



# OUR JOURNEY TO NET ZERO

**BUILDING PROGRESS FOR  
A SUSTAINABLE FUTURE**



**Dragan Maksimovic**  
*CEO Aggregate Industries*

## CEO'S FOREWORD

**AT AGGREGATE INDUSTRIES WE UNDERSTAND OUR RESPONSIBILITIES. WE UNDERSTAND THAT SOCIETY'S DEVELOPMENT IS DEPENDENT ON THE CONSTRUCTION SECTOR. WE UNDERSTAND THE REALITIES OF CLIMATE CHANGE AND WE UNDERSTAND THAT THE PATH TO NET ZERO IS THE ONLY WAY TO ACHIEVE A SUSTAINABLE FUTURE FOR OUR COMMUNITIES, FOR OUR INDUSTRY AND FOR THE WORLD.**

This strategy sets out what we are doing today and what we will do in the future to achieve net zero. You have my personal commitment that I will drive it forward in everything we do and how we do it.

Through innovation and technical excellence, we are leading the way in decarbonising our industry. We have already developed low carbon products and processes, but now we need to see them more widely adopted. I want our strategy to be a call to arms for our sector to travel further and faster along the path to net zero.

Of course, our net zero strategy does not stand alone. It is intrinsically linked to our plans for nature and environment, one of the five pillars of our wider sustainability strategy. It will support our plan for nature and the environment, to be launched by the end of 2023. In this, we will take a similar science-based approach to ensuring we maximise nature's positive impact on the climate. It is also integral to our approach to the circular economy, where we know that 45% of the world's greenhouse gas emissions come from the way we make and use products. This means we have to rethink the way we do things, by eliminating waste and pollution and by circulating products and materials.

We recognise that the most effective route to achieving net zero carbon is through collaboration. 'Your Carbon Report', the first carbon reporting tool of its kind, embodies our approach – transparency and a commitment to partnership and shared learning with our customers.

This net zero strategy is about building progress and embedding sustainability in the future of construction. I invite you to join us on the journey it sets out.

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# WHO WE ARE

**A PROUD MEMBER OF THE HOLCIM GROUP –  
THE GLOBAL LEADER IN INNOVATIVE AND  
SUSTAINABLE CONSTRUCTION SOLUTIONS –  
AGGREGATE INDUSTRIES IS ONE OF THE UK’S  
LEADING CONSTRUCTION MATERIALS SUPPLIERS.**

## **WE ARE PROGRESSIVE**

We're at the frontline of the construction industry, producing and supplying an array of construction materials. Our solutions are driven by innovative thinking, consistent learning and development, and an unwavering commitment to championing sustainability across our industry.

## **WE ARE RELIABLE**

We're able to supply our high-quality products and services and to incorporate sustainable solutions to suit any project or vision.

## **WE ARE COLLABORATIVE**

Based on a deep understanding of their needs, we provide solutions built on shared sustainability commitments, to meet and exceed our customers' expectations.



# WHAT WE DO

**AGGREGATE INDUSTRIES IS HOME TO EVERYTHING FROM AGGREGATES, ASPHALT AND CEMENT TO READY-MIXED CONCRETE & PRE-CAST CONCRETE PRODUCTS.**

**WE PRODUCE, IMPORT AND SUPPLY CONSTRUCTION MATERIALS, EXPORT AGGREGATES AND CARRY OUT NATIONAL ROAD SURFACING AND CONTRACTING SERVICES.**

We are transforming our business and driving our growth, through sustainable thinking. We already offer a range of low carbon solutions which promote the circular economy. We are committed to building on our success by investing in Research & Development and innovation, and by working in collaboration with sustainability-minded stakeholders. We are about building progress and embedding sustainability in the future of construction.



**WE WILL BE THE UK LEADER IN INNOVATIVE AND SUSTAINABLE BUILDING SOLUTIONS AND THE ACCELERATION OF THIS JOURNEY HAS ALREADY STARTED.**

**JOIN US ON OUR JOURNEY**

# OUR PROGRESS SO FAR

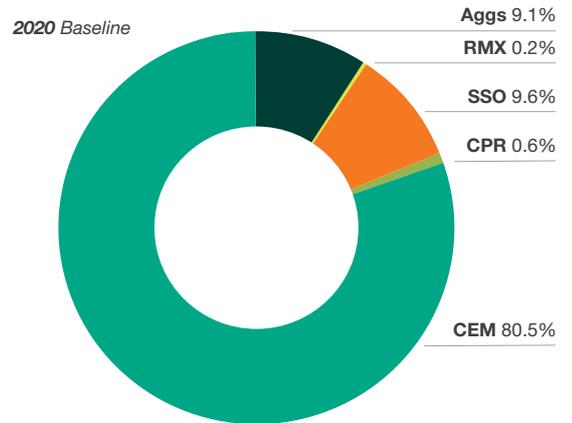
**AGGREGATE INDUSTRIES HAS BEEN MEASURING ITS CARBON FOOTPRINT SINCE 1999 AND HAS MADE SIGNIFICANT PROGRESS IN REDUCING ITS IMPACT IN THAT TIME.**

Over time we have evolved and grown to include the acquisition of carbon-intensive businesses such as our Caudon cement plant, but looking forward to a net zero future, this puts us in full control of the key manufacturing steps required to decarbonise our products, from quarry to lorry.

**Carbon emissions per tonne of product – Scope 1 and 2**  
Aggregate Industries, Lafarge Caudon & Cookstown



**Total carbon emissions – Scope 1 and 2**  
Aggregate Industries & Lafarge Caudon



**2020 Baseline Year Total Scope 1 & 2 Emissions = 1.13M tCO<sub>2</sub>e**

**2022 Scope 1 & 2 Emissions = 0.78M tCO<sub>2</sub>e**

# UNDERSTANDING OUR CARBON FOOTPRINT

WE USE THE STANDARD GREENHOUSE GAS PROTOCOL,  
WHICH CATEGORISES GREENHOUSE GASES ASSOCIATED WITH OUR  
CARBON FOOTPRINT AS SCOPE 1, SCOPE 2, OR SCOPE 3 EMISSIONS.

## SCOPE 1

Scope 1 emissions are GHGs produced by sources we directly own or control and they are the main source of emissions resulting from our activities. We produce CO<sub>2</sub> by burning fuel within our asphalt and cement plants, by operating heavy mechanical equipment or driving our own vehicles. The production of CO<sub>2</sub> from the chemical reaction required to make clinker, a key part of the cement manufacturing process, is also classified as Scope 1. Scope 1 emissions can be reduced by using lower carbon alternative fuels and by reducing fuel consumption through efficiency measures.

## SCOPE 2

Scope 2 emissions are those indirect emissions resulting from purchased electricity, steam, heating or cooling. By 2022, all of the electricity we purchased came from zero-carbon sources in support of the continuing development of clean power in the UK.

## SCOPE 3

Scope 3 are indirect emissions as a result of activities that occur within our value chain from assets not owned or controlled by Aggregate Industries.

We categorise them in the following way:

- **Purchased Goods and Services**  
*(Includes equipment, chemicals and bulk materials)*
- **Fuel and Energy Related Activities**  
*(not included in Scope 1 & 2)*
- **Upstream Transportation and Distribution**
- **Business Travel**
- **Employee Commuting**
- **Downstream Transportation and Distribution**

We provide a breakdown of our carbon emissions in our Annual Report & Financial Statements, to comply with the Streamlined Energy & Carbon Reporting (SECR) regulations, and within our annual Sustainability Report.

# OUR JOURNEY TO NET ZERO

By net zero we mean we will reduce the amount of greenhouse gases (GHG) we emit into the atmosphere to a level where they do not exceed the amount we remove.

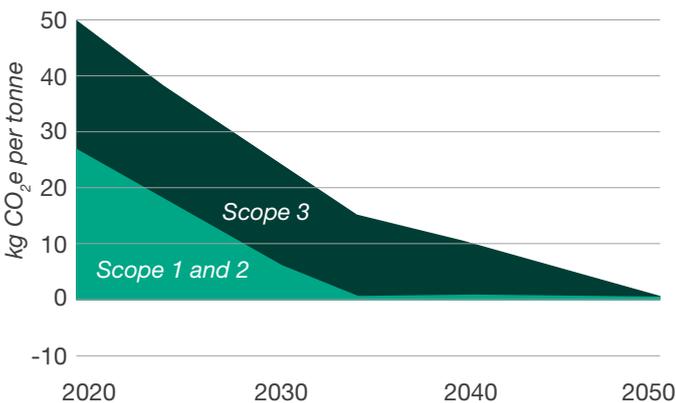
We recognise that we have opportunities to remove carbon from the atmosphere through creating woodland within our estate or by the capture and storage of CO<sub>2</sub> from our cement plant, but our plan to reach net zero does not include any activities to offset our emissions. Instead, we plan to reduce the amount of carbon we release into the atmosphere as quickly as possible.

