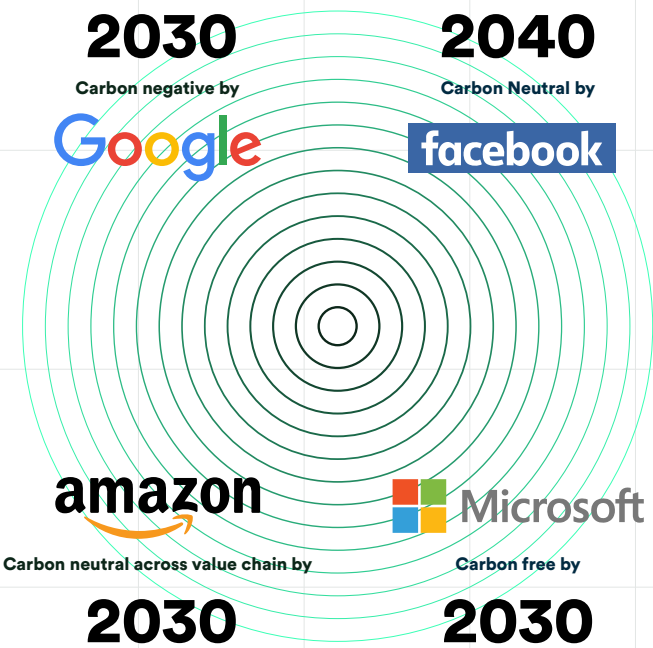
Market Advisors at Enterprise Ireland are increasingly recognising evidence of a ‘green wave’ of action and incentives across the majority of construction sectors, with some sectors, regulators and clients taking a leadership position.

Water

In November 2020 the UK water sector published the world’s first sector-wide plan to reach net zero carbon emissions. The ‘net zero 2030 Routemap’ sets out for the UK water sector to be net zero 20 years before the UK government’s 2050 target^{xiv}. The plan stresses throughout that the path to net zero will be a collaborative effort between supply chain companies, contractors and the water utility companies.

Digital & Cloud Services

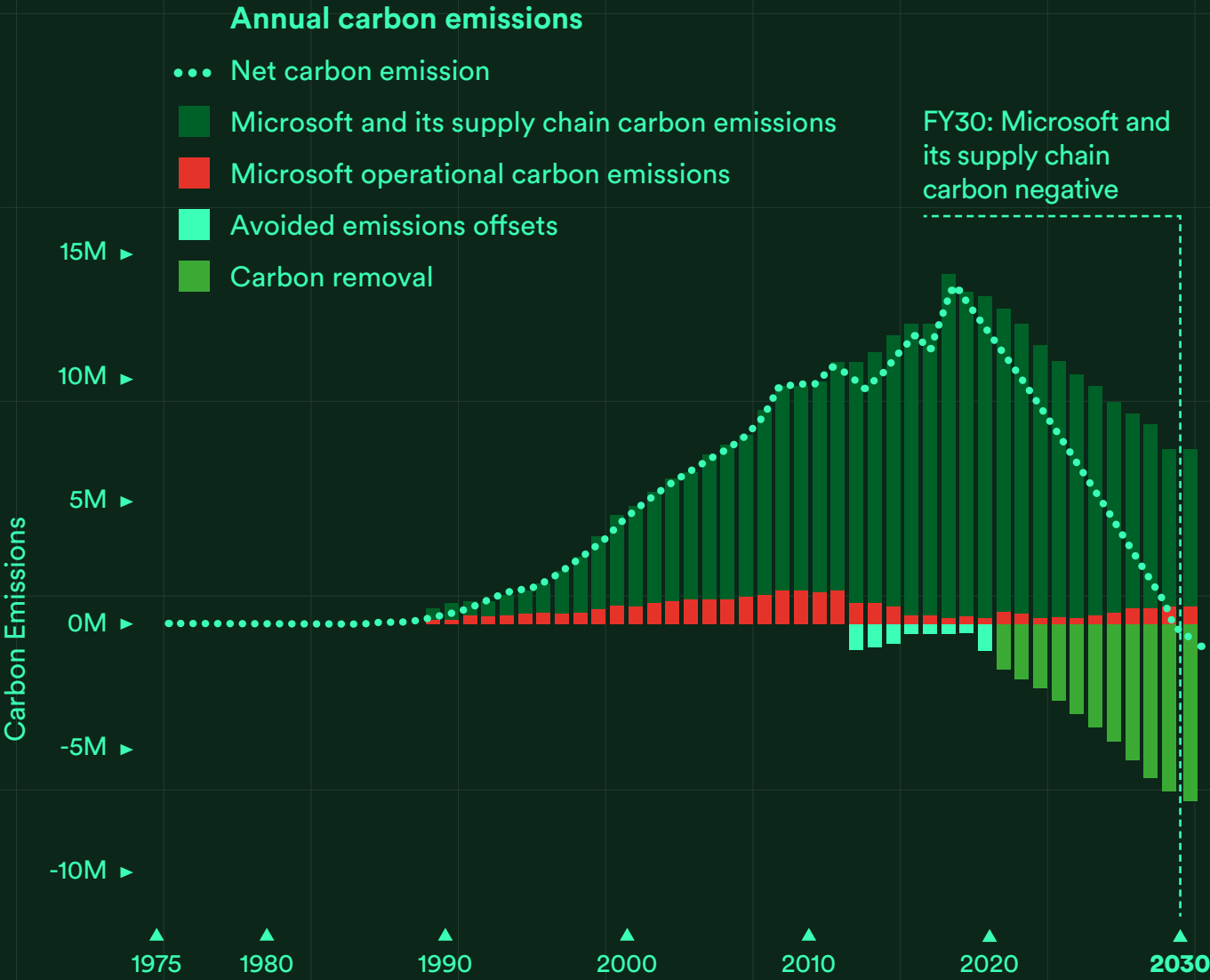
In 2011, Facebook announced its plan to focus on using renewable energy and in 2020 the company achieved this target with 100% of their energy provided by renewable resources^{xv}. Other tech giants have followed suit, for example, Apple has set the target of becoming carbon neutral by 2030 across its operations, supply chain and product lifecycles.^{xvi} The use of hyperscale data centers by companies such as Google, Microsoft and Amazon has also greatly increased their efficiency. Heating and cooling systems have been used to conserve energy during operation, minimizing the amount of carbon being emitted. Some of their targets can be seen below.



Many of these Digital & Cloud Services companies are expecting their supply chain to align with their low carbon targets. For example in April 2021, Salesforce announced it had added a Sustainability Exhibit to all supplier procurement contracts with the goal of reducing the company’s collective carbon footprint. They will be working with their supply chain to reduce their emissions^{xvii}. Microsoft has stated that their targets and calculations will also take their supply chain into account.^{xviii}

The graph below illustrates Microsoft’s ambition to be carbon negative by 2030, meaning the company will remove more carbon from the atmosphere than it will emit.

Microsoft’s pathway to carbon negative by 2030



Microsoft Commitment & Ambition 'The worlds next Moonshot'

- 75% of Microsoft’s emissions are **Scope 3** of which supply chain accounts for 65-70% = 5-8M ton CO2e reduction over 10 years.
- Circular solutions can save between 15% (material recovery) and 90% (life extension) of the CO2e cost of materials and production.
- Microsoft has set the target of reducing supply chain emissions by 30% by 2030.

6

Construction supply chain

In many cases the pressure for change is increasingly being driven through customers, designers, consultants and contractors across their supply chains as they are setting targets and providing incentives for their suppliers to reduce their carbon emissions from both their business operations and on projects.

Many of the longstanding construction industry incumbents in the UK and Ireland such as Mercury, Mace, Arup and Wilmott Dixon, have all set commitments to become carbon neutral well before the UK's 2050 date. One key element that is common to the majority of these plans is the importance of shared values and the pivotal role the supply chain will play in carbon measurement, reporting and reduction on a project. For contractors, it is not unusual for 90% of their carbon emissions to be contained within the supply chain: An increasingly important area of management and focus once 'business operation emission^{xix} reductions' have gained momentum.

In May 2021, fifty-eight contractors, consultants, manufacturers and developers operating in the UK signed up to the United Nation's 'Race to Zero' campaign. This pledge commits each firm to halving their emissions by 2030 and included many well known industry brands such as John Sisk & Son and Wills Bros Civil Engineering.^{xx}

7

War for talent – a responsible business perspective

An effective carbon reduction policy could help your company attract the best talent, as younger workers are increasingly likely to work for companies with a responsible business perspective. A 2019 survey conducted by Totaljobs in the UK found that 26% of British workers would be willing to take a pay cut in exchange for working for a business which acted responsibly in terms of the environment.^{xxi}

The same survey found that 28% would consider leaving their current position to join a more environmentally responsible company.^{xxii} Of this 28%, within the age range of 23-38 (a demographic which harbors a significant number of millennials), 50% would consider leaving their position for the same reason. This is especially pertinent as millennials will account for roughly 75% of the global workforce by 2025.^{xxiii} Businesses must adapt to this change. Companies that fail to act will also fail to attract and retain the best talent. Your company should not just have the ambition to change, the intention needs to be supported by action and demonstrable results. Public disclosure and the independent recognition of your goals, actions and progress are not only important to customers, but are important aspects of your employee value proposition.

