Marshalls

Climate action

Marshalls plc
Climate Action Report
2021

The bottom line is that we must reach net zero by 2030. And in order to do this, we all have to play our part.

Chris Harrop OBE
Group Sustainability Director

The statistics on climate change are stark. In their 2021 report, the IPCC confirmed that climate change is widespread, rapid and intensifying. Regardless of our efforts globally to cut carbon, the seas will continue to rise, and it is now likely that we will reach or exceed 1.5°C in the next **10 years**.

The bottom line is that we must reach net zero by 2030. And in order to do this, we all have to play our part.

It's not going to be easy but it's imperative that we start making big decisions. Unfortunately, we're past taking small steps – this is about big changes.

Marshalls is taking this very seriously and that's why we have committed to being net zero by 2030.

Reaching net zero will need governments, businesses and people to play their part. The UK government has set ambitious targets and that's a great start. As a business, we know we have a big role to play in helping to meet these targets and tackling climate change.

Marshalls has long been a responsible business doing the right things, for the right reasons, in the right way. We first started reporting our carbon emissions data in our 2004 so for us, taking action on climate has been part of our strategy for some time.

Our mitigation strategy has centred on taking real action to reduce our emissions. Since 2008, we have reduced our carbon footprint by 50%, using both absolute and intensity measures.

We have programmes in place for cement reduction in our mix design and we were the first in our industry to publish carbon footprints for every single one of our products. The sustainability space is beset with greenwash and a lack of standardisation so we're proud to be the first in our industry to have our carbon emissions targets approved by the Science Based Targets initiative.

Adaptation is a big focus for us too, as it should be for our suppliers and our customers. We have analysed the transition and physical risks associated with climate change, and we are very clear about the issues that are material to our business. We have recently committed to 1.5°C scenarios which will enable us to deliver the carbon reductions necessary to reach our ambitious net zero targets.

For over two decades, I've been championing sustainability in business and it has never been more important than right now. In 2017 I visited the North Pole to see the consequences of climate change for myself, and what I saw only strengthened my resolve. The memory of melting ice caps and the changing polar landscape leaves no doubt in my mind that we have an urgent and pressing need to turn back the tide of man-made environmental damage. The team at Marshalls are equally committed and together, we're making great strides.

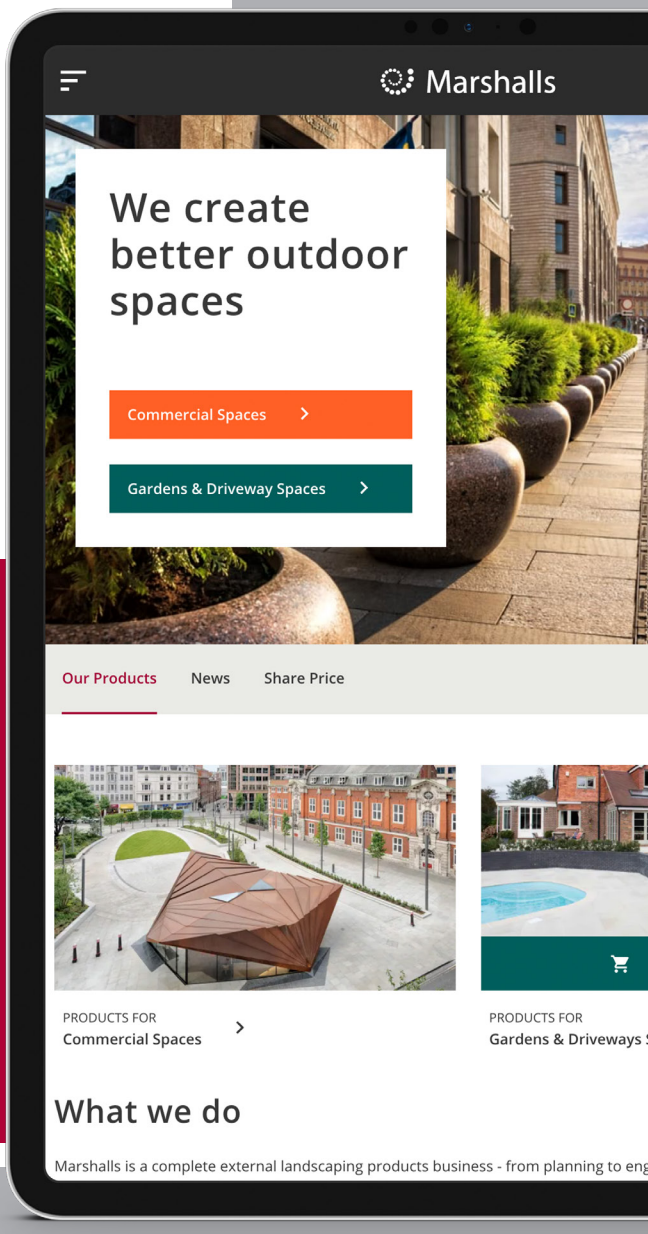
This is Marshalls' first Climate Action Report. Designed to complement our Annual Report and our Sustainability Report, it will contribute to our TCFD disclosure by looking more closely at our climate change strategy.