We will take a science-driven approach on our journey to net zero. Through our parent group Holcim Ltd, we were among the first companies worldwide to have our CO<sub>2</sub> reduction targets validated by the Science Based Targets Initiative (SBTi). This global partnership defines and

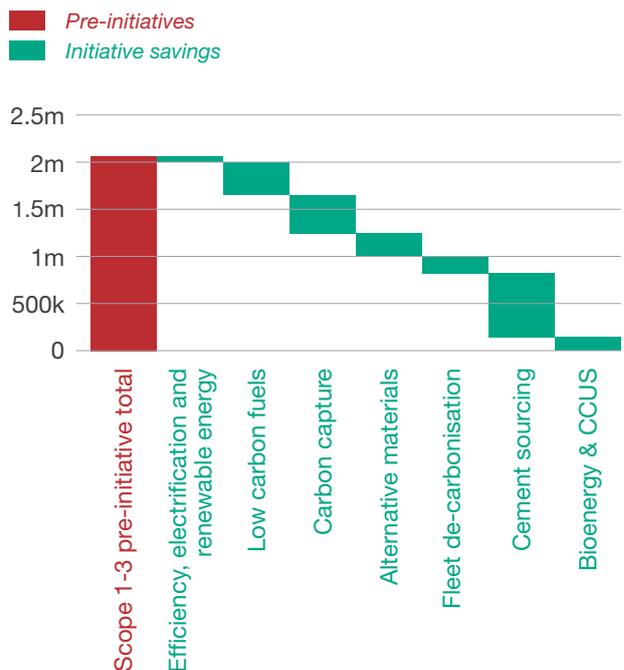
promotes best practice in net zero targets in line with climate science and the goals of the Paris Agreement to limit warming to 1.5°C above pre-industrial levels. The targets outlined in this strategy show how Aggregate Industries' UK ambitions feed into the global Holcim SBTi commitments.

In an energy and carbon intensive business such as ours, we recognise that the transition to net zero will require significant organisational change. To deliver this, we have established five key workstreams to identify technologies and processes that can support the journey to net zero. Each is sponsored by a member of our executive leadership team and brings together a broad range of colleagues to identify, trial and implement solutions and to share learning across the business.

**2050 Modelled Carbon Pathway**  
Emissions per tonne of product

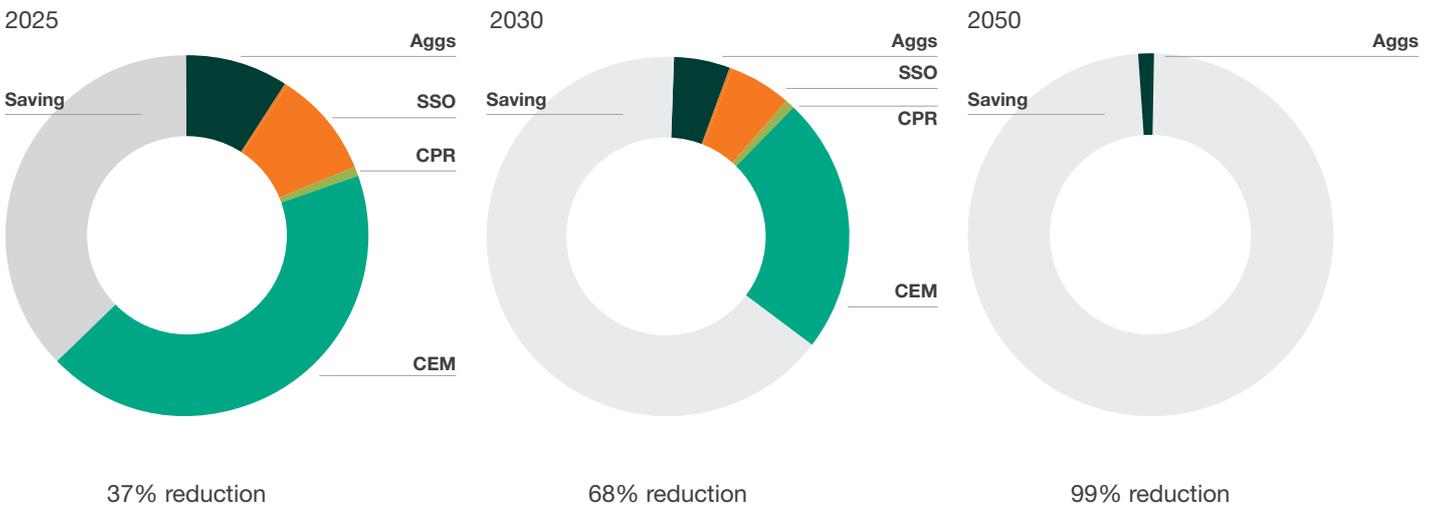


**Scope 1-3 carbon savings from key initiatives**



# OUR JOURNEY TO NET ZERO

## Scope 1 & 2 emission reductions



## Our planned emissions reductions

From a baseline of 2020

		% reduction benchmarked against production	kgCO <sub>2</sub> e per tonne of product
2020 Baseline year	Scope 1 & 2		27.4
	Scope 3		22.3
2025	Scope 1 & 2	37%	17.2
	Scope 3	13%	19.3
2030	Scope 1 & 2	68%	8.7
	Scope 3	16%	18.6
2050	Scope 1 & 2	99%	0.2
	Scope 3	89%	2.4

The combination of using waste materials derived from biomass and carbon capture will provide us with the opportunity to store an estimated 139k tonnes of 'biogenic CO<sub>2</sub>' by 2050, bringing our overall emissions for all scopes down to zero.

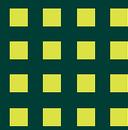
# WE WILL ACCELERATE OUR JOURNEY TOWARDS NET ZERO & ACHIEVE IT BEFORE 2050

## OUR FIVE WORKSTREAMS



### RENEWABLE ENERGY

Playing our part in supporting the UK's drive for cleaner energy.



### ALTERNATIVE MATERIALS

Developing innovative products that prioritise sustainability without compromising performance.



### LOW CARBON FUELS

Making the switch to new and emerging technologies.



### CARBON CAPTURE, UTILISATION AND STORAGE (CCUS) AND WASTE FUELS

Bold solutions to some of our biggest challenges.



### ENERGY EFFICIENCY AND DEMAND MANAGEMENT

A smarter, more flexible approach for a more sustainable energy future.

WITH THE EXCEPTION OF CARBON CAPTURE, UTILISATION AND STORAGE, WHICH IS SPECIFIC TO CEMENT PRODUCTION, OUR WORKSTREAMS FIND APPLICATIONS ACROSS ALL AREAS OF OUR BUSINESS. WE HAVE HIGHLIGHTED SOME OF THESE ACTIVITIES ALONGSIDE THE BUSINESS AREA WHERE THEY ARE MOST RELEVANT.

# AGGREGATES

**THE IMPORTANCE OF AGGREGATES – CRUSHED STONE, GRAVEL AND SAND – MAY NOT ALWAYS BE IMMEDIATELY OBVIOUS, BUT THEY ARE THE BUILDING BLOCKS OF THE WORLD WE LIVE IN.**

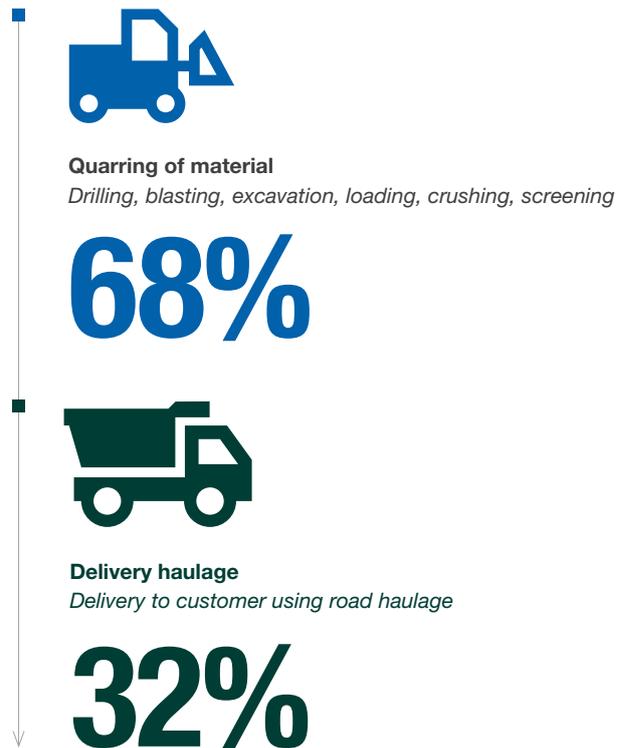
Used with a binding medium such as cement or bitumen to produce compound materials, they are at the core of any construction project. With over 60 quarrying operations, we provide a nationwide supply of high-quality aggregates to help build for the future.

## Understanding our carbon footprint – aggregates

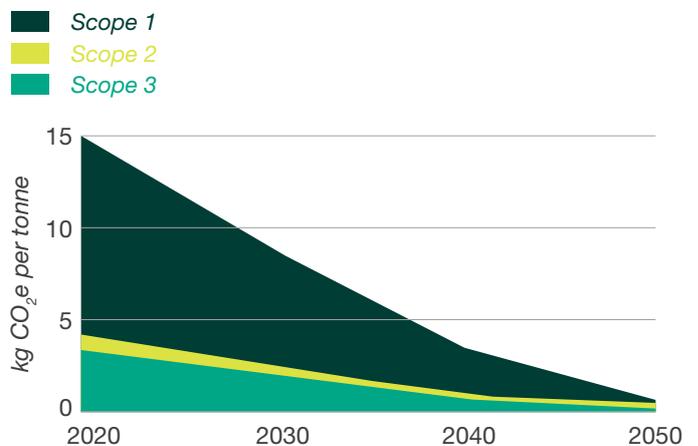
While the physical extraction of the materials we use to produce aggregates accounts for a relatively small amount of our carbon emissions, there are other elements in the production process which have a greater carbon footprint. We need to adopt new technologies and processes to tackle these.