Mace – ‘Steps without footprints’



Earlier this year, Mace announced that it had achieved carbon neutral status (with offsetting) in 2020. As well as this, the company achieved a 50% reduction in carbon emissions, a 75% renewable power procurement and a 75% reduction in business travel emissions. Mace also banned diesel generators and incentivised the use of cement alternatives.

Mace’s net zero carbon Strategy, ‘Steps without footprints’ details a set of defined targets to 2030 and highlights a methodology to achieve these targets. The priority areas for reduction of emissions include:

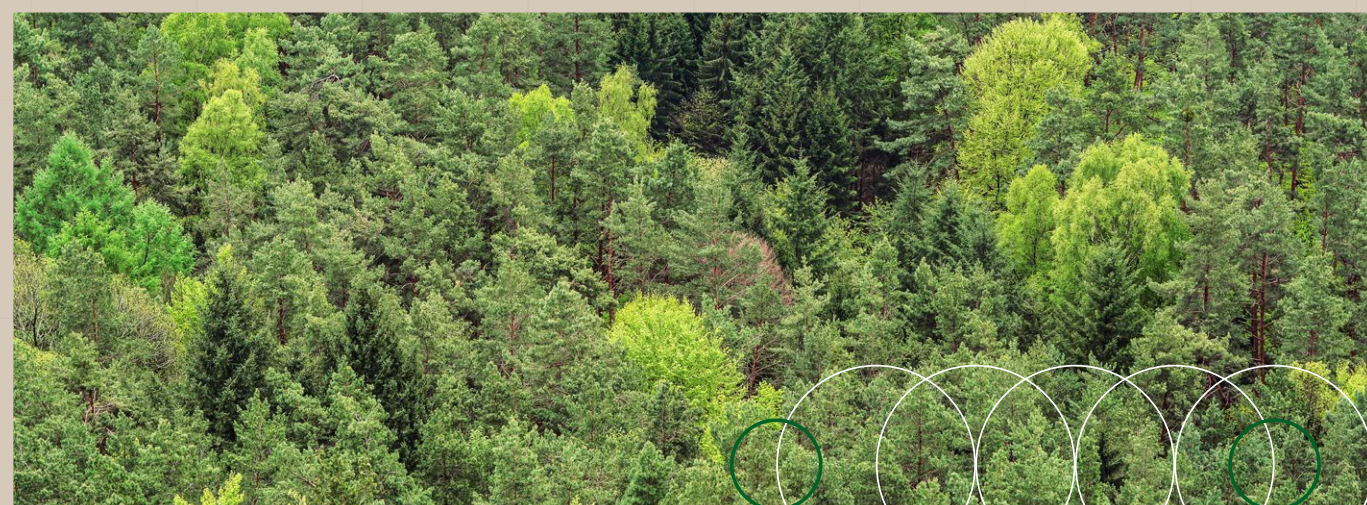
1. Energy use
2. Embodied carbon
3. Business travel
4. Water and waste

Mace has outlined four key ways to tackle these priority areas:

1. Reduce
2. Transform (business activity e.g. low carbon materials and fuels)
3. Investigate (e.g. R&D opportunities with partners)
4. Influence (suppliers, partners, clients and wider industry)



Isabel McAllister
Responsible Business Director



“Sustainability is also a priority for Mace people – seen in the increasing number of job applicants who ask about Mace carbon and social value plans, and evidenced in feedback from annual staff engagement surveys.”

Internal and external drivers

There were both external and internal priority drivers for Mace when the company set out its carbon strategy. In a comprehensive client survey in 2019 Mace found that most of its strategic clients - including companies like Heathrow, Facebook and British Land - were prioritising and implementing carbon reduction strategies.

“Sustainability is also a priority for Mace people – seen in the increasing number of job applicants who ask about Mace carbon and social value plans, and evidenced in feedback from annual staff engagement surveys”, said Isabel McAllister, Director of Responsible Business at Mace.

Internally, Mace’s people have been enthusiastic to adopt lower carbon practices. McAllister said that this enthusiasm is evident at all levels across the organisation. McAllister has said while younger people can be more curious

and have learned about carbon and sustainability at school or university, positive engagement is being seen throughout the organisation. The Mace board has also been extremely supportive of the company’s net zero carbon strategy and this support has been crucial to driving the programme forward according to McAllister.

Supply chain

Mace supply chain partners also play a critical role as the company works to reduce its carbon emissions. McAllister has stated that: *‘Low carbon procurement will be the next non-negotiable. We all need to stop using diesel and other fossil fuels and align ourselves with suppliers who actively want to evolve and innovate to support clients with low carbon ambition.’*

It is important for Mace’s supply chain to align with its carbon strategy. In fact, supplier members of the Mace Business School must have a net zero carbon strategy in place by end 2022.

Innovation

According to McAllister, collaboration is crucial as each company has its own specialty and can contribute expertise in different areas. Supply chain innovation will help ensure that lean manufacturing, MMC, new carbon-friendly materials and new ways of working can all contribute to the fight against climate change. Companies that can adapt and innovate to reduce emissions will hold a clear advantage when bidding for work with a large contractor like Mace.

Offsetting

Mace’s offset projects are provided by Carbon Footprint Ltd and include the decarbonisation of electricity grids through solar power and wind farms in India, providing support and equipment to remote communities in Africa to improve their energy efficiency, reducing deforestation in Brazil and supporting reforestation in the UK.



Industry leadership

There are many groups within construction that are working to decarbonise the sector. These groups provide resources and tools as well as opportunities to network and to promote your company's leadership in this area.

Some UK examples include:

UK Green Building Council

One of a network of Green Business Councils (GBCs), UKGBC supports the transformation of the industry by hosting events and publishing insight reports highlighting the benefits of sustainable practices as well as the ways that companies can implement these practices. As of January 2021, UKGBC has over 500 members from across the built environment. Its members include developers such as JLL, large contractors such as Skanska and clients such as HS2.

The Construction Leadership Council (CLC): CO2instruct Zero

The CLC is a government organisation established in 2013 to oversee implementation of 'Construction 2025: Industrial Strategy for Construction'. The Green Construction Board (GCB) is the sustainability workstream of the CLC. The GCB advises on the regulatory, policy and technical framework required to overcome key barriers to the delivery of a zero carbon and zero waste built environment. It also works to identify the commercial opportunities and new employment that a clean net zero economy requires.

Professional associations and trade bodies

The National Federation of Builders, ICE, ACE, RIBA, CIOB and many others are making significant contributions to industry leadership and the need for collective change alongside the development of practical information and tools that can be used by the industry.

Competitive advantage – cost reduction and enhanced reputation

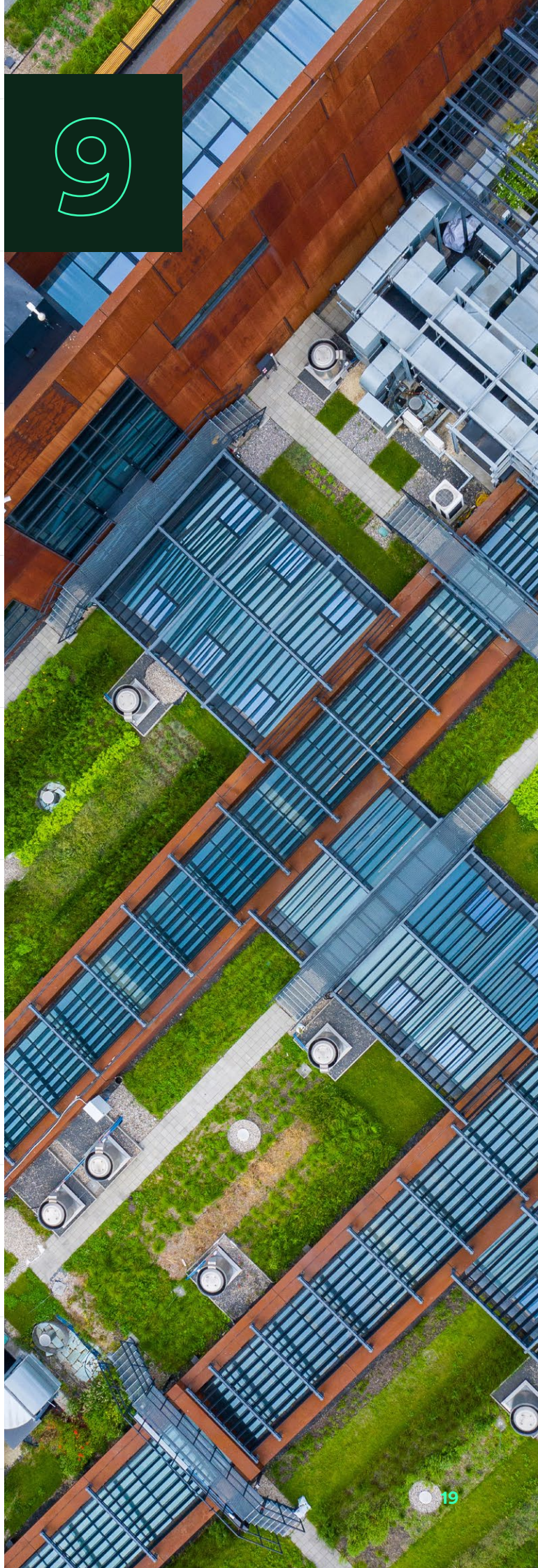
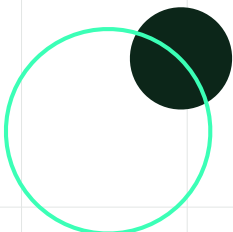
Reducing carbon emissions will not only lead to societal benefits: it also has the potential to present businesses with a distinct competitive advantage, as efficiencies derived from carbon reduction practices can lead to cost savings.