Contents

Science-based targets
Our carbon reduction programme has been approved by the Science Based Targets initiative.

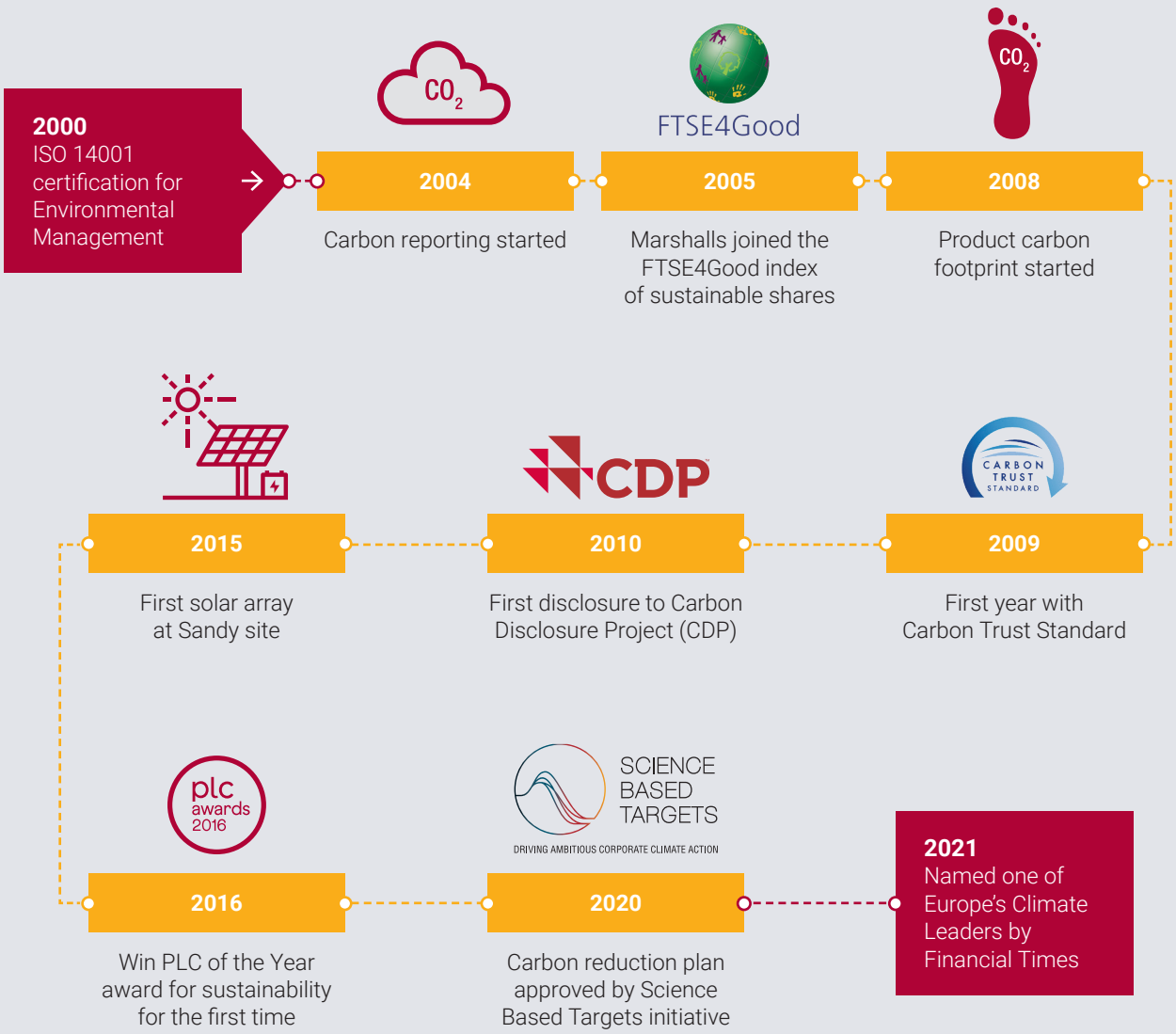
We commit to reduce Scope 1 and 2 greenhouse gas emissions 40% per tonne of production by 2030. For Scope 3, we also commit that 73% of suppliers by emissions, covering purchased goods and services and upstream transport and distribution, will have science-based targets by 2024.

