



# Greening the Chain

Overcoming barriers for a Net Zero Supply Chain

Supply Chain Sustainability School and Balfour Beatty 2021 Net Zero Survey

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**Balfour Beatty**



We're going to need a mix of technologies to deliver a zero-emissions future. It is encouraging to see the Government approach this with an open mind and mandate the outcome without dictating the technology. One size will not fit all – we mustn't end up down a cul-de-sac that slows down efforts to decarbonise.

Tim Burnhope, Chief Innovation and Growth Officer, JCB



# Foreword

With the Government committed to reaching Net Zero by 2050, and the size of the role played by construction and infrastructure in the economy, the industry will need to deliver Net Zero emissions across all of its activities, including those from materials production and construction processes, and those from energy used during an asset's lifespan.

The predominant model in UK construction means that the supply chain is responsible for c.80% of the sector's emissions, and therefore holds the key to unlocking the massive carbon reduction needed. Understanding how prepared the supply chain is and where it needs more support is therefore imperative. That's why we commissioned this survey and follow up interviews - to get to the heart of some of these issues and understand how and where we could be doing more.

This survey aimed to take the pulse of the supply chain on this important issue. It found that the sector is overwhelmingly positive about the opportunities presented by the drive towards a sustainable future: 74% of respondents said that the UK Government's push for Net Zero represents a positive opportunity for their business.

Just under 90% of the businesses surveyed said that they are already implementing - or are developing - a carbon reduction strategy and 72% have already set a commitment to be Net Zero and/or set a Science Based Target.

However, the survey also showed that for the industry to reach its Net Zero target, there remain significant challenges to overcome, and that more can be done to ensure the transition works for businesses of all sizes. Of those surveyed, 64% believe that the sector is not ready and needs considerable support to overcome existing barriers.

These include a lack of necessary skills in the workforce – and training to acquire them - and the poor availability of low or Net Zero carbon materials. Unfortunately, 50% say they struggle to get the new, lower carbon products, materials and processes we so urgently need, adopted by customers due to the risk averse nature of the sector and the ongoing overriding focus on short-term cost. These are issues that need addressing with urgency if we are to decarbonise the built environment. We hope the findings of this survey will help address and solve these challenges.

We will take these learnings and will fine-tune Balfour Beatty and the Supply Chain Sustainability School's approaches in response. We will also disseminate the survey data as far and wide as possible to make sure it reaches all of those who need to gain a deeper understanding of the support and changes needed to shift the dial on this critical issue and ensure that the whole sector moves forward together in decarbonising.

We are grateful for all of those who gave their time and insight to participate in this survey.

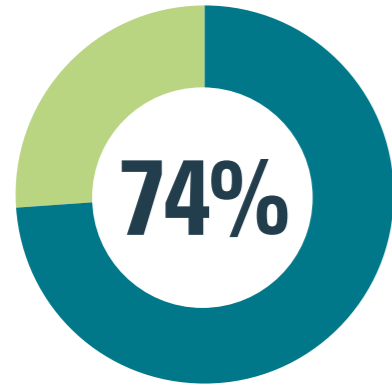


**Leo Quinn**  
Group Chief Executive,  
Balfour Beatty

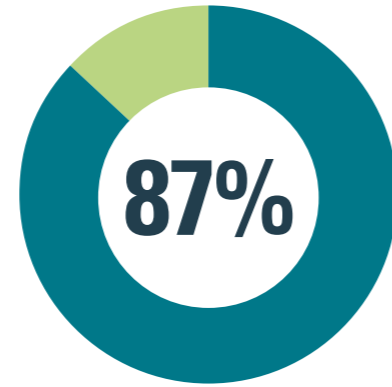


**Shaun McCarthy OBE**  
Chair, Supply Chain  
Sustainability School

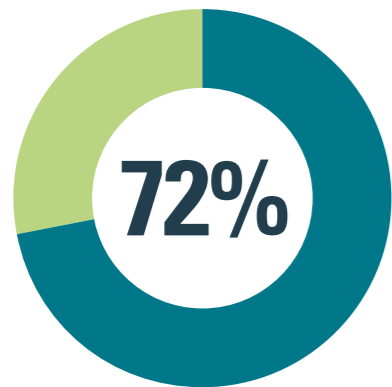
# Top-line findings



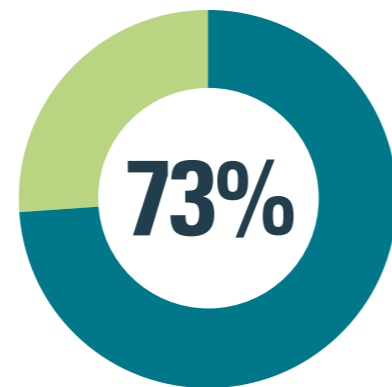
**74%** believe that the Government's push to Net Zero by 2050 is a positive opportunity for their business (**13%** view it as a risk).