For example, in 2020 Arup released its net zero carbon strategy, which outlines how the company plans to reach net zero carbon emissions by 2030. In the document Arup states that a change in practices in certain areas, for example, cutting business travel and reducing purchase of goods and services could result in the company saving millions of pounds a year.^{xxiv}

Other companies have also seen similar improvements. According to Jonathan Ayton, Senior Sustainable Development Manager at Willmott Dixon *"The strategy of acting fast and pre-empting regulatory change has also driven innovation and good practice across the company and at a rate of change that we manage, that isn't dictated to us. In managing the rate of change in a measured and strategic way we can identify and capture cost savings as well as carbon savings."*

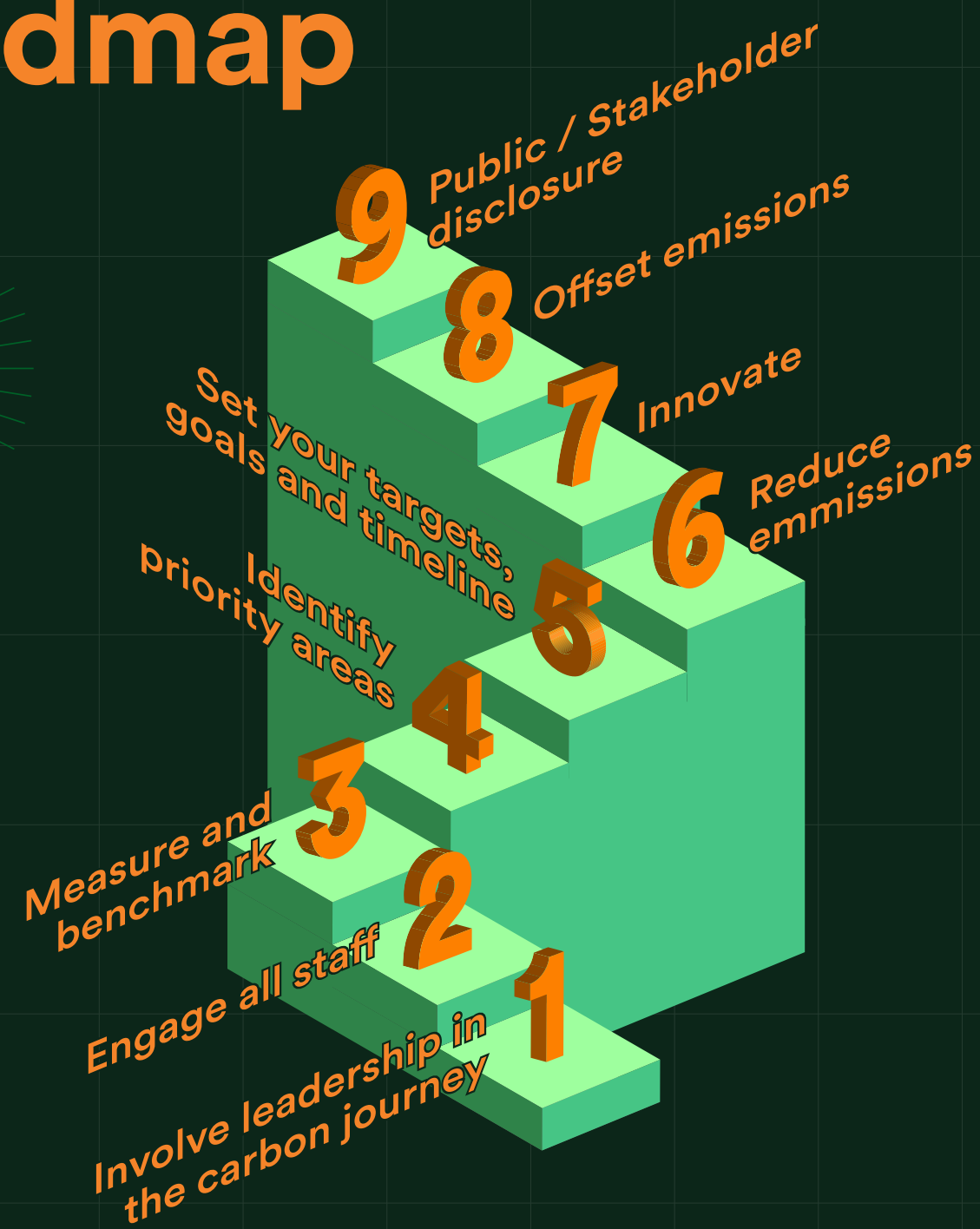
Ayton also highlighted the reputational benefits brought about by good carbon practice. According to Ayton *"There have been clear reputational benefits for the company as they have emerged as one of the leaders in the area... investors and clients are placing more and more emphasis on sustainability"*.

This reputational benefit has become clear to companies across the built environment. For example, British Land has recently reaped the benefits of their strong ESG performance when Royal Bank of Canada changed the company's stock rating from 'sell' to 'hold' *"based explicitly on their sustainability performance."*



SECTION TWO:

The 9 key steps of a net zero roadmap



Increasingly, companies targeting the UK market need to put in place the incentives, capabilities and credentials to prepare themselves for, and align with, the green growth agenda. The implications of not addressing emissions look set to contrast strongly with the priorities of the industry's stakeholders.

Nonetheless, achieving net zero carbon emissions is a long-term commitment and will require considerable challenge, stamina, and perseverance. The change cannot be achieved overnight but starting on and maintaining the journey will increasingly provide companies with a distinct advantage in the marketplace.

In consideration of the journey ahead, we've identified the key steps that every net zero emissions strategy should contain. How will your existing business functions and processes adapt and what are realistic timelines for you? In the majority of cases, each business will require external help and new tools to develop, execute and embed this change programme.

Mercury – 'Our Planet, Our Duty'



Like many other Irish companies who have already begun their decarbonisation journey, Mercury has significantly accelerated its journey to net zero over the past year.

In March 2020 Mercury signed the Business in the Community Ireland (BITCI) Low Carbon Pledge which commits a dedicated group of Ireland's leading companies to halving their Scope 1 and 2 greenhouse gas emissions by 2030. The company also signed an updated version of the pledge in 2021 which commits them to a setting science-based emission target by 2024. On the pledge, Jo-Ann Garbutt, Sustainability Director at Mercury said:

"We believe it's everyone's duty to protect our planet and our people, finding new ways to lessen our footprint and enhance the lives of future generations. Mercury is proud to be part of a group made up of sixty of Ireland's largest companies who are committed to sustainable change. We're determined to do our part and will focus the necessary resources needed on achieving our carbon-reduction goals. Sustainability starts from within and we're determined to lead by example."



Jo-Ann Garbutt
Director Sustainability



We believe it's everyone's duty to protect our planet and our people, finding new ways to lessen our footprint and enhance the lives of future generations. Mercury is proud to be part of a group made up of sixty of Ireland's largest companies who are committed to sustainable change.

Mercury incorporated these targets into its sustainability plan, 'Our Planet, Our Duty.' This plan outlines Mercury's commitment to sustainable practices. This plan was developed to deliver impacts in line with the United Nations Sustainable Development Goals, with each strategic platform within the plan addressing at least one of these goals. These platforms are:

1. Environment and climate change
2. People, wellbeing and safety
3. Technology and innovation
4. Operations and value chain
5. Society and community

As a large European engineering contractor, Mercury is aware of the impact its sector has on climate change and as with many sectors, it is experiencing both internal and external pressures to

tackle its emissions. Garbutt said that sustainability and carbon reduction had clearly become an important issue for Mercury's customers. Garbutt highlighted that if carbon reduction is a priority for our customers, then the Mercury team will do everything it can to assist its clients with their decarbonization objectives. Staff across Mercury have also been enthusiastic about sustainability and have been instrumental in implementing sustainable practices within the company. According to Garbutt, sustainability is now part of the way Mercury does business and not some tick-box issue.

In 2020, as part of its decarbonisation journey, Mercury also submitted its first climate change response to the Carbon Disclosure Project (CDP) using its 2019 carbon data. The report gives an overview of the company's Scope 1 and 2, and a number of key Scope 3 carbon

emissions areas, as well as outlining its climate change strategy. Garbutt stated that disclosing to CDP had helped in guiding Mercury along the path towards net zero.

While it has made rapid progress on its decarbonisation journey, Mercury has also encountered its fair share of challenges along the way. For example, while many employees are enthusiastic for change within the organisation, Garbutt highlighted a need for training to get staff up to speed on the technical details of carbon reduction activities undertaken within the company. She also highlighted a gap in the technology options currently available to lower the use of fossil fuels in power applications in line with the company's ambition. This leaves open opportunities to innovate which Mercury is currently exploring.