In 2021, we upgraded our commitment to meet the 1.5°C Net Zero requirement where Scope 1 and 2 greenhouse emission reductions per tonne of production will fall by 50% by 2030. Scope 3 commitments remain as above.



Our sustainability journey

Tackling climate change and being a responsible business is the only way to operate as a business. This isn't new for us – we've been doing it for over 20 years.



Marshalls' Climate Challenge

From the extraction of raw materials to end of lifecycle disposal or recycling, all construction products have some impact on the environment. Even ours.

Carbon dioxide (CO_2) accounts for 65% of total global emissions, making it the major driving force behind the growth in greenhouse gas emissions. At Marshalls we believe that we have a duty to ensure that everything we do has a positive impact on the planet we share – which is why we took on the challenge of driving down the amount of CO_2 we create.

We have been reducing our emissions for a long time. We published our first carbon data back in 2004 and, since 2008, we have reduced our total carbon footprint by 50%. Our ongoing commitment is to reduce our emissions and be net zero by 2030.

Beware greenwashing

Like us, many businesses have started on their own carbon reduction journeys. As such, we're seeing brands making big announcements and low carbon claims, which is really positive. However, there is potential for greenwash here.

We want people to challenge the environmental credentials of the products they want to buy. Are there hard, verifiable facts behind any low-carbon claims? Is there data to back up those claims? If there is, where has it come from? And who has verified that data? If there's any doubt ask the manufacturer for proof.

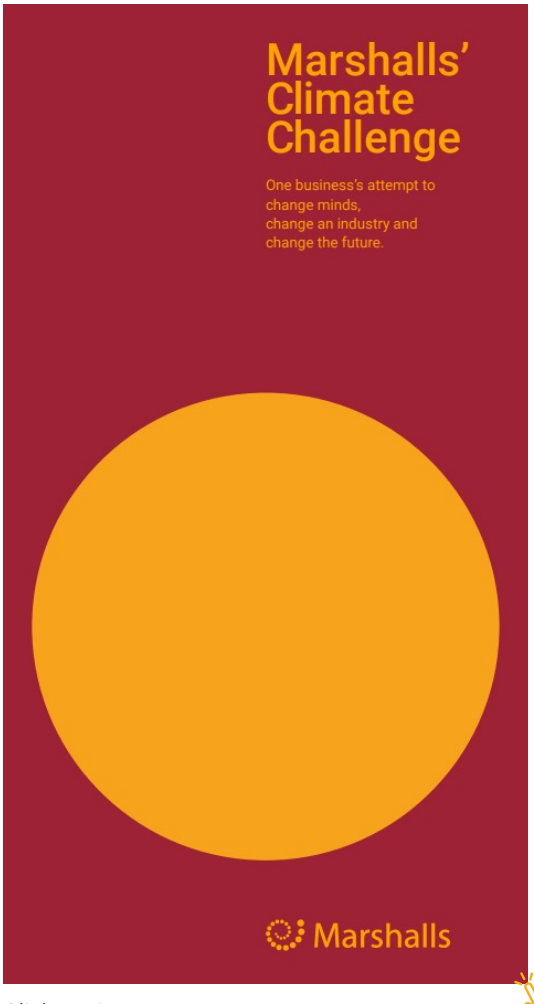
We wrote the book on reducing carbon for our sector

Given our long experience in monitoring, managing and minimising our emissions, we like to think we wrote the book on how a business can reduce its carbon footprint.