The use of diesel to transport raw materials on site and to power heavy mechanical plants such as screening and crushing equipment is the most significant of these, but the downstream transportation of aggregates is also an important consideration as we search for ways to reduce their carbon footprint. And with aggregates being a key component of our products, any carbon savings we make here leads to a reduction in the embodied carbon of most of our products.

## Percentage contributions to carbon footprint of stages in aggregate production process



## Our net zero emissions path for Aggregates



# AGGREGATES

## OUR WORKSTREAMS IN ACTION RENEWABLE ENERGY

Helped by rapid progress in decarbonising the National Grid, scope 2 emissions from purchased energy make up a relatively small proportion of our overall carbon footprint. Nevertheless, we have identified the need to accelerate the use of renewable energy in our own operations as one of our key workstreams. Currently, all of the energy we source is zero-carbon nuclear energy, but we also want to play our part in supporting the UK's drive for a cleaner future by concluding Power Purchase Agreements and by providing land that will support the further development of renewable energy.

*"It's clear that by developing our ability to generate renewable energy at our sites we're making a major contribution to our net zero goals - and it proves it doesn't have to be a case of 'planet versus profit'. Growing our own renewable energy capacity is a virtuous circle that reduces our emissions, lowers our costs and reinforces the business case for introducing more expensive low carbon technologies, such as electric vehicles. We have over 30MW of renewable energy projects in development and we're aiming to generate 50MW at our sites by 2025."*



**Matthew Nairn**  
Capex Project Manager





# **BY 2025 WE WILL**

- REDUCE EMISSIONS ASSOCIATED WITH HEAVY MECHANICAL EQUIPMENT BY OVER 25%**
- REDUCE EMISSIONS FROM DOWNSTREAM TRANSPORTATION BY OVER 10%**
- REDUCE GAS OIL CONSUMPTION BY 10%**
- INCREASE BIODIESEL AND HVO USAGE TO OVER 25% OF CONSUMPTION WITHIN OUR AGGREGATES BUSINESS**
- INCREASE OUR USE OF RAIL TRANSPORT BY OVER 10%**
- INSTALL THREE LARGE-SCALE RENEWABLE ENERGY PROJECTS**

## CASE STUDY

### WIND TURBINES DELIVER LOW CARBON ELECTRICITY

We have installed 500kW wind turbines at two of our operating sites to supply low carbon electricity directly to the works and to reduce the amount of embodied carbon the materials have when produced.

At our Back Lane Quarry near Carnforth in Lancashire, the turbine saves approximately 700 tonnes of carbon emissions annually – half of the quarry's emissions related to electricity consumption, while at our Melbur Blockworks in Cornwall, data from the first year of operations show that the turbine reduced imported electricity consumption at the site by 44%.

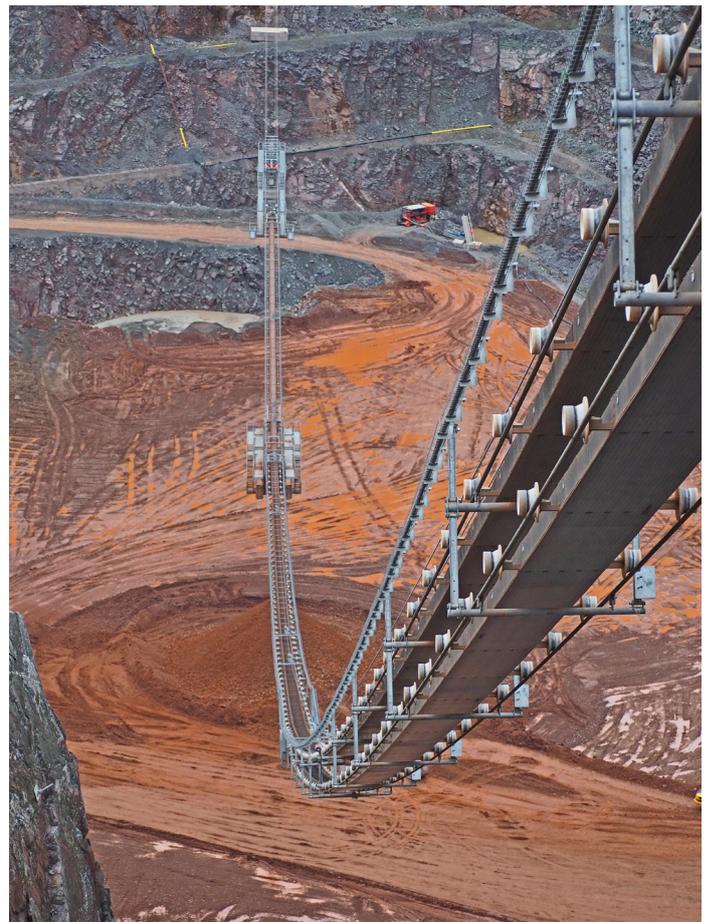


## CASE STUDY

### REDUCING CO<sub>2</sub> EMISSIONS AT BARDON

The extension of our Bardon Hill Quarry in Leicestershire, one of the UK's oldest continuously operated quarries, will require over 12 million cubic metres of overburden to be progressively removed, transported and placed within the exhausted quarry as part of its restoration.

We have invested in an innovative suspended conveyor system stretching 850m across the entire pit, capable of processing 1,000 tonnes of overburden per operating hour. Its introduction represents a dramatic improvement over a conventional road haulage solution, with a reduction in our dumper fleet by two thirds and annual savings of over 1.4m litres of diesel and 3,888 tonnes of CO<sub>2</sub>.



© Doppelmayr

## CASE STUDY

### CLEANER FUELS AT BARDON

HVO – hydrotreated vegetable oil – is a diesel alternative made from waste biomass materials. It has a significantly lower carbon footprint and produces less NOx and particulate matter than diesel.

At our Bardon Hill Quarry we are replacing diesel with HVO on equipment such as generators, compressors and crushing and screening plant. All of our HVO is traceable to source under the International Sustainability & Carbon Certification Scheme, does not result in any deforestation and will save an estimated 3,301 tonnes of CO2e at Bardon Hill. The savings from this, together with our suspended conveyor system saves enough carbon annually equivalent to driving a car 26,000 miles.



# CEMENT

## AS A BINDER IN CONCRETE, CEMENT IS ESSENTIAL TO THE INFRASTRUCTURE ON WHICH OUR SOCIETY IS BUILT.

We provide one of the widest ranges of high-quality cements on the market, capable of meeting the most challenging needs.

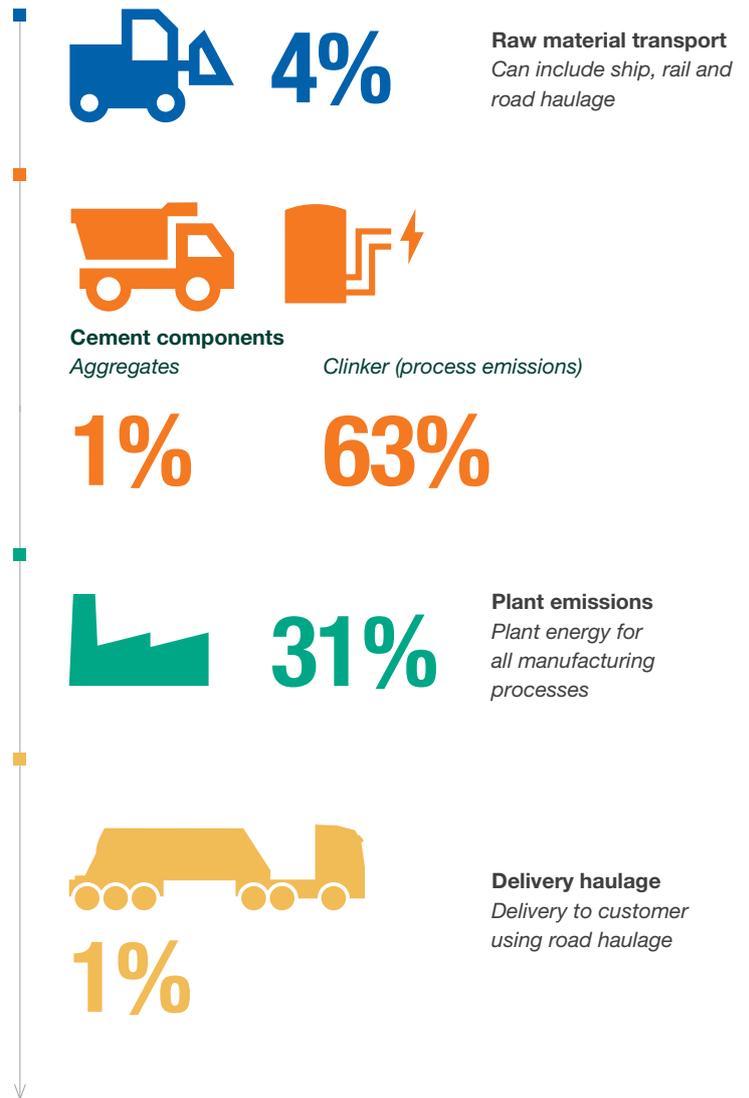
However, producing cement is a highly energy-intensive process and accounts for around 70% of our emissions, so we have an ambitious decarbonisation roadmap in place for this area of our business.