1

Involve leadership in the carbon journey

While change in the way a company deals with its carbon reduction must span across the entire organisation, the initial vision and rationale for change is initially set by senior management. Decision makers within the company's leadership team must define the vision and goals for sustainability and carbon reduction, as well as the associated timeline and milestones. It must be embedded into the company's strategy and operations alongside clear definition of roles and responsibilities.

Many companies implement new methods of governance to support the change programme, from the appointment of a sustainability manager within the senior management team through to the origination of separate teams or committees for oversight and implementation. These teams should be strongly supported by leadership and may consist of a cross section of employees from different departments leading to a more effective implementation of actions.

Increasingly, net zero strategy performance at a company level is being linked to targets and reward at an employee level with the executive team's remuneration closely linked to progress with their carbon reduction programmes.

2

Engage all staff

While change within a business will likely start from the top, staff will be responsible for implementing this change in the day to day operations of the company. For change to be implemented effectively, it's essential that staff understand (through training and education) the importance of carbon reduction and for them to be aware of the company's carbon goals and targets and their individual contribution. Often, new processes and/or technologies will need to be implemented in the measurement and benchmarking of carbon tracking.

Carbon reduction can seem like an immense task and much of the language used can be complex. This complexity could make the topic seem inaccessible and drive stakeholders away from the issue at hand. However, it should be noted that neither staff nor the leadership team are expected to be experts in the area, and such an expert understanding is not necessary to start on the journey and to make a difference in the company's plans. A basic understanding among staff will go a long way in making a difference in your company's operations. Access to expert advice and training supports can be accessed under Enterprise Ireland's Climate Enterprise Action Fund.

There are also many resources that can give staff a greater understanding of these issues. For example, The Supply Chain Sustainability School provides free training in topics such as energy and carbon, environmental management, sustainable procurement and waste and resource efficiency. The Sustainable Energy Authority of Ireland (SEAI) also provides training to staff through its free online 'Energy Academy'. According to the SEAI this academy will 'upskill your staff on energy efficiency and what they can do to help your organisation meet its energy efficiency goals'.



Measure and benchmark

Your company should measure and determine its current carbon footprint. There are a number of methods that can be used to account for business-related emissions: businesses can measure the overall emissions arising from their activities, or they can calculate the emissions associated with the life cycle of their product or service. Doing so will show not only how much change is needed within the business, but also specify the carbon hotspots that have most impact.

The Greenhouse Gas (GHG) Protocol^{xxv} provides businesses with a framework for calculating and reporting on their emissions across their operations and value chains. It differentiates between direct and indirect emissions, categorising them into three scopes depending on the emission source.

The three categories are Scope 1, Scope 2 and Scope 3 emissions.

Scope 1

- Scope 1 emissions are all direct emissions that come from sources owned by your organisation. For example, these can be emissions from company-owned cars which are being used by employees.
- Scope 1 emissions are in the direct control of the building or business owner, e.g. starting the company owned car and taking it on a journey will have the direct results of carbon being emitted during the course of that journey.

Scope 2

- Scope 2 emissions are indirect emissions that are released from the generation of purchased energy from another source. For example, emissions released by your energy provider when you purchase heat or electricity are Scope 2 emissions.
- These emissions are farther down the chain. For example, turning on a light in a building will not directly result in carbon emissions. However, the need to light a building, and the ensuing purchase of that power from an energy provider indirectly causes carbon emissions at the root – the generation point of that electricity (the electricity power plant).

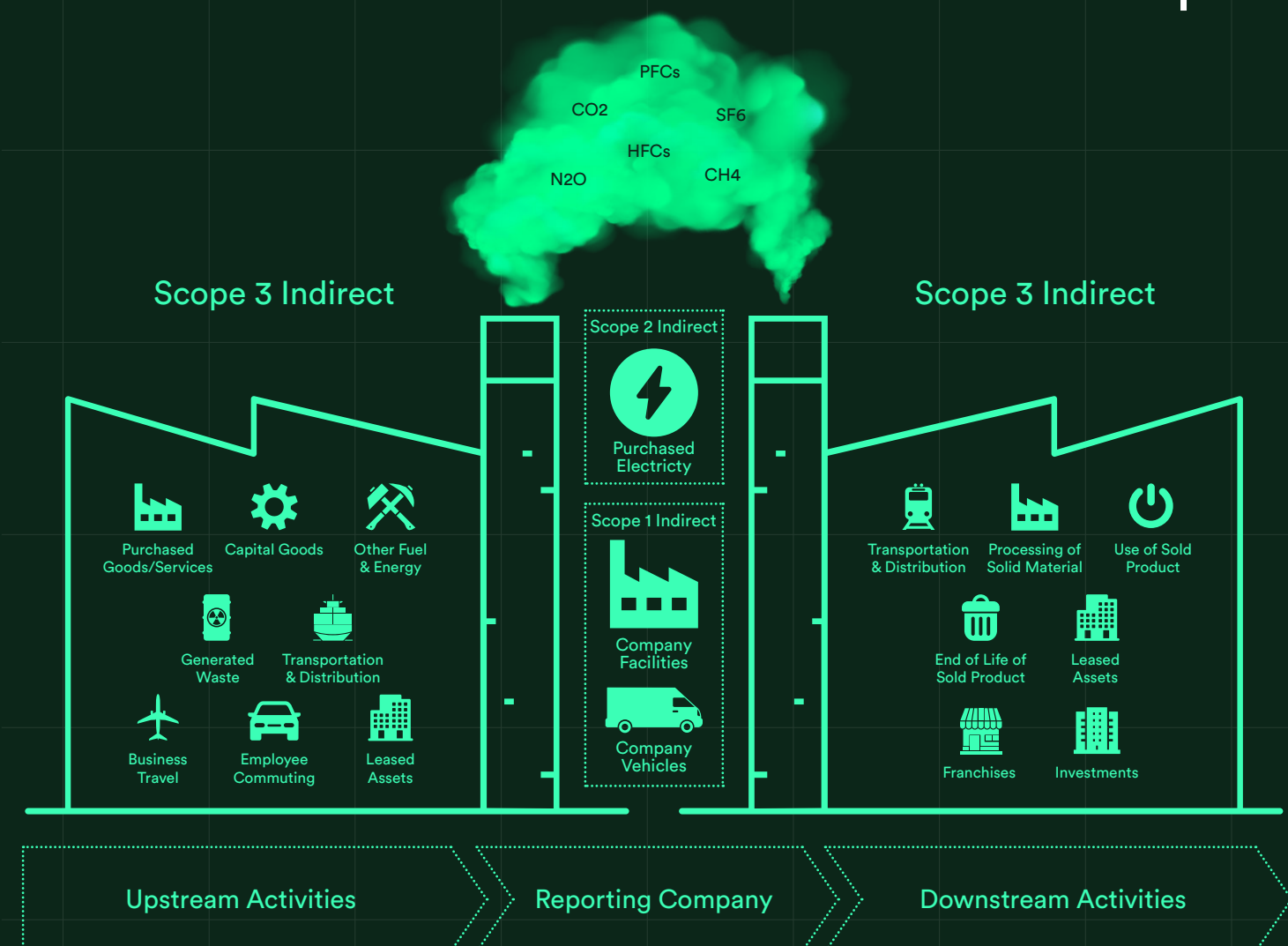
Scope 3

- Scope 3 emissions are all indirect emissions related to the company's value chain. These emissions come from activities or assets that are not controlled or owned by your company. Examples include employees commuting to work or emissions caused during the activities of companies which form part of the supply chain.

Your company should examine each scope to get a holistic evaluation of your current position. This will help you identify your priority areas in the next step of the plan.

It's important that each company uses the right tool^{xxvi} to measure carbon emissions, as not all tools are suited for all tasks or company type and size. Accuracy and consistency of your data will form an important foundation for the strategy. The collection of 'good' data will lead to easier collaboration, sharing and increased efficiency. It will also allow your business to identify and address existing and emerging carbon hotspots throughout the project. Databases on carbon levels for products, materials and building elements can be found the resources section of this report.

Scopes 1, 2 and 3



Source: Clearstream Solutions

READY FOR
A GREEN
FUTURE



Identify the priority areas for carbon reduction

After measuring data across the company’s operations, you should have a better idea of which areas of your business are emitting the most carbon or where your ‘carbon hotspots’ are. You should then also have a deeper look at the operations, key suppliers and the priorities of the business to identify areas where changes can most easily and efficiently be made to minimise and reduce carbon emissions, without increasing cost too much or causing disruption to your operations.

Analysing both of these areas will help your company to make informed decisions about what your priority areas are for carbon reduction within the business. This will help you in the next step when setting out realistic goals and targets as you will have identified the areas where wins can be made, helping you to formulate a plan. The plan could also include other areas for priority action such as biodiversity, water usage, forestry and consideration of how the circular economy^{xxvii} could apply to your business.

4



5

Set your targets, goals and timeline

After making climate change a priority within the company, the next step is to identify areas within the business where reductions in emissions can be made and to set targets in these areas. Having targets will also save operating costs as the organisation reduces resource use e.g. energy, water or materials. In addition, it is a visible demonstration of your values as a responsible business and presents further opportunity to market additional value to stakeholders and customers.