And now, we have.

Our ebook, Marshalls' Climate Challenge, sets out the scale of the carbon reduction challenge for our planet, our country, our industry and also for us as a business.

More importantly, our ebook issues a challenge for our competitors: show us how serious you really are by bettering our carbon performance to 2030 and beyond. Publish your commitments, report your results and beat us to net zero. Show us – and the whole industry – that you're as serious about addressing the Climate Challenge as we are. Watch our **video** to find out more.



Click to view

Impact of climate change

In order to define substantive impacts on the business from climate change, we have a formal ongoing process to identify, assess and analyse risks and opportunities. Risks and opportunities are discussed and actioned at different levels of the organisation.

The Board

The Board provides leadership and direction for the Group, ensures appropriate systems and processes are in place to monitor and manage Group risk, and is responsible for financial performance and corporate governance.

The **Energy and Climate Change Policy Statement** is reviewed by the Board and signed by the CEO.

Marshalls' **CEO** has overall responsibility for climate-related issues.

The **Audit Committee** has delegated responsibility from the Board to oversee risk management and internal controls. It reviews the effectiveness of the Group's risk management and internal control procedures, and monitors the effectiveness in the internal audit function and the independence of the external audit.

Executive Management

Marshalls' **Executive Team** is responsible for operational management and management of climate-related risk. The team identifies and reviews matters for recommendation to the Board.

The ESG Committee reports to the Group Sustainability Director. It was set up to bring together key decision makers in the business into one committee to ensure a joined-up and consistent approach to all ESG initiatives. Working together collaboratively, the Committee makes decisions, provides advice and builds proposals for the Executive Team and the Board.

Directors

The Group Sustainability Director provides strategic input and vision to the management of climate risks and opportunities.

The Sustainability Improvement Director reports to the Group Operations Director and has group responsibility for delivering the sustainability strategy and plan at operational level.

Divisional Directors report to the Executive Team and are responsible for operating all manufacturing and operations across the Group.

The Procurement Director reports to the Group Operations Director. The role sits at Group level and manages both upstream and downstream aspects of the operation.

The Logistics Director reports to the Group Operations Director. The role sits at Group level and operates Marshalls' fleet which delivers the majority of the finished products to the customer.

The Board

The annual Board strategy review and business planning process looks at competitor activity and the external environment, including climate change. The CEO update on ESG for the Board is now a standing agenda item at Board meetings.

Science-based targets

In March 2020, our carbon reduction targets were approved by the Science Based Targets initiative. This was based on our work with the Carbon Trust in 2018/19, where we looked at climate change impacts in order to develop our science-based targets.

As part of this work with the Carbon Trust, a workshop was held with the Board about climate change risk, impacts and policy and specifically looking at physical impacts, regulation, reputation and market dynamics.

We also participated in the Carbon Trust Climate Leadership Framework, part of which looked at identifying and moving ahead of potential operational, financial and reputational risks and gaining an understanding of future business growth opportunities.

Group Risk Register

There is a formal ongoing process to identify, assess and analyse risks and those of a potentially significant nature are included in the Group Risk Register.

The register looks at likelihood, financial impact and control effectiveness. All risks are aligned with the Group's strategic objectives and each risk is analysed for impact and likelihood to determine exposure and impact to the business and the determination of a 'gross risk score' enables risk exposure to be prioritised. The register also looks at the financial impact of reputational risk.

Though the register is maintained by the Executive Team, it is compiled by managers from all areas of the business. One of the register's sections is Environment, though climate change also impacts on other sections including Economic and Ethical (environmental link to human rights).

The Group Risk Register is reviewed and updated by the Executive Team at least every six months and presented to the Board and Audit Committee for approval.

The overall process is the subject of regular review. Risks are recorded with a full analysis and risk owners are nominated who have authority and responsibility for assessing and managing the risk.