### Understanding our carbon footprint – Cement

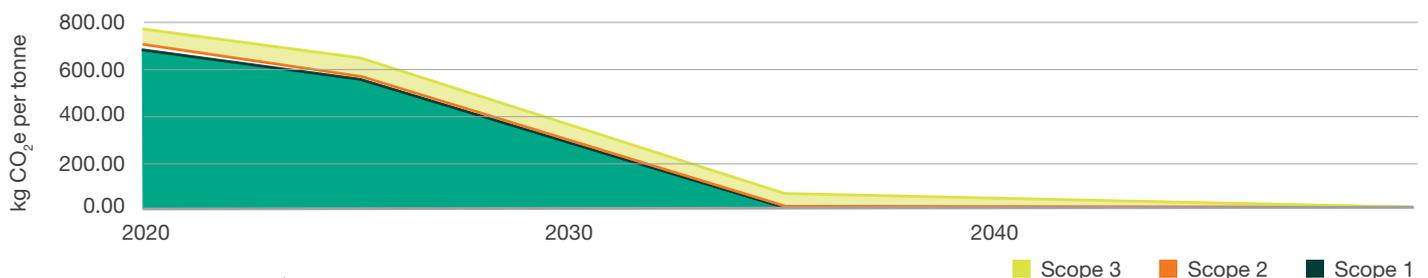
The process of calcination, where calcium carbonate in the raw material - limestone - is heated to high temperatures, produces calcium oxide or lime. This reacts with other constituents of the raw material to form nodules of new minerals, known as clinker, which, ground and mixed with other minerals, is the basis of cement. This 'process CO<sub>2</sub>' is an inherent part of cement production and cannot be avoided. However, it can be captured and stored, and we can reduce the amount of clinker we produce by substituting it with other materials, such as construction demolition waste in the cement mix.

The other major source of CO<sub>2</sub> emissions derived from cement production is combustion emissions from fuel burnt to generate the high temperatures required for the calcination process. They can be reduced by switching to more efficient installations and cleaner fuels.

### Percentage contributions to carbon footprint of stages in cement production process



### Our net zero emissions path for Cement





# BY 2025 WE WILL

- **REDUCE CO<sub>2</sub> EMISSIONS DOWN TO 500 KG CO<sub>2</sub> NET/T CEMENTITIOUS**
- **COMPLETE OUR CARBON CAPTURE AND CO<sub>2</sub> PIPELINE FEASIBILITY STUDIES**
- **INSTALL A LARGE-SCALE RENEWABLE ENERGY PROJECT**
- **DOUBLE THE AMOUNT OF BIOMASS FUELS USED WITHIN OUR CAULDON CEMENT MANUFACTURING PROCESS BY EXTENDING OUR ALTERNATIVE WASTE FACILITY**

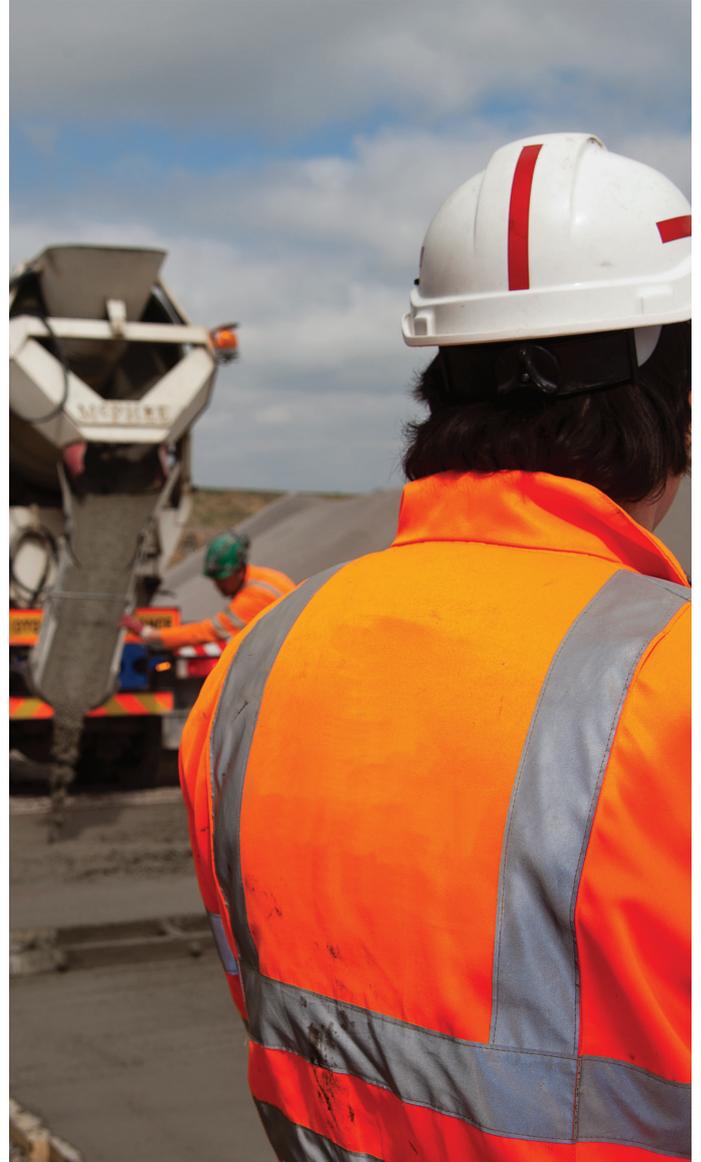
We also recognise that working with other low carbon cement producers is essential for our decarbonisation strategy as we use more cement than we produce at our Cauldon plant. We will engage with all our key suppliers to ensure they match our 2050 ambitions and prioritise the use of lower carbon materials, supporting the industry to transition and helping us achieve our scope 3 emission reduction targets.

# CEMENT

## OUR WORKSTREAMS IN ACTION CARBON CAPTURE UTILISATION AND STORAGE (CCUS) AND WASTE FUELS

To address the specific issue of process CO<sub>2</sub> in our cement production – those emissions which are inherent in the process, and which cannot be avoided – our CCUS Workstream is investigating a range of carbon capture technologies which could be employed at our Caudon cement plant to capture CO<sub>2</sub> at source. Solutions will also be needed for the transportation of over 600,000 tonnes of CO<sub>2</sub> from Staffordshire to permanent storage sites in the Irish Sea. The target we have set ourselves for the introduction of this technology is 2030 and to meet this we will need to have completed our feasibility studies by 2025. We are also working with a range of partners to explore how captured CO<sub>2</sub> from other processes might be utilised within other industrial processes, or even stored within novel building materials.

The other element of this workstream aims to reduce combustion emissions by switching from conventional fossil fuels to those derived from waste materials and biomass. The development of Phase 2 of our Alternative Waste Facility will enable us to double the use of these materials by 2025. The combination of using waste materials derived from biomass and carbon capture will also provide us with the opportunity to store an estimated 139k tonnes of 'biogenic CO<sub>2</sub>' by 2050, permanently removing additional CO<sub>2</sub> and creating a net negative cement.



## CASE STUDY

### CAULDON ALTERNATIVE WASTE FACILITY

Our Cauldon cement plant in Staffordshire has a long history of innovation. In 2022 we took another step forward when we completed a £13m investment in a new alternative waste facility at the plant.

It means we can replace fossil fuels with 100,000 tonnes of alternative fuels derived from waste materials each year - materials that would otherwise go to landfill. These include processed sewage pellets, Solid Recovered Fuel (SRF), from paper, plastic and biodegradable waste generated from homes and businesses, and Waste Derived Liquid Fuel (WDLF), a blend of waste found in everyday products such as paint, solvents and degreasers. All are supplied to us by reputable organisations and meet a strict Code of Practice set out by the Environment Agency.

The second part of the project is a new chloride bypass, built into the existing kiln equipment in the main cement plant. This removes any additional chloride which may be present in the new fuel sources, ensuring that the quality of the final product is not compromised. Any excess chloride is utilised at the end of the process, resulting in no additional waste materials.

This latest step towards our sustainable future meets over 40% of the plant's heat requirement and reduces its CO<sub>2</sub> emissions by 30,000 tonnes annually.