**87%** are already implementing - or are developing - a carbon reduction strategy.



**72%** have set a commitment to be Net Zero carbon and/or set a Science Based Target or are in the process of doing so.



For **73%**, reducing carbon explicitly forms a part of their procurement / work winning process.

Highways Maintenance  
Balfour Beatty Living  
Places Southampton



We've made a huge amount of progress on reducing our emissions in the past few years. Unfortunately, the low-hanging fruit has now gone. It now becomes much more difficult. The barriers that remain include financial, technological and infrastructure.

Stewart Jones, Senior Sustainability Manager, Hanson, Heidelberg Cement Group



Customers can be inconsistent. If they buy steel directly, they might buy it from us to ensure it has as low a carbon footprint as possible, but if they are subcontracting to another company, they won't ask where the steel is sourced. To decarbonise the sector we need more end-to-end thinking and more transparency.

Brian Traynor, Business Development and Innovation Manager, Rom-Tech Steel recycling company



# Survey data

## Investment, recruitment and skills

- > In terms of how much businesses are investing in new, low or zero carbon products, materials or services, 36% are investing between 1-5%; 34% between 5-20%; and 19% are investing over 20%. Only 11% are not investing anything.
- > All of those we interviewed confirmed that decarbonising their own activities and investing in low carbon products and services has significantly increased in importance in the past few years. For example:

“Underpinning our business is the development of holistic solutions that support both low and zero carbon construction as part of a truly sustainable circular economy. We take single use plastic and convert it into next generation, recyclable products that have operational lives beyond 50 years. Our continuing focus on end-to-end carbon reduction has facilitated a cultural change and brought about a new level of relationship with customers and suppliers.”

**Ashley Bell, Head of HSQEP, Polypipe Civils & Green Urbanisation**

“JCB is decarbonising products to make sure we’re delivering what customers need. Using energy efficiently is a major part of our strategy, which takes the form of investing in energy-efficient technologies whilst increasing machine efficiency and productivity. We’re hugely proud to have developed the construction industry’s first-ever hydrogen powered excavator, just as we were very proud to have launched the industry’s first electric mini excavator.”

**Tim Burnhope, Chief Innovation and Growth Officer, JCB**

**19%** of businesses are investing over 20% of their profits in new low, zero carbon products, materials or services.

“Speedy has been on its decarbonisation journey for a number of years. It’s something we take really seriously as part of our dedicated ESG programme. We’ve set a Net Zero by 2050 target and we’re modelling our pathway through the Science Based Target initiative. We’re committed to helping our customers in their efforts to decarbonise and continue to invest in an extensive fleet of low carbon machinery, equipment and fuels, while we’re also switching our commercial vehicle fleet to lower carbon options.

We’re using our position as a key intermediary in the construction supply chain to connect the manufacturers of sustainable technologies with procurement communities to help boost understanding of the benefits for choosing lower carbon options. Carbon has to be a key measure for procurement teams alongside cost for anyone serious about driving down their emissions.”

**Amelia Woodley, Director of Environmental, Social and Governance at Speedy Services**

“Energy efficiency goes hand-in-hand with good business sense for us and always has. We use a lot of energy. The more energy efficient we are, the more we can keep costs down for our customers.”

**Brian Traynor, Business Development and Innovation Manager, Rom-Tech Steel recycling**

- > The transition to a low-carbon economy is seeing businesses begin to recruit people with new or different skills from those they have traditionally recruited, 38% noted changes in who they’re recruiting. For example, design engineers with experience in techniques required to produce solutions with lower carbon footprints over the lifecycle of the product; sustainability, carbon and circular economy leads; drone pilots; data analysts and those with expertise in social value and carbon capture expertise.
- > However, 78% believe that the sector does not have enough of the right skills available to support both individuals and businesses in the transition to a low-carbon economy.

M4 Smart Motorway



Putting aside the very large players in the industry who have sustainability teams, there’s a big educational piece needed to help smaller and medium sized companies to accurately calculate their carbon emissions. A lot of them don’t know where to start.

**Megan Adlen, Group Sustainability Director, Travis Perkins plc**



Cement, steel, lime – these are the hardest nuts to crack for the construction sector because there’s a huge process emission that you can’t get rid of.