Annual reporting

In our 2021 Annual Report, we outlined risks and opportunities which includes climate-related risks and opportunities. The Board determines the Group's approach to risk, its policies and the procedures that are put in place to mitigate exposure to risk.

We also updated our first materiality matrix for sustainability/ESG priorities, which included impact of climate change as high interest to stakeholders and major impact to the business.

Metrics and targets

Having reported publicly on carbon data since 2004, our approach to reporting focuses on providing clarity and adhering to mandatory requirements and best practice.

We continue to report our carbon and energy use according to SECR (Streamlined Energy and Carbon Reporting) and according to TCFD (Task Force on Climate-related Financial Disclosures) recommendations for the first time.

Metric	Unit	Description
Absolute Scope 1 (market based)	Tonnes CO_2e	Scope 1: fuel usage including diesel, petrol, gas oil, LPG, kerosene and natural gas. Base year: 2018
Absolute Scope 2 (location and market based)	Tonnes CO_2e	Scope 2: electricity usage. Base year: 2018
Intensity Scope 1 and 2	Kg CO_2e/ tonne of production	Relative emissions as a proportion of production output, including transport activities. Base year: 2018
Energy	kWh	Energy performance reported as absolute and intensity (per tonne of product).
Renewable energy	kWh	Self generated energy from solar arrays at site.

Transition risks

Transition to a low carbon economy will bring challenges. Identifying and quantifying these transition risks will enable us to better prepare the business for the impact of climate change.

Key: Low Medium High

Type	Risk	Impact
Policy and legal High likelihood Short-medium term	We mitigate corporate, legal and regulatory risks with our centralised legal and other specialist functions, the use of specialist advisers and ongoing monitoring and training. We also have a formal sustainability strategy focusing on mitigation and adaptation and we employ compliance procedures, policies, ISO standards (including ISO 14001 and ISO 50001) and independent audit processes which seek to ensure that regulatory and compliance procedures are fully complied with. We are also aware of our commitments to climate-related regulations including the Climate Change Levy, SECR, ESOS Phase 3, Biodiversity Net Gain and mandatory TCFD reporting. For future reporting, we are closely monitoring developments in biodiversity reporting with TNFD (Taskforce for Nature-related Financial Disclosures), changes in UK and global sustainability reporting standards, changes in fuel prices, and UK legislation changes including the Plastic Packaging Tax and the Environment Act 2021.	↑
Technology Medium likelihood Short-medium term	Threat from new technologies and business models due to increased pace of digital change is relevant because any failure on our part to not embrace new technology could lead to reduced business efficiency and reduced competitive advantage. The nature of the risk is that there could be a reduction in demand in traditional products and the associated reduction in volumes. The ongoing diversification of the business, the continued development of the Marshalls brand and the focus on new products and greater manufacturing efficiency continue to mitigate this risk. Significant Research and Development is committed to developing new sustainability-driven products as part of our adaptation strategy.	→
Market Medium likelihood Short-medium term	Marketplace impacts directly related to climate change include adverse impact on material costs and reduction in production volumes and associated energy efficiency. We mitigate these risk factors by closely monitoring trends and lead indicators, investing in market research and product development, maintaining a national network of manufacturing and distribution sites to reduce product travel time/distance to the customer, and focusing on brand, quality, service, reliability and ethical standards that differentiate Marshalls from our competitors. There is also a risk of competitors developing and manufacturing lower carbon alternative products and launching in the marketplace before us.	→
Reputation Medium likelihood Short term	Marshalls has a strong brand which could be financially impacted by reputational loss. The risk of prosecution would lead to reputational loss and with an increasing penalty regime, a financial impact if found to be failing in our compliance. Any failings on mandatory reporting also threatens the company's reputation. Key risk indicators are increased regulatory and compliance requirements, integration requirements for new acquisitions, and significant increases in the penalty regime for environmental incidents. The changing landscape of governance, regulation and reporting continues to increase risk in this area.	→

Physical risks

Physical risks that result from climate change can be acute or chronic. The need to understand and mitigate these risks is clear for us, both at site and global level.