# SURFACING SOLUTIONS

**ROAD NETWORKS WILL CONTINUE TO BE AN INTEGRAL PART OF SOCIETY. HOW WE PRODUCE THE RAW MATERIALS AND CONSTRUCT THEM MUST CHANGE, TO INCORPORATE PIONEERING AND ADVANCED TECHNOLOGIES WITHOUT COMPROMISING ON PERFORMANCE AND QUALITY.**

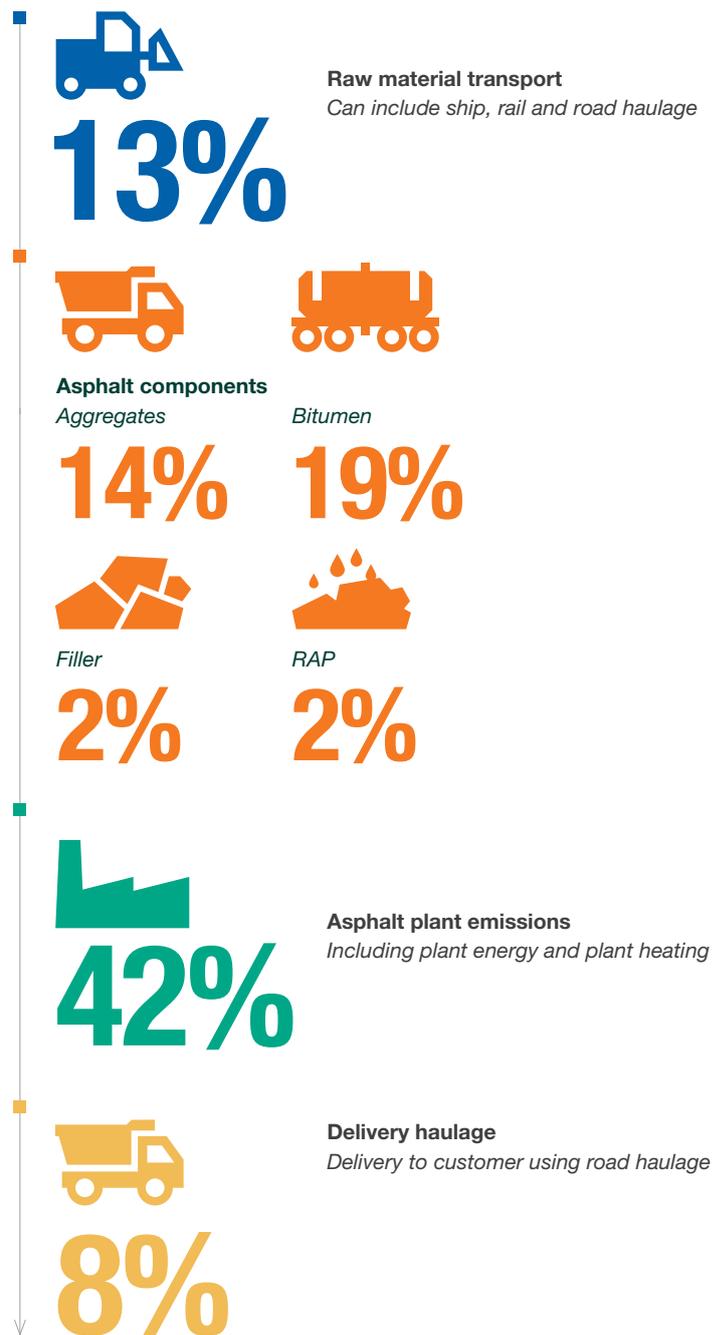
Our Surfacing Solutions team offers a whole-chain approach to delivering sustainable solutions, including the use of Superlow asphalt, the UK's first ever commercially available biogenic asphalt that locks CO<sub>2</sub> within its structure.

We're also increasing the use of reclaimed asphalt pavement (RAP), taking worn out roads and reusing the aggregates and bitumen to produce new ones.

## Understanding our carbon footprint – Asphalt

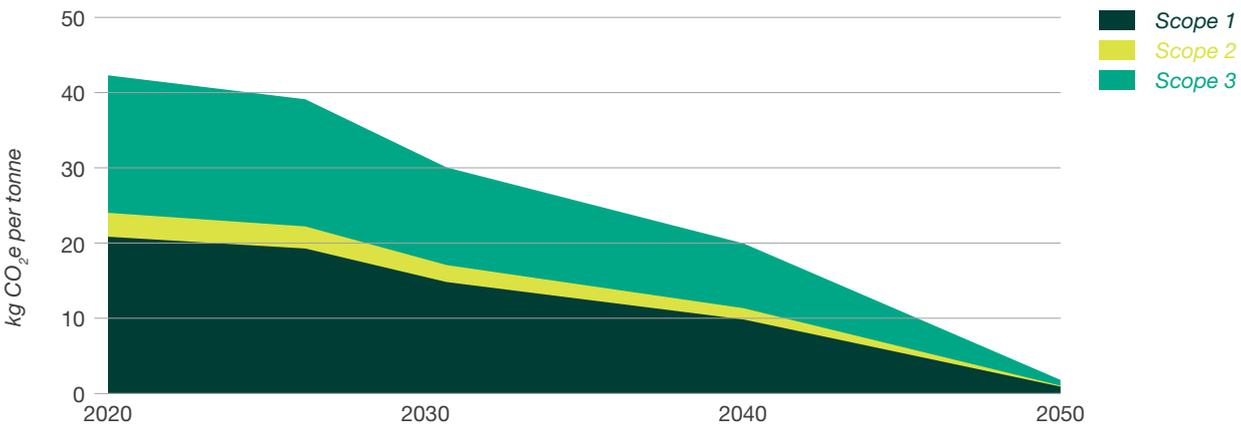
Emissions from burning fuel to dry and heat the raw materials of asphalt make up more than 50% of its carbon footprint. We can reduce this by making more use of alternative fuels and by switching to warm and cold mix products. By increasing the use of reclaimed asphalt pavement, we can make a significant reduction in the other main sources of emissions from the manufacture of asphalt, the use of bitumen and of virgin aggregates, including their transportation to our manufacturing plants.

Percentage contributions to carbon footprint of stages in cement production process



# SURFACING SOLUTIONS

## Our net zero emissions path for asphalt



## OUR WORKSTREAMS IN ACTION

### ENERGY EFFICIENCY AND DEMAND MANAGEMENT

Energy efficiency is recognised as being one of the most important levers for decarbonisation. In an energy-hungry industry like ours, energy efficiency matters. If we are to meet our sustainability goals, we will need to do more with less. We must become more flexible in our approach, learning how to take full advantage of cleaner, cheaper energy generated by wind and solar and how to minimise our consumption when these sources are not available. In this way we can meet our target to reduce our electricity consumption from the grid by 20% by 2025.

Among the ongoing projects we have to achieve this are a partnership with Aston University to study how waste heat can be recovered from asphalt manufacturing and reused in the process. We've also introduced a company-wide energy management system which meets ISO 50001, the international standard for energy management systems. It takes us beyond simple energy reviews to support continuous improvements and clearly identified energy management objectives.

*“Energy efficiency is everyone’s business. We’ve rolled out our POWER Program right across our estate, to focus on saving electricity. It drives detailed energy assessments and identifies efficiency projects to support individual, site-specific energy plans - and it’s backed by a network of committed energy champions.”*



**Joanna Jones**  
Energy Manager



# **BY 2025 WE WILL**

- REDUCE CARBON EMISSIONS ASSOCIATED WITH THERMAL ENERGY USAGE BY OVER 5%**
- INCREASE BIODIESEL AND HVO USAGE TO A THIRD OF SURFACING SOLUTIONS' CONSUMPTION.**
- INCREASE THE USE OF RECYCLED ASPHALT PLANINGS BY 60%**
- TRANSITION TWO ASPHALT PLANTS TO LOW-CARBON FUELS**

## CASE STUDY

### MAKING THE SWITCH TO WARM MIX ASPHALT

Decarbonising construction materials lies at the heart of Aggregate Industries as we strive to pave the way for a greener future. That's why we have transitioned to Warm Mix Asphalt (WMA) production as standard across our asphalt product portfolio.

Mixing at temperatures 20°- 40°C lower than hot mix asphalt means a significant reduction in CO<sub>2</sub> emissions, because less fossil fuel is used during the manufacturing process. If all production in the UK switched to WMA, it would save around 61,000 tonnes of CO<sub>2</sub> each year, the equivalent of cutting car journeys by around 480 million kilometres.

Switching to WMA reduces build costs, enhances product life expectancy and brings safer working conditions during both manufacture and laying, all without compromising quality and performance.



## CASE STUDY

### SUPERLOW-CARBON THE UK'S FIRST EVER COMMERCIALY AVAILABLE BIOGENIC ASPHALT

We have worked with Shell Bitumen to bring the first commercially available biogenic asphalt to the UK market. SuperLow-Carbon - chosen as Product of the Year at the Highways Awards 2022 - is manufactured at lower temperatures than standard asphalt, which means it requires less energy to produce than its hot mix equivalent. The use of alternative energy sources further lowers its embodied carbon footprint, while its unique formula includes a biogenic material that effectively locks CO<sub>2</sub> within the asphalt rather than releasing it back into the atmosphere – even when recycled.





LEADING THE WAY WITH

# FOAMIX™

Low Carbon Recycled Asphalt

Our innovative Foamix asphalt promotes a circular economy approach to road construction by reducing the requirement for virgin aggregates. As a cold-mix asphalt, it does not require its source materials to be processed with heat, thereby producing less CO<sub>2</sub> compared to standard asphalt products. It can be manufactured where construction is taking place using our Sitebatch Technologies mobile mixing plants, where locally sourced planings from the existing road are re-processed to enable Foamix to be placed, compacted and put into immediate use. This minimises vehicle movements, construction times and user disruption to deliver a significantly lower carbon footprint for the overall scheme.

Foamix was our chosen solution when we were appointed by Kier Highways to support the resurfacing of 3.5 miles of the A46 Warwick bypass on the National Highways network. More than half of the materials from the old road were recycled back into the new one, cutting the scheme's carbon footprint by 23% in an eco-friendly and cost-effective solution.