It is important that targets are not only realistic but also ambitious. Many companies are taking action faster than the UK government’s 2050 net zero pledge, and it is important that goals are backed by evidence, clear actions and monitoring against milestones.

The Science Based Targets Initiative is a partnership between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI) and the World Wide Fund for Nature (WWF) which helps companies to set and communicate targets to reduce emissions in line with the Paris Climate agreement. Setting a target with the SBTi will help guide your company in setting out its climate action plan.

Setting big, bold, ambitious targets can also unlock the potential for innovation within an organisation. There are now numerous companies that have set stretching sustainability goals, delivering these alongside substantial cost savings, product improvements and increased market share. The long-term nature of science-based targets provides a clear direction of travel and can offer insight into important market trends that will be shaped by the low carbon transition. This clarity can shift the focus of a business towards the development of innovative solutions and new opportunities.^{xxxii}

Quote from Hugh Jones, Managing Director, Advisory, The Carbon Trust

'A Better Way: Our net zero carbon strategy'

ARUP

Arup's strategy 'A Better Way: Our net zero carbon strategy' sets out the target of achieving net zero emissions across the company's operations by 2030. Arup also aims for a 30% reduction in Scope 1, 2 and 3 emissions by 2025 (from a 2018 baseline).

When setting out priority areas and a strategy to 2030, Dr Matt Kennedy reinforces the importance of measuring your business's carbon baseline and then understanding what value your business places on each specific area of carbon usage. Arup has set out four priority areas in the plan: Purchasing, Energy, Travel and Waste. Key actions to reduce emissions include:

- 1) Reduce purchases such as catering, stationery and events by 50%, which will cut emissions by 4%. (Purchasing accounts for 63% of the baseline emissions.)
- 2) Reduce business travel by 50%: this will account for a 10% reduction in emissions. (Travel accounts for 30% of Arup's 2018 baseline. The first step is to reduce travel and then to choose active or low carbon transport options when travel cannot be avoided.)
- 3) Use only electric cars for business travel as far as practically possible, equating to 1.5% of the 2025 emissions reduction target.
- 4) Implement flexible working, which will contribute to a planned 20% cut in commuting emissions. This equates to 2% of the 2025 emissions reduction target.
- 5) Aim to procure electricity in offices from 100% renewable sources by 2023. Energy accounts for 7% of Arup's 2018 baseline emissions. Arup also aims to only occupy buildings with high sustainability ratings.



Dr Matt Kennedy
Associate Director, Carbon and Climate



Climate action is embedded across the business at Arup. Each of our strategic priorities are linked to the UNSDGs, connecting climate and sustainability at the heart of what we do. For example, there are checks in place when bidding on work to ensure that projects align with the SDGs and their strategic priorities.

Significant drivers

Regulatory drivers are present across many of the markets in which the company operates. For example, Ireland has enshrined a 2050 net zero carbon emissions target into law, meaning a 51% reduction between 2021 and 2030. There has also been active growth in demand from Arup's clients as they have sought the best advice, support and credentials for their low carbon projects. Arup also experienced internal drivers as employees pressed for change. Kennedy stated *"There was a clear and consistent message that employees wanted to progress our policy of net zero from a responsible business perspective"*.

Collaboration

Kennedy stressed the need for internal buy-in within organisations to push the carbon agenda forward. Multiple mechanisms are being implemented across the company, globally, from setting up steering groups and staff-led committees, to delegating sustainability-related responsibilities to existing roles and putting in place implementation mechanisms to embed sustainability across projects. This also needs to be backed by staff who have the necessary skills. Collaboration and sharing are key to success. Every company should examine the skills that may be necessary on this carbon journey and work to upskill staff. Arup is upskilling staff through the Arup University training platform.

Benefits of the decarbonisation journey

Arup has reaped a number of benefits as it progresses through its carbon journey, including cost savings. The company estimates that *'cost savings associated with meeting the targets, particularly cutting business travel and reducing our purchase of goods and services, could save millions of pounds a year'*. These savings will support the costs of investment in initiatives to tackle the more difficult areas of the decarbonisation journey.

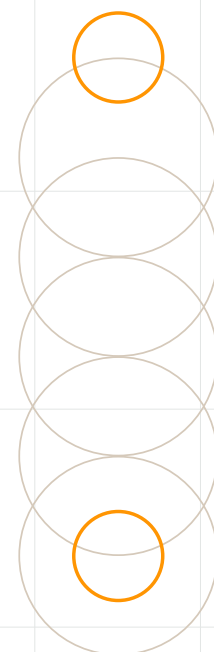
6

Reduce emissions

After your business sets these clear, realistic and measurable targets, the company should outline its tactics and actions for reaching them.

These actions should be aligned to the company's targets and KPIs. Beyond reductions in Scope 1 and 2 emissions, tackling embodied carbon in the supply chain will require companies to work closely with their suppliers and likely require deeper alignment of information systems.

Your company should take into account the data already collected as well as input from across the organisation at all levels to formulate an ambitious yet realistic plan of how to achieve your targets.



Innovate

There is a lot of uncertainty in considering your own roadmap to net zero emissions as technological, financial and regulatory factors are changing swiftly. Actively seek to deepen your understanding and awareness of where you'll need to innovate. Many of the barriers to achieving net zero carbon are shared by other companies and across other sectors. Reducing embodied carbon in materials, supply chain communication, tracking technology and opportunities in the circular economy will each require a collaborative approach to innovating. Sharing the, time, cost and the benefit of developing new solutions will be an important element for the successful decarbonisation of the construction supply chain.

A key consideration for international businesses operating in multiple countries may be the variances in renewable energy provision, supply chain choice and electric vehicle infrastructure across jurisdictions: these issues could impact the path to net zero for the organisation as a whole.

7

Offset

While your company advances along its journey to net zero, it will still be emitting harmful emissions. Offsetting can be carried out to compensate for the carbon which your company emits en route to net zero.

Carbon offsetting^{xxviii} refers to the funding of activity to compensate for carbon dioxide or other greenhouse gas emissions.

Offsetting also has the benefit of funding solutions to climate change that are outside of your company's day to day operations. Examples of these solutions include:

- projects which introduce biodiversity and preserve critical eco systems,
- projects which provide renewable energy solutions to remove the need for fossil fuels to provide power or on projects which mitigate deforestation.

Carbon offsetting reduces emissions faster than if your company were to rely on reduction alone, as you are compensating for the emissions caused by your business, even as you move through the process of your journey to carbon reduction. For example, if a company reduces its emissions by 20% in year 1 of its plan, it is still offsetting a large majority of its original carbon emissions. However, if the company offsets some of the remaining emissions, they can reduce their footprint even further through the purchase of carbon credits.^{xxix}

While offsetting compensates for harmful emissions that your company is reducing, it should not be viewed as a substitute



for reducing these emissions. Offsetting should be carried out while your company continues to reduce emissions to the point where offsetting is either no longer necessary or is kept to a minimum.

It is important to note that certain leading verification programmes do not take offsetting into account. For example, if your company has a target which involves offsetting, CDP will only consider the proportion of the target attributed to emissions reduction and not to offsetting.^{xxx} The SBTi takes a similar stance as it requires that companies only set targets based on emission reductions through direct action within its own operations and/or value chains. While offsets are an option which can finance further options for reduction, these are

not included in Science Based Targets.^{xxxi}

Verification and certification of offset projects is key, to ensure that the offset project being financed delivers real benefits. There are two main certification mechanisms in the UK: Gold Standard and Verified Carbon Standard (VCS).

The Quality Assurance Standard (QAS) is a comprehensive independent audit system to check the validity of your offsetting projects. QAS-approved products are checked against a 40 point checklist to ensure they meet the highest standards for carbon offsetting.

Public / Stakeholder disclosure

Finally, your company should consider publicly disclosing and sharing the bonafide progress that you have made on your carbon journey as it progresses along these steps. This will make your team, stakeholders and the market aware of your achievements and of your commitment to carbon reduction and will act as a strong motivator along the journey. Communicating your progress will also demonstrate wider industry leadership and encourage others to follow your lead in changing business practices to tackle climate change.

Your company should share information such as your current emissions levels, your plan and goals going forward and your achievements to date. This will also keep your customers and supply chain partners informed of your progress, putting you in a better position to meet their needs as the construction supply chain decarbonises. It is important to note that it is an ever-increasing requirement to share your carbon emission and embodied carbon levels with your clients.

As well as reporting frameworks, other mechanisms for disclosing performance could include external certifications such as LEED or BREEAM, supply chain platforms including Ecovadis or SEDEX, and sustainable awards.



The CDP (Carbon Disclosure Project)

One of the most effective ways to communicate your progress is by reporting to the CDP (Carbon Disclosure Project). As discussed earlier in this report, many of your key stakeholders, such as investors or clients will be interested in your company's progress in its carbon journey and its current level of carbon emissions. The CDP is an international organisation which helps companies to disclose their environmental impact, including data on carbon emissions. Companies self-report their data through CDP online. The organisation provides support and resource materials to help guide your company when reporting on emissions. Companies' submissions to the CDP are then assessed, scored and then published for transparency and benchmarking.