Key: Low Medium High

Type	Risk	Impact
Acute Medium likelihood Medium-long term	Acute physical risks are event-driven and include extreme weather events such as flooding. Key risk indicators for Marshalls are prolonged periods of bad weather as well as snow, ice and floods which can make ground working difficult or impossible at sites. In the short term, we have analysed every Marshalls site, using Verisk Maplecroft data on climate risk including heat stress, water stress and sea level rise. We did this in order to assess climate change vulnerability at site level. Key risks identified by the analysis are extreme rainfall and high winds. Rainfall can cause water tables to rise in quarries or they might fill with rain and run-off water, which then require pumping. It can also make on-site transport operationally difficult. Many of our sites are situated on top of hills, which can make them more vulnerable to high winds. We mitigate acute physical risks by ongoing analysis of weather data, site-based climate risk analysis, and product development. The longer-term implications of climate change give rise to the transition risk of addressing the challenges quickly enough.	↓
Chronic Medium likelihood Medium-long term	Chronic physical risks are longer-term changes in weather patterns that may cause sea level rise or chronic heat waves. For Marshalls, this is likely to impact on security of raw materials. The development of resilience strategies for climate change is a key element of our Climate Change Policy and we mitigate this risk by collaborating with suppliers to ensure any supply risks are minimised. We continue to closely monitor the situation and we're conscious that chronic physical risks will in the longer-term have an impact on our supply chain and human rights. We have begun to work on our own human rights and environmental due diligence processes to address this.	↓

Case study
Prolonged rainfall patterns disrupt the demand for landscape products. For Marshalls, this means a reduced demand for domestic products such as Driveline (an affordable block paving for driveways) which is not as easy to install in wet conditions. Exceptionally cold weather, rainfall and snow can delay the installation of landscaping products by impacting on the supply chain.

Marshalls' data analysts look at weather data in order to produce monthly analysis on the effect of dry and wet days/weeks and their impact on sales.

Opportunities

Though climate change brings risks to our business, it also offers opportunities for us to explore. We are already looking at ways we can develop our products and make our processes more efficient.

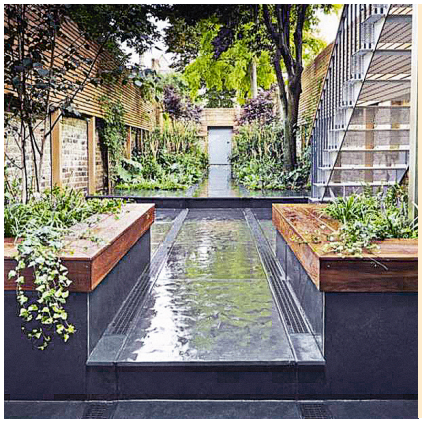
Key: Low Medium High

Type	Opportunity	Impact
Resource efficiency	Marshalls operates a fleet of vehicles as well as company cars. Fuel efficiency and reducing pollution are two major areas of focus. The priority is to ensure we are investigating alternative modes of transport and reducing our reliance on petrol/diesel as fuel of choice. We are looking into electric cranes, fork lift trucks and company cars, investigating different fuels and different modes of transport including barge/canal. There is opportunity to employ more efficient ways of manufacturing our products. This includes cement substitution and innovations in curing processes – both of which would have a positive impact on carbon reduction. One such example is the work we've done on upgrades to our kerb and edging presses, which have resulted in more efficient processes, increased production of units and energy efficiency.	→
Energy source	We have invested in solar energy and we now have two sites with solar arrays generating electricity. We have also been looking to engineer gas oil out of the business and replacing it with lower emission alternatives. As a business, we currently use different fuels for heating, curing, our fleet and our manufacturing processes. In order to achieve our carbon reduction targets, we are focusing on alternative fuels and operational control of the heating of sites. We have been doing this by upgrading or replacing equipment and introducing lower emitting fuels such as LPG (liquified petroleum gas) and natural gas, as well as introducing building management systems. We have also started investigating hydrogen and HVO (hydrotreated vegetable oil).	↑
Products and services	Planning regulations aimed at tackling the effects of flooding caused by climate change encourage the use of permeable paving or sustainable urban drainage solutions (SuDS). With precipitation patterns changing, having a product offering that mitigates some of the effects of climate change is an opportunity. We developed a permeable paving product offering some years ago and we continue to invest in developing this further. Driven by a combination of stronger awareness and stricter guidelines, consumers want to manage their own carbon footprints by choosing low carbon products or seek to offset their carbon impact, so reducing their own impact on climate change. Consumers can choose Marshalls' products such as Priora (low maintenance permeable driveway solution) over competitor products. Our water management product offering offers an opportunity to give our commercial and domestic customers a real solution to increasing flooding events.	↑

Water management and infrastructure design are just two areas where we are seeing opportunities develop and ways in which we can have a positive impact on the environment.