*"This scheme proves just what we can achieve when everyone comes together to meet the low carbon goals we set ourselves. We've calculated that some 17,432 tonnes of material from the old road surface were recycled back into the new carriageway and with fewer trips to the waste site, around 82,000 road miles were saved. And with Foamix delivering a safer working environment and a smoother, safer ride for drivers, that's an achievement we can all be proud of."*



**Neil Leake**  
National Technical Manager



# READYMIX CONCRETE

**VERSATILE, AFFORDABLE, READILY AVAILABLE EVERYWHERE – AND 100% RECYCLABLE - CONCRETE IS THE MOST RELIABLE AND WIDELY USED BUILDING MATERIAL IN THE WORLD.**

**AS DEMAND FOR MORE SUSTAINABLE SOLUTIONS INCREASES, WE'RE ON-HAND TO HELP OUR CUSTOMERS REDUCE THE FOOTPRINT OF THEIR BUILDINGS AND INFRASTRUCTURE TO BUILD BETTER AND TO BUILD MORE WITH LESS.**

Leading the way is our ECOPact green concrete, offering a carbon reduction of between 30% and 100% over standard concrete mixes.

## **Understanding our carbon footprint – Readymix concrete**

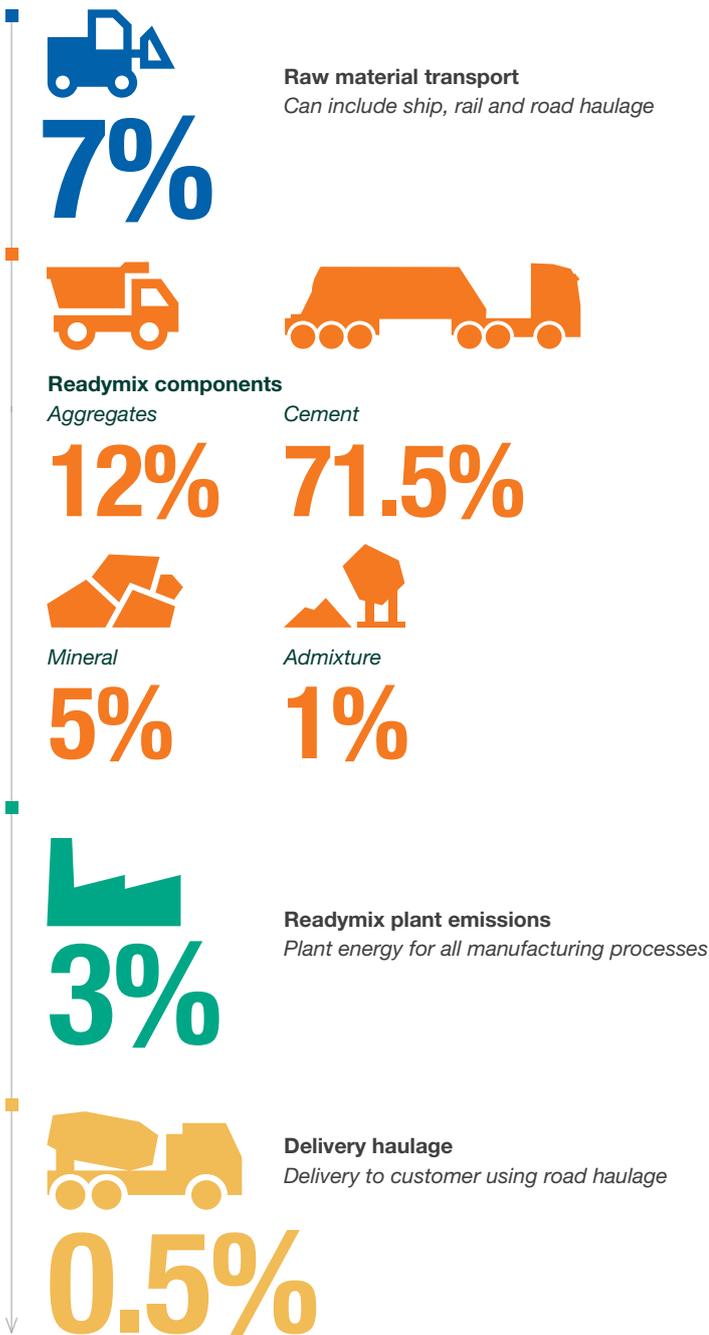
Concrete is one of the world's most widely used materials, meaning the environmental impact of concrete results not only from the amount of carbon emitted during its production, but also from the sheer volume produced.

Cement, a key ingredient of concrete, typically accounts for over 90% of its carbon footprint, largely the result of the chemical reaction that takes place when limestone is heated during its manufacture and the burning of fossil fuels required for this process. We are taking active steps to drive down the amount of embodied carbon in our concrete products by investing in the use of alternative fuels at our cement plants.

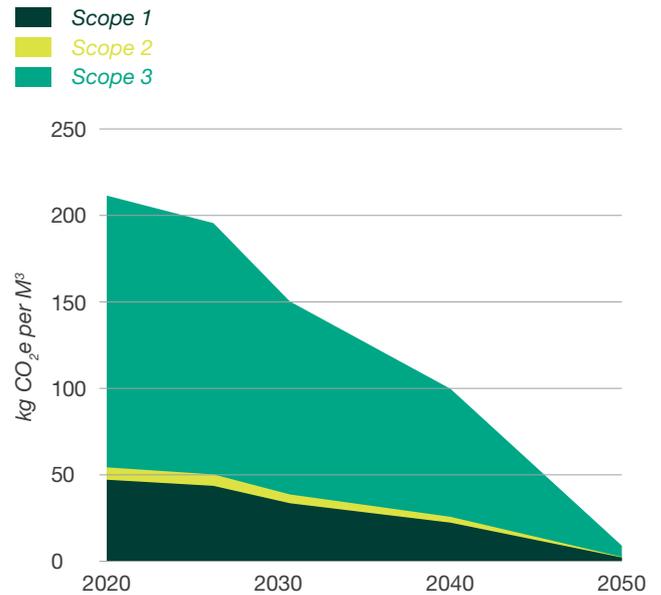
We're also minimising carbon in our concrete by reducing the amount of Ordinary Portland Cement in our mixes. Less cement means less carbon, so we're investing to enable us to use a greater range of alternative materials such as fly ash and calcined clays to replace the use of ordinary portland cement. This move towards lower carbon mixes has already saved over 1.2 million kg CO<sub>2</sub>e per year, while using recycled concrete as aggregate reduces waste, limits our reliance on virgin resources and aids the circular economy.

# READYMIX CONCRETE

## Percentage contributions to carbon footprint of stages in concrete production process



## Our net zero emissions path for concrete



# READYMIX CONCRETE

## OUR WORKSTREAMS IN ACTION

### LOW CARBON FUELS

Like many energy-intensive industries, we currently use a broad range of fossil fuels, all of which will need to be replaced with low and zero carbon alternatives. This will be no easy task, involving the development of new technologies and supply chains, the adoption of new skill sets and, in many cases, a complete transformation in the way we do things if we are to fully switch our business to low carbon fuels.

The most intensive use of fossil fuels is currently in our heavy mechanical equipment, asphalt burners and in our use of road transport. These are all areas which are energy intensive, hard to decarbonise and where low carbon alternatives are still in their infancy.

*“Our low carbon fuels workstream takes a twin-track approach. In the near-term, we’re looking at the roll out of mature technologies such as electric cars and vans, high-efficiency trucks and the use of biofuels alternatives to petroleum products. For example, we’re aiming to upgrade our 2,000-strong fleet of corporate cars and vans to electric vehicles by 2030. There are also opportunities to make increased use of alternatives to road transport such as rail or shipping.*

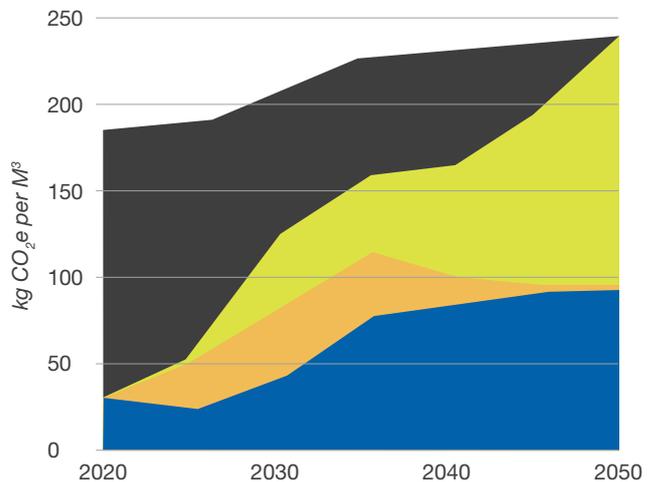
*Looking just over the horizon, we’re identifying and trialling near market-ready technologies such as hydrogen, green methanol and electric trucks. Our low carbon fuels workstream is at an exciting point - there are lots of opportunities out there for us to make a real contribution on our journey to net zero.’*



**Edern Lalanne**  
Supply Chain Director

### Modelled use of electricity and liquid fuels

- Fossil based fuels
- Hydrogen based fuels
- Biomass based fuels
- Electricity





# **BY 2025 WE WILL**

- INCREASE THE USE OF ALTERNATIVE MATERIALS IN OUR READYMIX CONCRETE MIXES BY OVER A THIRD**
- INCREASE BIODIESEL AND HVO USAGE TO OVER 25% OF READYMIX' CONSUMPTION**
- INTRODUCE ELECTRIC READYMIX TRUCKS INTO OUR LONDON CONCRETE OPERATIONS**

# CASE STUDY

## ECOPACT - THE GREEN CONCRETE

**We have invested in new technology and in research to develop our ECOPact range of concrete products.**

ECOPact is our low carbon concrete utilising blended cement, delivering a reduction in CO<sub>2</sub> compared to a standard CEM1 concrete mix of over 30%.