**Stewart Jones, Senior Sustainability Manager, Hanson, Heidelberg Cement Group**



## Sector preparedness for Net Zero

- > In terms of how well-prepared the built environment sector overall is to meet the Government's 2050 Net Zero target, 22% feel that it is well-prepared, while 64% believe that the sector is not ready and must do more to prepare, with a range of barriers cited to doing so. These include: a lack of skills in the workforce to bring about change; cost still being the deciding factor in many schemes; the lack of availability of low or Net Zero carbon materials; and the need for earlier interaction leading to collaboration and design change before a bid is submitted.
- > Materials in particular are a critical issue. We know that this is an area that requires significant global focus and investment. Our interviewees told us:

"There is a big challenge for manufacturers when we talk about decarbonising construction. Manufacturing makes up a huge part of the construction industry's carbon footprint, particularly products like cement, bricks and plasterboard. There is a lack of availability, at scale, of low-carbon alternatives. Our large manufacturers are making good progress and are taking this seriously - but there's a lot of reliance on Carbon Capture and Storage. What if we get to 2030 and the CCS solutions are not viable?"

Megan Adlen, Group Sustainability Director, Travis Perkins plc

"We can deliver zero carbon concrete. We can change the fuels we use to biomass or hydrogen, for example, to drive emissions down further. But 70% of emissions from the manufacture of concrete come from the chemical reactions that take place. The solution is Carbon Capture and Storage, which is where we're aiming to get to by the early 2030s. It's a massive task. The innovation, technology and investment needed to do CCS on an industrial scale is absolutely vast."

Stewart Jones, Senior Sustainability Manager, Hanson, Heidelberg Cement Group

- > Another issue which emerged very clearly as something which customers need to address is how they are asking for data. As the need to decarbonise moves up the agenda, customers are interrogating their suppliers' own decarbonisation plans and requesting more data about the products and the associated embodied carbon, for example. However, this is potentially adding a burden onto smaller companies. Comments included:

"The appetite for environmental data, and in particular information on the levels of embedded carbon, has increased hugely. We are using this as a catalyst for change, driving investment both in research and development and in new ways of supporting customers in this rapidly changing data-led design and specification environment. For the construction industry to realise its Net Zero ambitions, it is vital that the supply chain standardises what information is needed and how it is collated. Only by creating a consistent and level playing field will we be able to move forward as a whole."

John Moss, Business Development Director, Polypipe Civils & Green Urbanisation

"A perceived premium to lower carbon options from customers has held back some uptake of sustainable technologies. But the more uptake there is, the more the price between the new, innovative option and the traditional option is equalised. In our powered access business, for example, we're now using hydrotreated vegetable oil (HVO) to top up machinery as standard at no extra cost to customers."

We are definitely seeing customers taking decarbonisation seriously now, not just in the products they are using, but also in their desire to understand the embodied carbon. We're getting an influx of data requests which have increased in complexity and detail. That's all really positive."

Alan Jones, Strategic Accounts Director, Speedy Service

"The industry needs to get to a point where there's a shared understanding of the metrics around carbon. It's a bit of a tangled mess at the moment, which increases the risk of 'greenwashing'. It's also complicated and burdensome for manufacturers when everyone wants information in slightly different ways."

Megan Adlen, Group Sustainability Director, Travis Perkins plc

**64%** believe that the sector must do more to meet the Government 2050 Net Zero target.



You do pay a premium for low carbon plant at the moment. It can be 10-15% more expensive or, for a fully electric, there can be a 30-40% premium. But there are savings in fuel costs and of course, the more people use it or buy it, the cheaper it gets. We won't move forward on decarbonisation by sticking with the lowest price, most polluting options.

Chris Matthew, Strategic Manager, P. Flannery Plant Hire



## Issues and solutions to help the sector achieve Net Zero

- > In terms of the some of the solutions which would be most effective in helping the sector achieve Net Zero, the top three most popular solutions were:
  - > Customers providing funding and financial incentives to drive prioritisation of Net Zero approaches.
  - > Clearer routes for getting low carbon approaches, materials or innovations prototyped, tested and scaled.
  - > More support from the Government for smaller companies in the construction supply chain to obtain sustainable materials.

50% say it's too hard to get new, lower carbon products, materials and processes adopted by customers. In terms of why this is, respondents cite conservatism of customers when it comes to trying new products; price, rather than sustainability remaining the determining factor; and specifications being set too tightly to allow for innovation.