Key: Low Medium High

Type	Opportunity	Impact
Markets	Marshalls' brand is strongly based on sustainability credentials. With more interest from shareholders and investors, the ESG agenda has gained momentum. The opportunity is in strengthening our position in order to be an attractive investment proposition. There is a potential negative impact on Marshalls' business if we do not continue to engage with ESG ratings agencies and ultimately investors. In 2019, we were engaging with the FTSE4Good assessment process and disclosing to the Carbon Disclosure Project (now CDP). The situation has changed and just three years later, we are now engaging with ten ratings agencies, in order to provide them with information that is material to the investor community. In 2021, we have remained a FTSE4Good constituent, improved our CDP score and retained our AAA score with MSCI.	→
Resilience	Through the work we have done for setting science-based targets and looking at different climate scenarios, we have developed a mitigation and adaptation strategy that focuses on our road to net zero. Being resilient means that we consider risks and opportunities related to climate change – and what that means for our business. Materiality is key here. This is about looking at the challenges that will face our industry but also looking at ways we can harness our expertise to provide our customers with the solutions to combat the impact of climate change. A full sustainability materiality matrix can be found in our Annual Report.	↑



Case study

Extreme weather events caused by climate change have a serious impact on flooding which in turn affect drains. We have identified excessive rain as a risk to the business, however our ability to develop products that tackle flooding has also offered an opportunity.

Our Priora range of permeable paving products mitigate many of the adverse impacts of stormwater run-off on the environment. Our approach enables us to create drainage systems that provide natural water quality treatment, encourage infiltration, reduce the impact of peak flows and minimise impact on local habitats of both communities and wildlife.