There are a number of benefits to disclosing your carbon output through CDP

1. You can track your company's progress through your carbon journey and compare it to other companies in the sector / market
2. You can improve your company's reputation through transparency and visible progress in the fight against climate change
3. Your company will be able to identify new areas of opportunity through the data, that you otherwise may not have noticed.
4. According to the CDP website, submitting data will also boost your company's competitive advantage as it will 'gain a competitive edge when it comes to performance on the stock market, access to capital and winning tenders'

In Ireland over 250 companies report their emissions to the CDP. The CDP Ireland network represents the organisation in Ireland. The network is free to join and provides advice, technical and administrative support to responders as well as a liaison point with CDP Global.

Willmott Dixon – 'Now or Never: our decisive decade'



Willmott Dixon has been setting a high standard for decarbonisation in the construction industry over the last ten years. In 2012 the company became carbon neutral for the first time with the use of responsible offsetting and in 2020 it launched its sustainability strategy 'Now or Never: our decisive decade.' The strategy took two years to develop and details Willmott Dixon's ambition to reduce operational emissions to zero so that offsetting is no longer needed.

Some of the company's targets are listed below:

- All sites will be fossil fuel free
- Reduce site cabin electricity use by 65%
- Reduce absolute mileage by 65% and have an 100% electric fleet
- Demonstrate leadership position with transparent carbon emissions reporting
- All offices will be zero-carbon in operation
- Generate renewable electricity for use



Jonathan Ayton

Senior Sustainable
Development Manager

“Firstly, there have been clear reputational benefits for the company as they have emerged as one of the leaders in the area; investors and clients are placing more and more emphasis on sustainability.”

Supply chain

Willmott Dixon's supply chain accounts for a large part of its carbon emissions. In fact, when the company carried out analysis to identify carbon hotspots, it found that its supply chain accounted for 99% of its emissions. It is clear that the supply chain will have an important role to play in helping the company to achieve this goal. The company has set the target of having a net zero supply chain by 2040. This means that all supply chain companies will achieve net zero operational carbon by 2040.

Willmott Dixon is also on a journey to help its supply chain partners decarbonise in line with this target and, as a founding partner of the Supply Chain Sustainability School, was involved in the development of a tool that all the school's members can use to calculate their carbon footprint.

Willmott Dixon is one of three companies globally to achieve Level 3 of the Carbon Trust's industry leading Supply Chain Standard. This demonstrates that it is measuring, managing and reducing carbon emissions from its supply chain. Achieving Level 3 builds on six years of work, with Willmott Dixon achieving Level 1 of the Standard in 2015.

Leadership

According to Jonathan Ayton, Willmott Dixon's successful and ambitious carbon reduction strategy can be attributed to the support that sustainability has received from within the organisation. Willmott Dixon's board fully support the company's net zero ambitions and the group sustainability team. This team reports directly into the CEO and works with the board as well as committees and working groups, to augment existing operational teams across the company, acting almost as an internal consultancy.

Disclosure

Willmott Dixon sustainability performance is verified by Bureau Veritas UK and then disclosed in its annual report and accounts, verifying the company's performance against its sustainability KPIs. The organisation also publishes sustainability reviews on its website, highlighting the company's progress on its decarbonisation journey to date. Public disclosure has allowed Willmott Dixon to be transparent to the public and its stakeholders and it has also driven good practice as the company is held accountable for its sustainability performance.

Competitive advantage

Willmott Dixon's strategy has always been to pre-empt government policy and regulation rather than wait for the change and Ayton highlighted some of the benefits of this strategy. *"Firstly, there have been clear reputational benefits for the company as they have emerged as one of the leaders in the area; investors and clients are placing more and more emphasis on sustainability."* The strategy of acting fast and pre-empting regulatory movement has also driven innovation and good practice across the company. Ayton said: *"In managing change in a proactive, measured, and strategic way we can identify and realise cost benefits as well as the carbon savings."*



SECTION THREE:

Next Steps

A key objective of this report has been to spark your own vision to get to the start line of a net zero carbon journey and to develop your ambition and engagement.

In April 2021 Enterprise Ireland CEO Julie Sinnamon stated:

“Supporting Irish companies to reduce their carbon footprint and capitalise on opportunities emerging from the low-carbon transition is a key strategic priority for Enterprise Ireland. As Irish businesses continue to adapt to the evolving Covid-19 pandemic and prepare for getting back on the road to recovery, we need to also build resilience and ensure Irish companies have the capabilities in place to meet the challenges of climate change.

Enterprise Ireland is committed to helping their clients to reduce carbon emissions and has developed three funding mechanisms in support of Climate Action. Green Start, Green Plus and the Climate Action Voucher.

Climate Enterprise Action Fund

On April 15 2021, Tánaiste, Leo Varadkar and Minister for the Environment, Climate and Communications, Eamon Ryan, launched Enterprise Ireland’s Climate Action Fund with an initial allocation of €10 million. This fund is aligned with the Irish government’s target of achieving net zero carbon emissions by 2050. When launching the fund Leo Varadkar stated:

“The enterprise sector accounts for just over 13pc of the economy’s total emissions, so all businesses will have a part to play in achieving the 7pc per year, on average, emissions reduction that the Government has committed to over the next decade.

The Climate Action Fund aims to help companies across Ireland adopt more sustainable practices through measuring and reducing their carbon footprint.

The range of financial supports reflect the needs of companies at different stages of their decarbonisation and sustainability journey.



Green Start -

GreenStart - Enterprise Ireland

Specifically targeted to Enterprise Ireland clients, the aim of the GreenStart assignment is to improve environmental performance through greater resource efficiency, helping companies achieve competitive advantage and greater market share through enhanced credentials and cost savings. Projects may vary in scope from implementing a structured environmental management and reporting system to understanding the carbon or environmental footprint of products or services.

GreenPlus -

GreenPlus - Enterprise Ireland

A GreenPlus project is a medium-scale training project facilitated/ supported by an external environmental expert. The aim of the project shall be to develop a high level of environmental management capabilities, drive environmental efficiencies and achieve improved sustainability by establishing and embedding continuous improvement systems and behaviours. This will increase the agility and resilience of client companies to climate change impacts.

Eligible activities include developing a comprehensive climate change and sustainability plan and aligning to international standards and frameworks.

Climate Action Voucher -

Climate Action Voucher - Enterprise Ireland

The voucher covers either technical or advisory services related to the operations of the business from an approved service provider up to a value of €1,800. A maximum daily rate of €900 per day shall apply. It is expected that the support would be provided over a relatively short period but can be spread out over a maximum of six weeks.

Eligible projects must include one or more of the following activities:

- Resource efficiency assessment
- Renewable energy potential
- Introduction to corporate sustainability
- Introduction to circular economy thinking

Conclusion

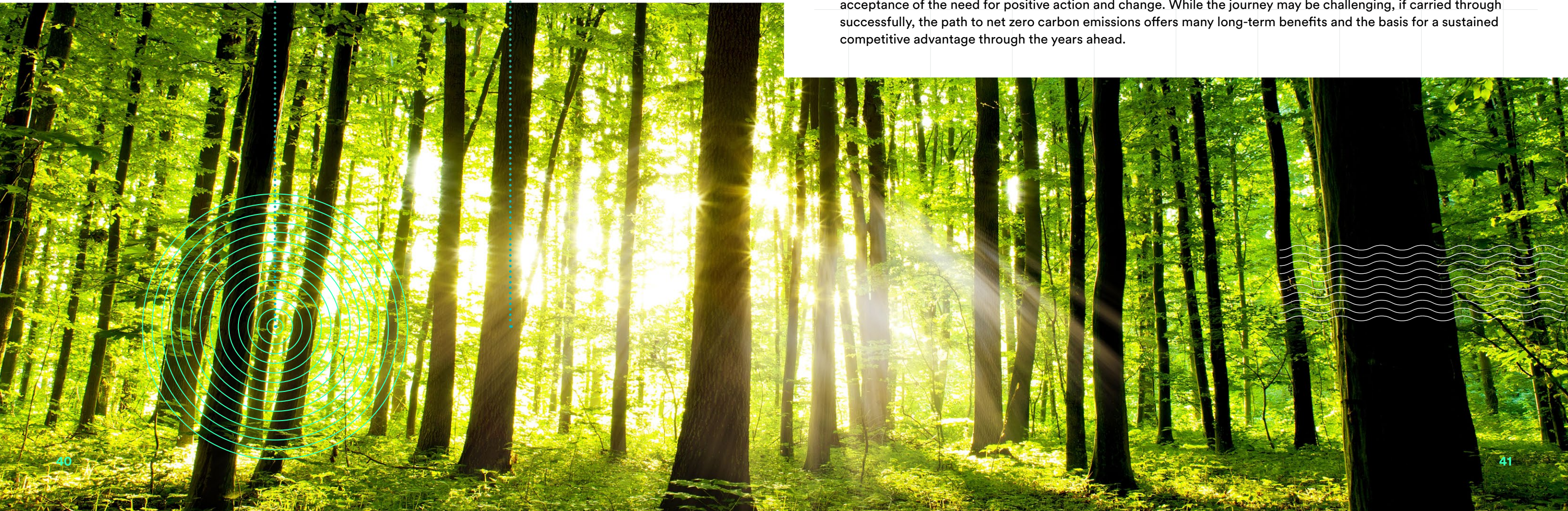
In 2019, the UK government declared a climate change emergency with the imposition of legally binding targets for carbon reduction that were further tightened in 2021. net zero carbon credentials are no longer a 'nice to have', but instead are a rapidly emerging requirement for many companies operating in the UK. With new laws, regulations and targets incentivising behaviors these requirements are only set to gain momentum and the construction sector is no exception to this shift. The built environment accounts for around 40% of all emissions globally and while the industry has traditionally been slow to adopt sustainable practices voluntarily, change is now being comprehensively driven across the sector.