- > 92% believe that bringing in the supply chain as early as possible and considering carbon from the outset delivers the best carbon outcomes.

- > We had a number of interviewees raise these issues. For example, on cost:

"Getting customers to choose the lower carbon option when there might be a premium attached to it has been a barrier. But the more uptake there is, the more the price between the new, innovative option and the traditional option is equalised."

Alan Jones, Strategic Accounts Director, Speedy Services

"Cost is still a really big factor when it comes to driving change at pace and at scale. There will be inevitably an associated cost to using new, lower carbon products at scale. It will probably come down over time, but, understandably, no one wants to have to absorb those costs."

Megan Adlen, Group Sustainability Director, Travis Perkins plc

**92%** believe in bringing in the supply chain as early as possible for the best carbon outcomes.

- > One point in particular which emerged on this issue was the need for customers to ensure that their own procurement teams are aware of and set targets in-line with their organisations' sustainability ambitions. Comments included:

"Our steel is manufactured in the UK from recycled material. We use UK labour and pay UK taxes – we tick all of the Build Back Better boxes. Our customers are delighted at our sustainability credentials, but when you get down to the nitty gritty conversations with the procurement departments, there are plenty of occasions where carbon emissions go out of the window and cost remains king."

**Brian Traynor, Business Development and Innovation Manager, Rom-Tech Steel recycling**

"We need a better connection between the sustainability and procurement communities so everyone understands the wider benefits of choosing the lower carbon options. That means that carbon has to be a key measure for procurement teams alongside cost for anyone serious about driving down their emissions."

**Amelia Woodley, Director of Environmental, Social and Governance at Speedy Services**

"To see real change, I think there also needs to be a stronger link between sustainability teams and the procurement teams. Procurement teams are usually set a price envelope which they're measured against. There needs to be a wider educational piece, so procurement teams also understand and are measured on carbon factors."

**Laura Jarvis, National Commercial Manager, Hanson, Heidelberg Cement Group**

"We're leading the charge in terms of buying the latest, lowest carbon plant. The challenge I have is adoption. There's a disconnect in Tier 1s between the Directors and sustainability teams, who are all on the right page, and the site procurement teams, who still go for the cheapest price."

**Chris Matthew, Strategic Manager, P. Flannery Plant Hire**

- > On specifications being set too tightly to allow for new, low-carbon solutions or products to be used:

"If the design specification has been firmly set by the time suppliers are brought into the procurement process, it's harder to influence and recommend lower carbon solutions. Parts of the supply chain, like Hanson, really need to be in the room much earlier than has traditionally been the case, so we can all help collaborate and achieve our carbon reduction goals. This collaboration is getting better, but there's still a way to go."

**Laura Jarvis, National Commercial Manager, Hanson, Heidelberg Cement Group**

"Getting the best, lowest carbon solutions in play calls for early engagement from the project management and design teams with suppliers."

**John Moss, Business Development Director, Polypipe Civils & Green Urbanisation**

- > Government and clients have the most influence over factors which will help the sector decarbonise, according to those surveyed.
- > When it comes to the tangible changes or incentives that would encourage suppliers to invest more in decarbonising their own business, policy certainty and a firm pipeline, and tax incentives to support investment were clearly the most favoured.

**50%** say it's too hard to get new, lower carbon products, materials and processes adopted by customers.

- > Incentives to move onto green energy tariffs and the removal of the rebate on hydrotreated vegetable oil (HVO) were particularly highlighted, for example:

"We try to be as sustainable as we can be. Two of the big areas where we still see barriers are in access to affordable green energy and in green alternatives to HGVs for transporting our steel. Some of the green energy tariffs are quite punitive – electricity for manufacturing in the UK costs around 5 times as much as in Germany. Incentives to offset that premium would allow us to convert to 100% green energy, which would make a massive difference."

**Brian Traynor, Business Development and Innovation Manager, Rom-Tech Steel recycling**

"JCB is leading the way in alternative propulsion technologies to decarbonise construction equipment. Hydrogen presents many opportunities as a zero carbon fuel for the future. One of the key challenges we see for our customers is the development of hydrogen infrastructure. JCB's breakthrough in hydrogen combustion technology sets the tone for the future – it should be ready to use at scale in the next few years, which means that a tangible and practical way of decarbonising some of the sector's activities is within our grasp. The Government is engaging, but we need momentum from our customers and their clients to get this over the line, particularly when hydrogen infrastructure is concerned."