ECOPact Prime is a very low carbon concrete utilising higher blends of cements with supplementary cementitious materials and delivering a reduction in CO<sub>2</sub> of over 50%.

ECOPact PrimeAS also offers a 50% carbon reduction but has been developed through extensive product research to provide an active development of strength, making it the UK's first concrete to offer high levels of carbon reduction without compromising on performance.

ECOPact Max is our lowest carbon range of concrete, using alternative cement technology, such as alkali activators, to achieve an ultralow carbon concrete.

All of our ECOPact products can be upgraded to ECOPact Zero, our carbon neutral product. This achieves a 100% carbon reduction through carbon offsetting on the customers' behalf, should they choose to do so. Buying credits in carbon reduction projects can, as well as reducing carbon, bring wider local, social and biodiversity benefits. All of our carbon credits are transparent, additional and verified, to ensure the carbon reduction is traceable, real and permanent, and to provide assurance on their quality.



## LEADING THE WAY

### LONDON'S FIRST ELECTRIC-POWERED CONCRETE MIXER

We are introducing a state-of-the-art 26 tonne, zero emissions electric concrete mixer - only the second of its kind to operate in the UK and the first in London. The custom-built vehicle has a battery life of up to ten hours and will deliver our innovative ECOPact range of low carbon concrete to projects across the Capital, for the ultimate in green concrete supply. It's the result of a unique partnership between Aggregate Industries, Renault and McPhee Mixers based in Motherwell, Scotland who were responsible for building the unique electric mixer with a view to establishing a blueprint for the wider construction industry.

*"Our distribution network is one of the largest in UK construction and will be an important focus in our drive toward net zero. I'm incredibly excited that we are able to lead the way in electric concrete mixer innovation to distribute our green construction solutions to customers across the Capital with virtually zero carbon footprint."*

*As we look to the future, the global transition to EVs will play a central role in the world's wider decarbonisation aims and is something which must happen in construction at pace. The upcoming launch of this vehicle marks just the start of our transformational journey to supply sustainable construction materials to customers by the greenest means possible."*



**Lee Sleight**  
Managing Director Readymix



# PRECAST CONCRETE PRODUCTS

## WE MANUFACTURE AND SUPPLY COMMERCIAL AND DOMESTIC BUILDING PRODUCTS

These include ethically sourced natural stone and a range of concrete paving, blocks, kerbs and sustainable drainage products, suitable for urban and residential environments.

They include our low carbon Bradstone ECO range, with a carbon footprint reduction of more than 20%.

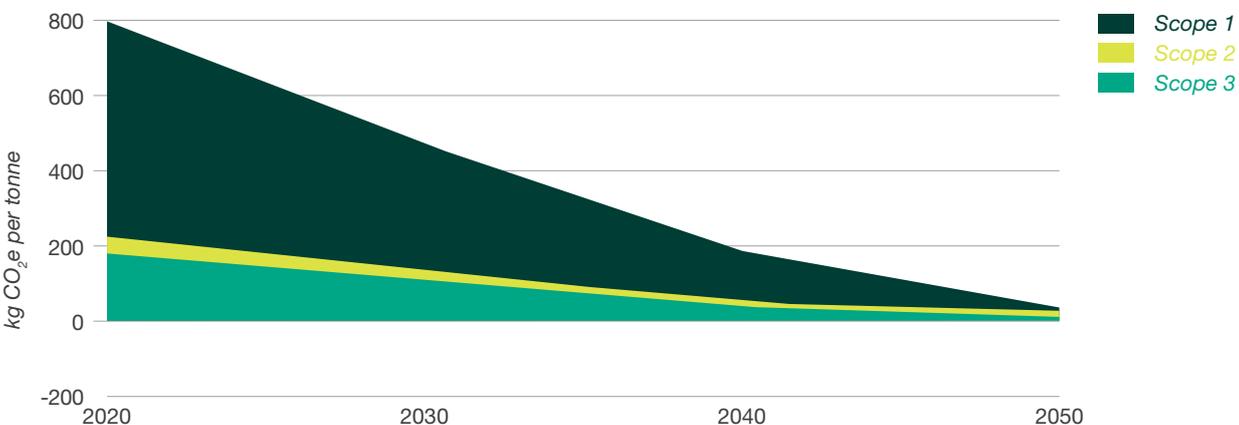
### Understanding our carbon footprint – Concrete products

Being primarily manufactured from concrete, 85% of the carbon footprint of our building products derives from their cement content. So here too, the use of alternative and recycled materials and our investment in non-fossil fuels is having a big impact in reducing their carbon footprint. The incorporation of lighter materials into our product range reduces overall weight, meaning larger quantities can be transported at the same time, helping to further reduce CO<sub>2</sub> emissions.

### Percentage contributions to carbon footprint of stages in cement production process



### Our net zero emissions path for concrete products



# PRECAST CONCRETE PRODUCTS

## OUR WORKSTREAMS IN ACTION

### ALTERNATIVE MATERIALS

Our Alternative Materials workstream investigates how low carbon materials can be incorporated into our products, reducing the use of virgin materials, lowering the associated carbon emissions and often improving performance. Our technical teams are working with an ever-growing range of materials and methods and are continually researching, trialling and rolling out new products which incorporate these lower carbon alternatives.

Key areas of work involve investigating how virgin raw materials can be substituted with waste and by-products from other industries in our cement and concrete production processes. These include Ground Granulated Blast-furnace Slag

(GGBS) from the iron and steel industry, Pulverised Fuel Ash (PFA), or 'Fly ash' from coal-fired power stations and construction demolition waste (CDW). The use of calcined clays as a substitute for clinker is another significant workstream. Elsewhere, we are implementing solutions to use recycled asphalt planings (RAP) to preserve valuable primary aggregates, reduce waste and improve the efficiency of project delivery.

*"Leveraging the support of our parent company, we've partnered with Low Carbon Materials in the Holcim Accelerator, a unique, intensive six-months acceleration program to foster innovation and collaboration in the construction*

*industry. LCM has developed OSTO – a carbon negative lightweight aggregate for concrete blocks, in which more CO<sub>2</sub> is permanently captured than is used in its manufacture, resulting in blocks which deliver a 100% reduction in embodied carbon. It's through innovative partnerships such as this that we're working to help make net zero construction a reality."*