The public sector has also set out its plan to prioritise greener, less carbon intensive practices on projects as highlighted in the 'Green Book (2020)', the *National Infrastructure Strategy* and through new value driven procurement processes as identified in the *Construction Playbook*. We anticipate further guidance and details of further interventions in the BEIS sector strategies and in HM Treasury's financial roadmap which is due to be published in November 2021.

In the private sector, many investors, clients and contractors are also embedding science-based climate change targets into their operations. In many cases, these targets include dates by which they expect their supply chain to be net zero. Companies that fail to adapt to the 'green wave' stand to fall behind.

The road to net zero can seem complex and will differ greatly between small and large, manufacturing, or services, local or global companies. Enterprise Ireland recognises that, for many businesses, external support will be required to begin and build momentum on this journey. Ideally, this will include sector specific expertise that can take you through the steps and stages of decarbonisation, the technology solutions that can aid you on this journey, and the various known and unknown challenges.

The 9-step roadmap outlined in this report is intended to act as a guide for any company in the industry to consider the steps that might apply to their journey. Each stage will require commitment, openness and acceptance of the need for positive action and change. While the journey may be challenging, if carried through successfully, the path to net zero carbon emissions offers many long-term benefits and the basis for a sustained competitive advantage through the years ahead.



Endnotes

i Embodied Carbon (or A1 to A5) Refers to embodied carbon in the construction materials and process. A1-A3 refers to The Product Stage, the sourcing of materials, transport to manufacturing plant and fabrication processes. A4-A5 refers to The Construction Stage, the transport from plan to site and on-site construction and installation including waste disposal. For further information, see the RICS guidance ‘Whole life carbon assessment for the built environment’, 1st ed, Nov 2017

ii Roger Harrabin, 2021, “Climate change: UK to speed up target to cut carbon emissions”, *BBC News*, (accessed 23/05/2021), <<https://www.bbc.com/news/uk-politics-56807520>>

iii <https://www.worldgbc.org/news-media/WorldGBC-embodied-carbon-report-published> (accessed 01/06/21)

iv Gideon Skinner, 2019, “Concern about climate change reaches record levels with half now ‘very concerned’”, *Ipsos MORI*, (accessed 23/05/2021)

v <https://www.un.org/en/climatechange/paris-agreement> (accessed 23/05/2021)

vi <https://www.gov.uk/government/news/uk-becomes-first-major-economy-to-pass-net-zero-emissions-law> (accessed 23/05/2021)

vii <https://www.gileswatling.co.uk/news/plan-green-industrial-revolution> (accessed 23/05/2021)

viii Microsoft Word - PPN 0621 Taking account of Carbon Reduction Plans.docx (publishing.service.gov.uk)

ix [Achieving net zero - National Audit Office \(NAO\) Report](#) (accessed 21/05/2021)

x [National TOMs - Social Value Portal](#)

xi [HOME - UN Climate Change Conference \(COP26\) at the SEC – Glasgow 2021](#) (ukcop26.org) (accessed 21/05/2021)

xii [Investor group makes net-zero carbon pledge to tackle climate crisis | Investing | The Guardian](#) (accessed 07/05/2021)

xiii Huw Jones, 2021, “UK proposes requiring businesses to disclose climate risks by 2022”, *Reuters*, (accessed 23/05/2021), <<https://www.reuters.com/world/uk/uk-proposes-requiring-businesses-disclose-climate-risks-by-2022-2021-03-24/>>

xiv Water UK, 2021. Net Zero 2030 Routemap. (Accessed 23 May 2021), <<https://www.water.org.uk/routemap2030/wp-content/uploads/2020/11/Water-UK-Net-Zero-2030-Routemap.pdf>>

xv Facebook, 2021. Renewable Energy 2020 Report. (Accessed 23 May 2021) <https://sustainability.fb.com/wp-content/uploads/2021/04/Facebook_RenewableEnergy_April2021.pdf>

xvi <https://www.apple.com/uk/newsroom/2020/07/apple-commits-to-be-100-percent-carbon-neutral-for-its-supply-chain-and-products-by-2030/> (accessed, 23/05/21)

xvii <https://www.salesforce.com/news/stories/salesforce-urges-suppliers-to-reduce-carbon-emissions-adds-climate-to-contracts/> (accessed, 23/05/2021)

xviii Brad Smith, 2020, “Microsoft will be carbon negative by 2030”, *Microsoft*, (accessed 23/05/2021), <<https://blogs.microsoft.com/blog/2020/01/16/microsoft-will-be-carbon-negative-by-2030/>>

xix In this context, business operation emissions are typically the scope 1 and scope 2 emissions referred to and described in image 7 of this report.

xx Construction firms vaunted for trail-blazing race to net zero | Construction Enquirer News (accessed 10/05/’21)

xxi Joshua Murray Neville, 2019, “A quarter of UK workers would take a significant pay cut to work in a ‘planet-saving’ job”, *Totaljobs*, (accessed 23/05/2021), <https://www.totaljobs.com/media-centre/a-quarter-of-uk-workers-would-take-a-significant-pay-cut-to-work-in-a-planet-saving-job>

xxii Ibid.

xxiii Deloitte, 2014. The Deloitte Millennial Survey, (accessed 23 May 2021) <<https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-dttl-2014-millennial-survey-report.pdf>>

xxiv Arup, 2020, A Better Way: Our Net zero Carbon Strategy, (accessed 23 May 2021), <<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwi3oOKrrvnwAhXTSBUiHQ3FBocQFjAAegQIAxAD&url=https%3A%2F%2Fwww.arup.com%2F-%2Fmedia%2Farup%2Ffiles%2Fpublications%2Fa%2Fa-better-way-our-net-zero-carbon-strategy.pdf&usg=AOvVaw0Bp8gcRI8rtKTt8XTIem3s>>

xxv Calculation Tools | Greenhouse Gas Protocol (ghgprotocol.org) (accessed 03/05/2021)

xxvi Leading carbon management tools could include Tracker +, Smartwaste, Sustrax

xxvii <https://www.ellenmacarthurfoundation.org/circular-economy/what-is-the-circular-economy> (accessed 02/06/2021)

xxviii Offsets are typically a mitigation offset (avoiding additional carbon being generated) or a removal offset (absorbing carbon from the atmosphere) – Source – Clearstream, McGann.C 2021

xxix Carbon credits can also be generated by taking an action that prevents the emission of CO2 in the first place – through what is called avoidance. In the UK, an example of natural emissions avoidance is the restoration of peatlands, which release large volumes of greenhouse gases when they are in a degraded state. Carbon Credits and Offsetting - Forest Carbon <https://www.forestcarbon.co.uk>

xxx <https://guidance.cdp.net/en/guidance?cid=13&ctype=theme&idtype=Themed&incchild=1µsite=0&otype=Guidance&page=1&tags=TAG-646,TAG-605,TAG-600> (accessed 02/06/2021)

xxxi Science Based Targets, 2021. SBTi Criteria and Recommendations. (accessed 2 June 2021), <<https://sciencebasedtargets.org/resources/files/SBTi-criteria.pdf>>

xxxii Hugh Jones, 2018. “Why should a company set a science-based target?”, *The Carbon Trust*, (accessed 23/05/2021), <https://www.carbontrust.com/es/node/87>

References/Resources

The report was researched and written in Quarters 1 and 2, 2021, using desk research methodologies, interview and drawing on numerous sources of publicly available information, as well as sources available to EI clients from the Market Research Centre at Enterprise Ireland, including:

- [Concern about climate change reaches record levels with half now ‘very concerned’ | Ipsos Mori](#)
- [Plan for Green Industrial Revolution](#)
- [BlackRock Client Letter | BlackRock](#)
- Leading investors representing \$11 trillion call on banks to set enhanced net zero targets – IIGCC
- [Transforming Construction: Delivering a Low Carbon Future A Handbook for Main Contractors | National Federation of Builders](#)
- [Microsoft’s Commitment to Carbon Negative by 2030 | Clearstream Solutions](#)
- Clearstream Solutions
- Climate change: UK to speed up target to cut carbon emissions | BBC News
- The building and construction sector can reach net zero carbon emissions by 2050 | World GBC
- Concern about climate change reaches record levels with half now ‘very concerned’ | Ipsos MORI
- [The Paris Agreement | United Nations](#)
- [UK becomes first major economy to pass net zero emissions law | Gov.uk](#)
- [Plan for Green Industrial Revolution | Giles Waiting MP Website](#)
- [Achieving net zero | National Audit Office](#)
- [National TOMs | Social Value Portal](#)
- COP26
- [UK proposes requiring businesses to disclose climate risks by 2022 | Reuters](#)
- [net zero 2030 Routemap | Water UK](#)
- [Apple commits to be 100 percent carbon neutral for its supply chain and products by 2030 | Apple](#)
- [Renewable Energy Report | Facebook](#)
- [Salesforce Urges Suppliers to Reduce Carbon Emissions, Adds Climate to Contracts | Salesforce](#)
- [Microsoft will be carbon negative by 2030 | Microsoft](#)
- [Construction firms vaunted for trail-blazing race to net zero | Construction Enquirer News](#)
- [A quarter of UK workers would take a significant pay cut to work in a ‘planet-saving’ job | Totaljobs](#)
- [The Deloitte Millennial Survey | Deloitte](#)
- [A Better Way: Our net zero Carbon Strategy | Arup](#)
- [What is Circular Economy | Ellen MacArthur Foundation](#)
- [Why should a company set a science-based target? | The Carbon Trust](#)
- [Why Disclose as a Company? | CDP](#)
- [CDP Climate Change 2020 Reporting Guidance | CDP](#)
- [SBTi Criteria and Recommendations | Science Based Targets](#)