**Tim Burnhope, Chief Innovation and Growth Officer, JCB**

- > In terms of the best ways (quickest, most impact, cheapest...) of addressing supply chain carbon emissions, respondents recommended:

- > Making them a contractual requirement to drive change and ensure a level playing-field
- > Including % reductions as requirements in tenders
- > Making all projects produce a lowest possible carbon solution and demonstrate the carbon impacts and cost impacts of this alongside the traditional solutions, to encourage innovation in design and the adoption of lower carbon solutions
- > Tier 1 contractors supporting and mentoring small businesses in their supply chain
- > Ensuring that smaller businesses in the supply chain are given the support they need was an issue that is high on the list of priorities for the larger companies, who flagged that the sector will be unable to meet decarbonisation targets unless the whole supply chain moves in lockstep. Comments included:

"We've had an incredibly steep learning curve in this area over the last 9-12 months. Smaller companies don't necessarily have expertise on issues outside their day-to-day business. They don't have sustainability teams. We need guidance on what we need to do, how and who we need to tell. Even starting ISO50000 accreditation is a complex, lengthy journey – it's taken hundreds of hours to get to where we are now."

**Chris Matthew, Strategic Manager, P. Flannery Plant Hire**



Travis Perkins sits in the middle of a very large supply chain. The large manufacturers with sustainability teams are definitely focused on reducing their emissions. But smaller ones, unless they're specifically marketing an environmental product, are not ready for what is essentially the biggest change that's going to hit our industry for a very long time. They are going to need a lot more support.

**Megan Adlen, Group Sustainability Director, Travis Perkins plc**



# About the survey

Balfour Beatty and the Supply Chain Sustainability School jointly undertook a survey of members of the supply chain in June, July and August 2021. This included a representative sample of 175 companies of all sizes, based across the UK and was based on questionnaire responses and qualitative one-to-one interviews.

Our aim was to understand the barriers, perceived or otherwise, issues and opportunities faced by the sector in achieving Net Zero by 2050, in order to identify key recommendations for policy makers and others to support the sector in achieving Net Zero by 2050. The long-term outcome we seek is for the built environment sector to be capable, confident and have the capacity to reach Net Zero by 2050, if not before.



Balfour Beatty machinery



M4 Smart Motorway

# About Balfour Beatty

Balfour Beatty is a leading international infrastructure group. Our main geographies are the UK, US and Hong Kong. With 26,000 employees - 14,000 of them based across the UK - Balfour Beatty finances, develops, delivers and maintains the increasingly complex infrastructure that underpins the UK's daily life, with projects across transportation, power and utility systems, social and commercial buildings.

Over the last 110 years, we have created iconic buildings and infrastructure all over the world including the London Olympics' Aquatic Centre, Hong Kong's first Zero Carbon building, the National Museum of the Marine Corps in the US and the Channel Tunnel Rail Link. We are proud to be a British company delivering iconic structures, bold engineering feats, behind-the-scenes innovation and joined-up thinking, financing and partnerships.

Balfour Beatty has already reduced its carbon emissions by 54.7% since its baseline year, 2010 and have set an ambition to go Beyond Net Zero Carbon by 2040. We also divert 99.5% of waste away from landfill and are going further with our ambition to Generate Zero Waste by 2040. We've also set a 2030 target to generate £3 billion social value and we're making it our ambition to Positively Impact More than 1 Million People by 2040. All of these ambitions form part of our refreshed Sustainability Strategy, Building New Futures.

In the UK, Balfour Beatty has a supply chain of around c.12,500 valued partners, many of which we have worked in partnership with for over a decade, and some of which we have worked with for over 30 years. They include large multinational companies, micro businesses and social enterprises. We spend two thirds of our revenues in procuring goods and services from our supply chain. In 2020, our UK net spend with these partners was over £2.7 billion: over 30% of this spend is with our top 100 partners.

Balfour Beatty is proud to be a partner member of the Supply Chain Sustainability School.

# About the Supply Chain Sustainability School

The Supply Chain Sustainability School<sup>1</sup> is a multi-award-winning initiative which represents a common approach to addressing sustainability within supply chains. With more than 39,000 registered users, the School provides free practical learning and support in the form of sustainability training, events and networking, e-learning modules, tailored assessment and a library of over 2,900 online resources.

The School is part-funded by CITB and industry Partners. It is delivered by an independent third-party consultancy, Action Sustainability. Leadership is provided by a School Board comprising elected representatives of Partners, responsible for fiscal governance and strategic direction.

A Code of Ethics is signed by all Partners as part of the School Constitution and Partners lead the direction of the School content and activities through leadership groups.



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deliver a Net Zero carbon world.

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