**Veronika Elfmarkova**  
Innovation Manager



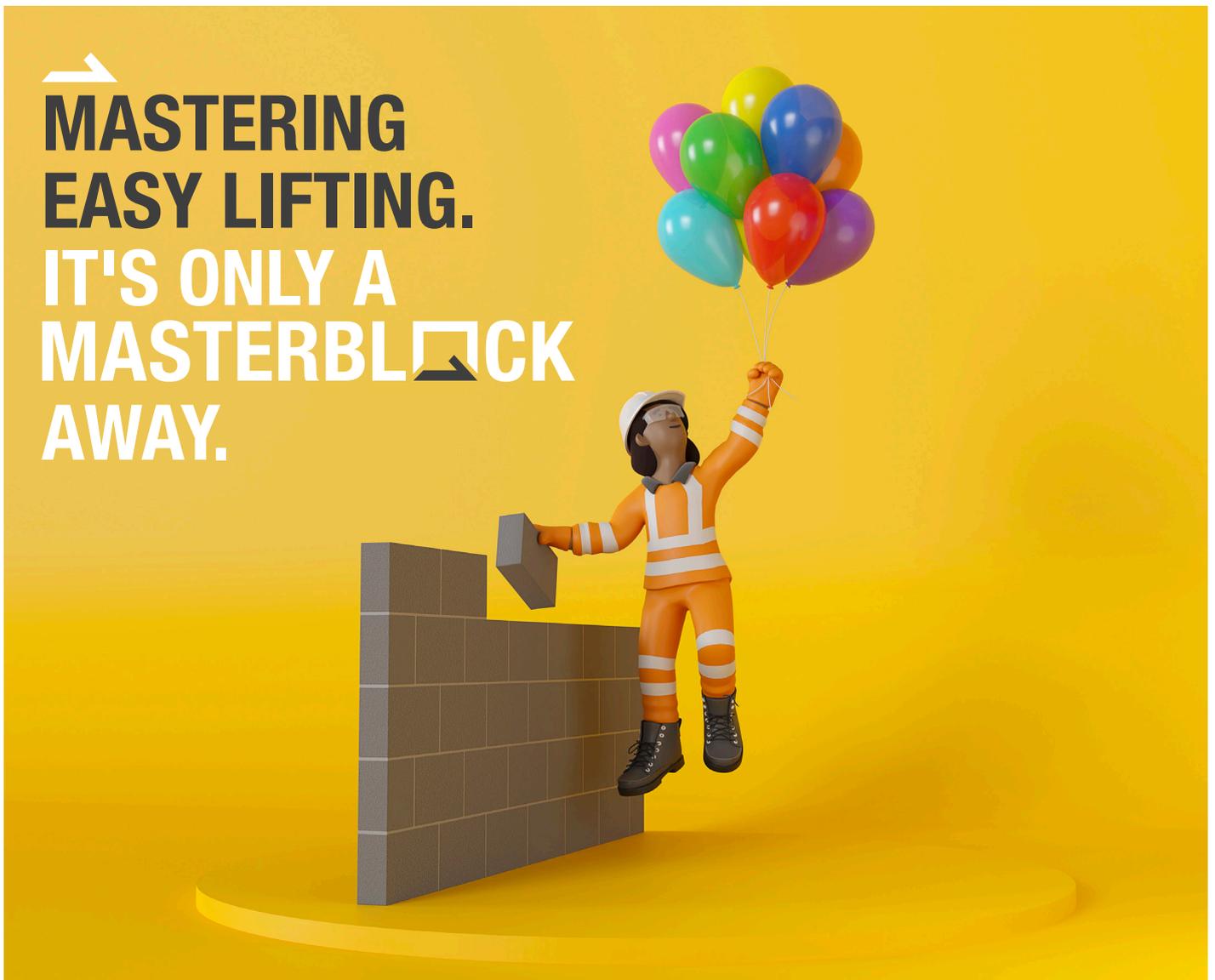
# **BY 2025 WE WILL**

- INCREASE OUR USE OF ALTERNATIVE MATERIALS IN OUR BUILDING PRODUCTS BY 40%**
- ELECTRIFY ALL OUR FORKLIFT TRUCKS UNDER 3.5 TONNES**
- INCREASE BIODIESEL AND HVO USAGE TO OVER 25% OF CONCRETE PRODUCTS' CONSUMPTION.**
- INSTALL SOLAR PV ON ALL SUITABLE ROOFS**

## CASE STUDY

### MASTERLITE PRO ECO BLOCKS

Our Masterlite Pro ECO concrete blocks are lightweight, high strength and robust, but we produce them with a 30% reduction in embodied CO<sub>2</sub> compared to our standard blocks. They contain a minimum of 20% non-primary materials, which are specifically selected for their environmental performance to comply with all European and UK technical standards. Furthermore, they are 100% recyclable to reduce the amount of material sent to landfill and with manufacturing plants across the UK, we can supply and deliver locally, minimising CO<sub>2</sub> emissions from transport.



MASTERING  
EASY LIFTING.  
IT'S ONLY A  
MASTERBLOCK  
AWAY.

## LEADING THE WAY PERFORMANCE AND SUSTAINABILITY GO HAND IN HAND WITH ECOPACT PRIME

Slough Multifuel, a new £400million Energy from Waste facility will provide a more sustainable waste management solution for the Greater London area, by processing 480,000 tons of residual waste, avoiding more than 147,000 tons of CO<sub>2</sub> and powering more than 100,000 homes each year. In line with the sustainable credentials of the project, the contractors chose our ECOPact Prime low carbon concrete.

A decision was made early in the process to adopt a slipform, or continuous pour, method to construct the huge main waste bunker to ensure it would be completely watertight. But this presented challenges because this type of concrete, with its high GGBS content, is not typically used in this type of construction, particularly on this scale, where it took seven days and nights of continuous pouring to complete. Nonetheless, the project was successfully completed, demonstrating that with the right blend of innovation and expertise, performance and sustainability can go hand in hand.

*“The project brief was certainly interesting! An eight-day continuous pour using a low carbon concrete that, by*

*design, with its high GGBS content, is not typically used in slipform construction. However, trials carried out over a two-week period at our Heathrow plant, followed by frequent batch testing and 24/7 supervision during the pour, ensured we could supply a mix design that was optimised for performance while also maintaining the sustainability credentials of the build. Overall, we were able to deliver a total carbon reduction of 42%, a saving of 608,951kg or 609 tonnes of CO<sub>2</sub>e in comparison to a standard slipform mix.”*



**Daniel King**  
Managing Director,  
London Concrete





# AFTER 2025 WE WILL

The actions we've listed up until 2025 are just part of a long-term process of change. The workstreams that have been launched as part of this strategy will look to embed low-carbon technologies across the business to deliver the net-zero future we are aiming for. The long-term ambitions within this strategy include:

- **START TO CAPTURE AND PERMANENTLY STORE CO2 FROM OUR CAULDON CEMENT PLANT BY 2030**
- **REDUCE OUR UNBLENDED GAS OIL USAGE BY OVER 90% BY 2035**
- **INCREASE THE USE OF LOW-CARBON FUELS SUCH AS HVO, BIODIESEL BLENDS, RDME AND HYDROGEN TO OVER 50% OF OUR FUEL-MIX BY 2035**
- **INCREASE THE USE OF LOW CARBON MINERALS & WASTE MATERIALS SUCH AS CALCINED CLAYS, FLY ASH AND CONSTRUCTION DEMOLITION WASTE BY OVER 40% BY 2030**
- **BY 2040 TO USE OVER 2,000 LOW-CARBON TRUCKS SUCH AS ELECTRIC OR HYDROGEN WITHIN OUR WIDER FLEET NETWORK.**
- **TO PRODUCE OVER 200GWH PER YEAR OF CLEAN ELECTRICITY FROM RENEWABLE POWER GENERATION BY 2035.**

# JOIN US ON OUR JOURNEY

**WE ARE ON OUR JOURNEY TO BECOMING A NET ZERO CARBON BUSINESS BEFORE 2050. OUR COMMITMENT TO FINDING SOLUTIONS TO THE CHALLENGES THIS BRINGS IS DRIVING US TOWARDS ACHIEVING OUR AIM TO BE THE UK LEADER IN INNOVATIVE AND SUSTAINABLE BUILDING SOLUTIONS.**

If we achieve our vision, not only do we protect the future of the world we live in, but we also support the success of our clients, customers and partners. We recognise that the most effective route to achieving net zero carbon is one of collaboration, partnership and shared learning – and we want you to join us on our journey.

## YOUR CARBON REPORT

We've created Your Carbon Report, the first carbon reporting tool of its kind, to help you make your own robust commitment to sustainability.

Each bespoke report gives you accurate carbon data from across our product ranges, detailing the carbon embodied in the products you purchase from us. The data we provide is robust and detailed, providing you with the flexibility to interrogate carbon data from 'cradle to site'. The data is calculated inline with the principles of the European EN15804 standard and our carbon values are a mixture of our own primary data and industry values, all of which have been verified by respected environmental consultants Circular Ecology.

With Your Carbon Report, we give you the full picture to identify where carbon savings can be made in the future and we'll work together to support further opportunities to lower the carbon footprint of any project.



**YOUR CARBON REPORT**

Product Name	Project Name	Units	Units Stocked	Quantity	Carbon (kg CO <sub>2</sub> e)	kg CO <sub>2</sub> e/m <sup>2</sup>
AGGREGATE INSULATION	AGGREGATE INSULATION	100	100	100	100	100
AGGREGATE INSULATION	AGGREGATE INSULATION	200	200	200	200	200
AGGREGATE INSULATION	AGGREGATE INSULATION	300	300	300	300	300
AGGREGATE INSULATION	AGGREGATE INSULATION	400	400	400	400	400
AGGREGATE INSULATION	AGGREGATE INSULATION	500	500	500	500	500
AGGREGATE INSULATION	AGGREGATE INSULATION	600	600	600	600	600
AGGREGATE INSULATION	AGGREGATE INSULATION	700	700	700	700	700
AGGREGATE INSULATION	AGGREGATE INSULATION	800	800	800	800	800
AGGREGATE INSULATION	AGGREGATE INSULATION	900	900	900	900	900
AGGREGATE INSULATION	AGGREGATE INSULATION	1000	1000	1000	1000	1000

AGGREGATE INSULATION



# JOIN US ON OUR JOURNEY

## OUR TECHNICAL EXCELLENCE ENSURES YOUR SUCCESS

Our commitment to effective Early Contractor Involvement ensures we work alongside our customers to understand their requirements, offering value engineering and low carbon solutions at all stages, from design through to completion.

We are champions for carbon reduction in construction. Our people are leaders and influencers, challenging current material standards and production methodologies, engaging with government and driving our industry towards net zero.

Our cutting-edge R&D facility is staffed by a multi-disciplined, professionally qualified team of engineers and scientists with environmental, biology, earth science and engineering backgrounds, who have published over 70 peer reviewed papers in journals around the world.

Our people are leading the way, ensuring we are at the forefront of sustainable materials technology, for the benefit of our customers and for all.

## CONTACT US

This is an evolving strategy and is monitored and reviewed by our Executive Committee, whose members take collective responsibility for driving the process of fully integrating its principles into the way we do business.

We will continue to collaborate with our stakeholders and keep them updated on how we're progressing. We will publicly report on our performance, against a range of measures, on an annual basis.

We welcome any feedback which can be submitted by emailing us at:

[sustainability@aggregate.com](mailto:sustainability@aggregate.com)

## EXTERNAL STANDARDS & ACCREDITATIONS

ISO 14001 (Environmental Management standard)

ISO 50001 (Energy Management standard)

ISO 9001 (Quality Management)

BES 6001 (Responsible Sourcing)

ISO 44001 (Collaborative working)

PAS 2080 (Carbon Management in Infrastructure)

ISO 45001 (Health & Safety)

## SUPPORTING POLICIES & PLANS

For full policy documents [click here](#)