Image Sources

- 1 UK enshrines new target in law to slash emissions by 78% by 2035 - GOV.UK (www.gov.uk)
- 2 Concern about climate change reaches record levels with half now ‘very concerned’ | Ipsos Mori
- 3 Plan for Green Industrial Revolution
- 4 BlackRock Client Letter | BlackRock
- 5 Transforming Construction: Delivering a Low Carbon Future A Handbook for Main Contractors | National Federation of Builders
- 6 Microsoft’s Commitment to Carbon Negative by 2030 | Clearstream Solutions
- 7 Clearstream Solutions
- 8 Why Disclose as a Company? | CDP

Organisations

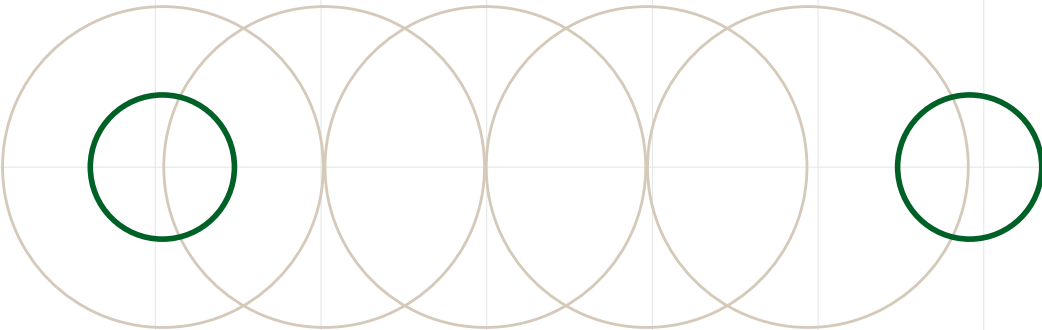
- [UK Green Building Council](#)
- [Construction Leadership Council](#) - [The Construction Leadership Council \(CLC\)- CO2instruct Zero](#)
- [The National Federation of Builders](#)
- [ICE](#)
- [ACE](#)
- [RIBA](#)
- [CIOB](#)
- [IGBC](#)
- [Considerate Constructors](#)

Data on products, materials and buildings

- [Embodied Carbon Construction Calculator \(EC3\)](#) -This tool gives builders and designers information about the embodied carbon impact of building materials during the material selection process.
- [Inventory of Energy and Carbon](#) - Building materials database developed at the University of Bath presenting average values developed through a review of range of studies, available to download in excel or published in hard copy by BSRIA)
- [Green guide to specification](#) - Database of generic environmental impact data on building materials, components and elements.
- [Green Book live](#) - Database of manufacturer specific data on products and services)
- [IGBC EDP Database](#) – This allows manufacturers of construction products to provide 3rd party verified transparent information on the environmental impacts of their products. This information is publicly available so you can find the various environmental impacts of materials on this website.
- [SmartWaste](#) – Online environmental tool which helps the industry monitor and report on waste generation and management, site waste management plans, energy and water use, sustainable timber and material supply and carbon impacts from transport.
- [SteelConstruction.Info](#) – This tool holds generic figures for brick, concrete and steel
- [Tracker Plus](#) - End-to-end management system for BREEAM, LEED and Code for Sustainable Homes assessments.
- [Wood for Good Lifecycle Database](#) – This database holds generic information for timber, timber products and panels.
- [WRAP database](#) - Data and benchmarks covering all life cycle stages of a building

Training Resources

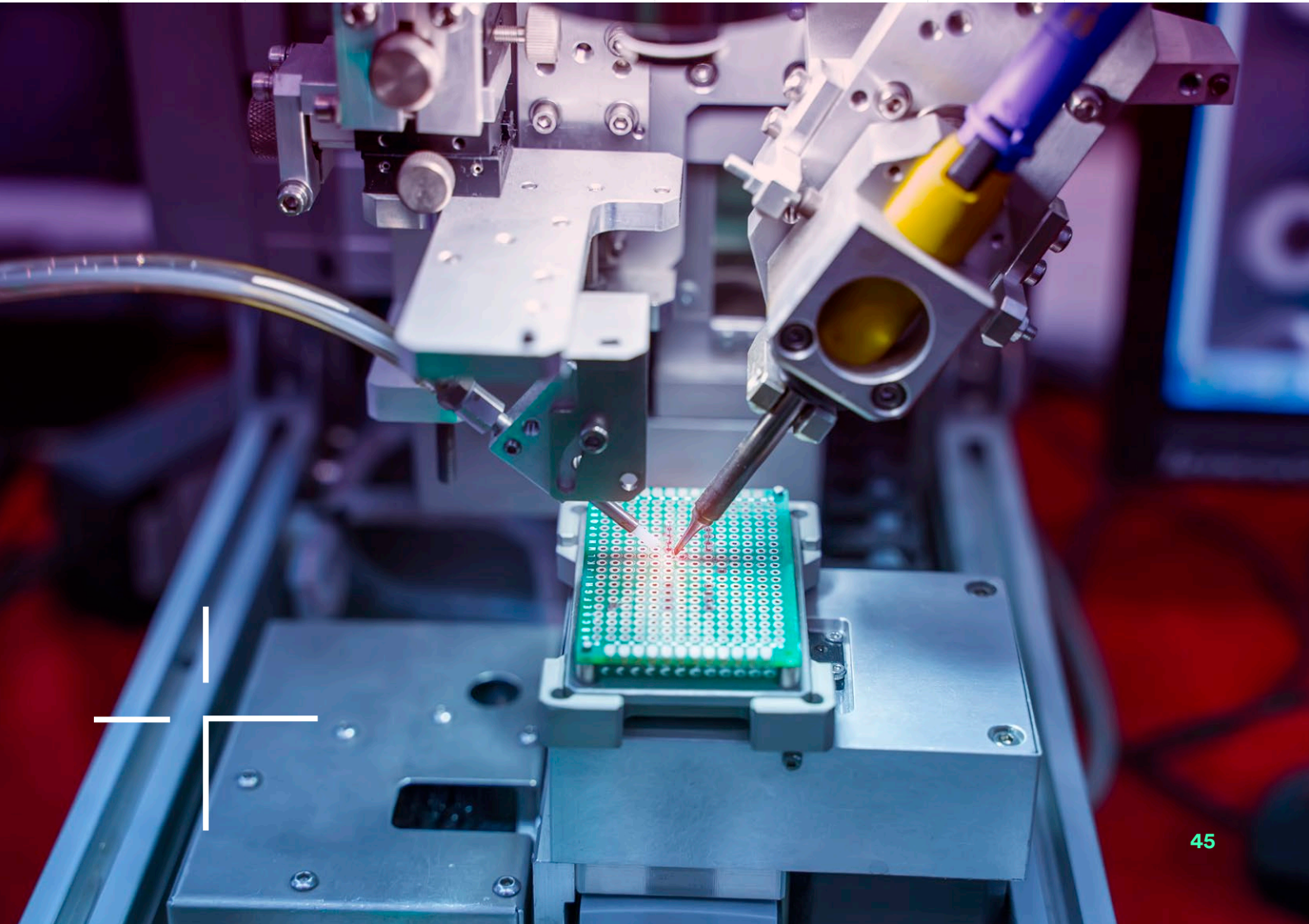
- [The Supply Chain Sustainability School](#)
- [The Sustainable Energy Authority of Ireland \(SEAI\)](#)

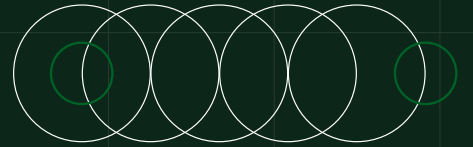
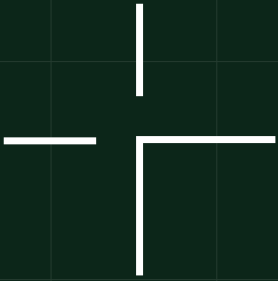


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- Roisin Bell, Market Intelligence Specialist, KnowledgeWorks





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Contact

For more information please contact the report authors



John.hunt@enterprise-ireland.com
Senior Advisor – Construction



Luke.newcombe@enterprise-ireland.com
Market Executive – Construction & Cleantech

www.enterprise-ireland.com