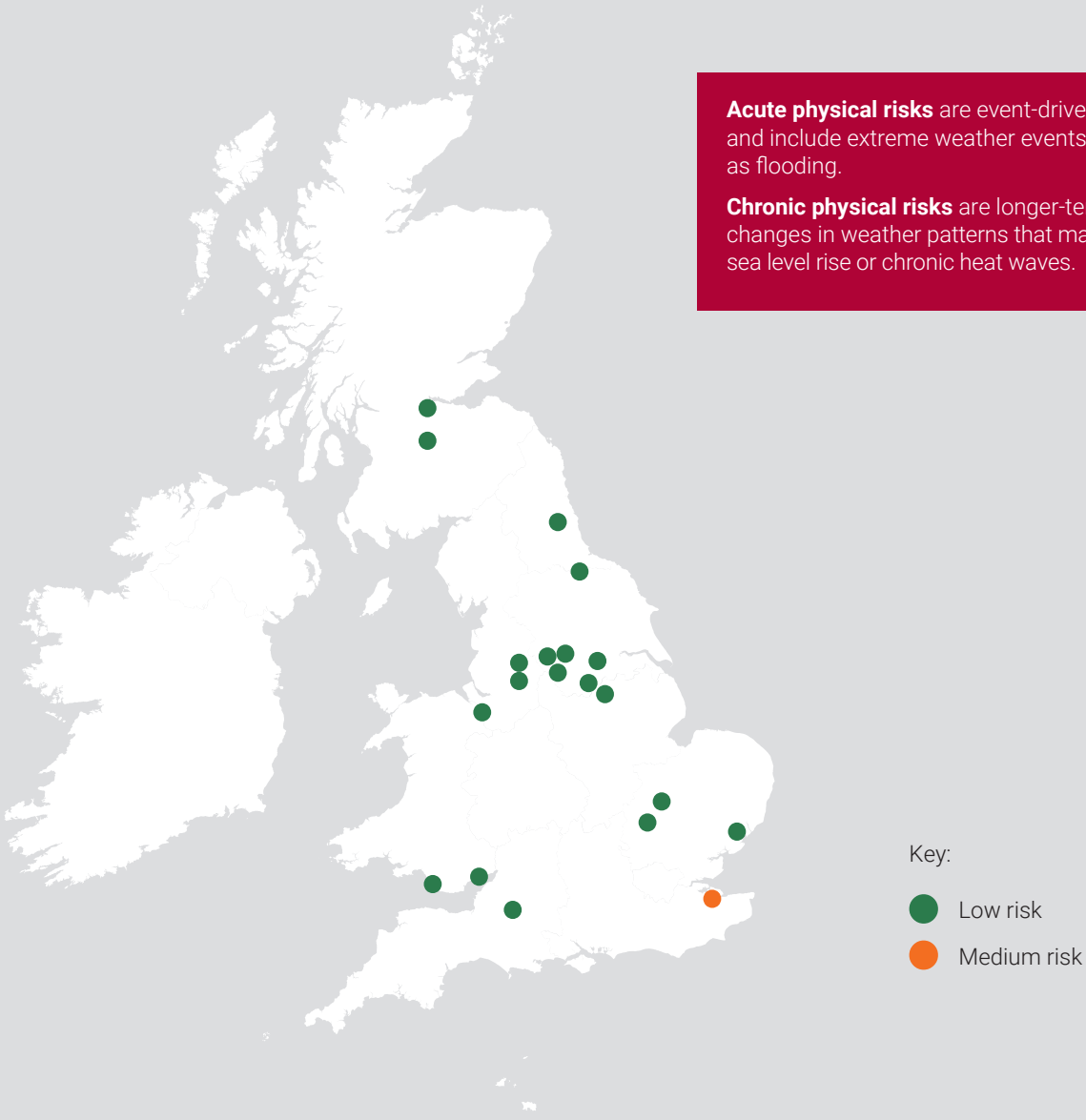
Climate Risk Site Analysis

Since 2020, we've been using Verisk Maplecroft data to assess risks related to climate change, at site and regional level. Using the data, we can identify both acute and chronic environmental risks. This enables us to analyse the level of risk and put in place measures to mitigate any risk. The data analysis also gives us a long-term picture of the sites which are in higher risk areas, for example those in flood-risk or sea level rise locations.

The map represents UK sites in 22 locations. We chose sites producing over 50,000 tonnes per year (2020 data) in order to give a wide representation and geographical spread.

We have no stranded assets and sites that we deem to be low to medium risk are business manageable. Higher risk sites would be seen as business critical. Based on the data, the vast majority of our sites are low risk.

As the data incorporates both acute and chronic environmental risk, it does tend to show a longer term picture. In the short term, and when looking at the raw data for acute physical risk, only one site is considered medium risk. For chronic physical risk, this number increases with the majority of sites as medium risk. This is due to the nature of chronic physical risk and its link to the long term impacts of climate change.



Towards net zero

Net zero	Marshalls commits to being net zero by 2030.
Scopes 1 and 2	Our original well-below 2°C science-based target was to reduce Scope 1 and 2 greenhouse gas emissions 40% per tonne of production by 2030 from a 2018 base year. Our new 1.5°C commitment is for a 50% reduction.
Scope 3	As part of our science-based targets, we commit that 73% of suppliers by emissions, covering purchased goods and services and upstream transport and distribution, will have science-based targets by 2024. Scope 3 emissions reporting will be an area of focus for the 2022/23 reporting cycle.
Energy	Our target is to have a 2.7% reduction year on year of energy intensity (kWh per tonne of concrete). Every Marshalls site has been assessed for solar energy capability. Further to our second installation of solar arrays at our Sittingbourne site, we commit to undertake one major solar project per year.
Fleet	We continue to upgrade our fleet to Euro 6 standard, with a target of all vehicles upgraded by 2022. As part of our net zero commitment, we are investigating electric fork lift trucks and company cars.
Biodiversity	In 2022, we commit to putting greater focus on biodiversity.
Water	We continue to monitor our water performance and commit to having product water footprints by 2023.

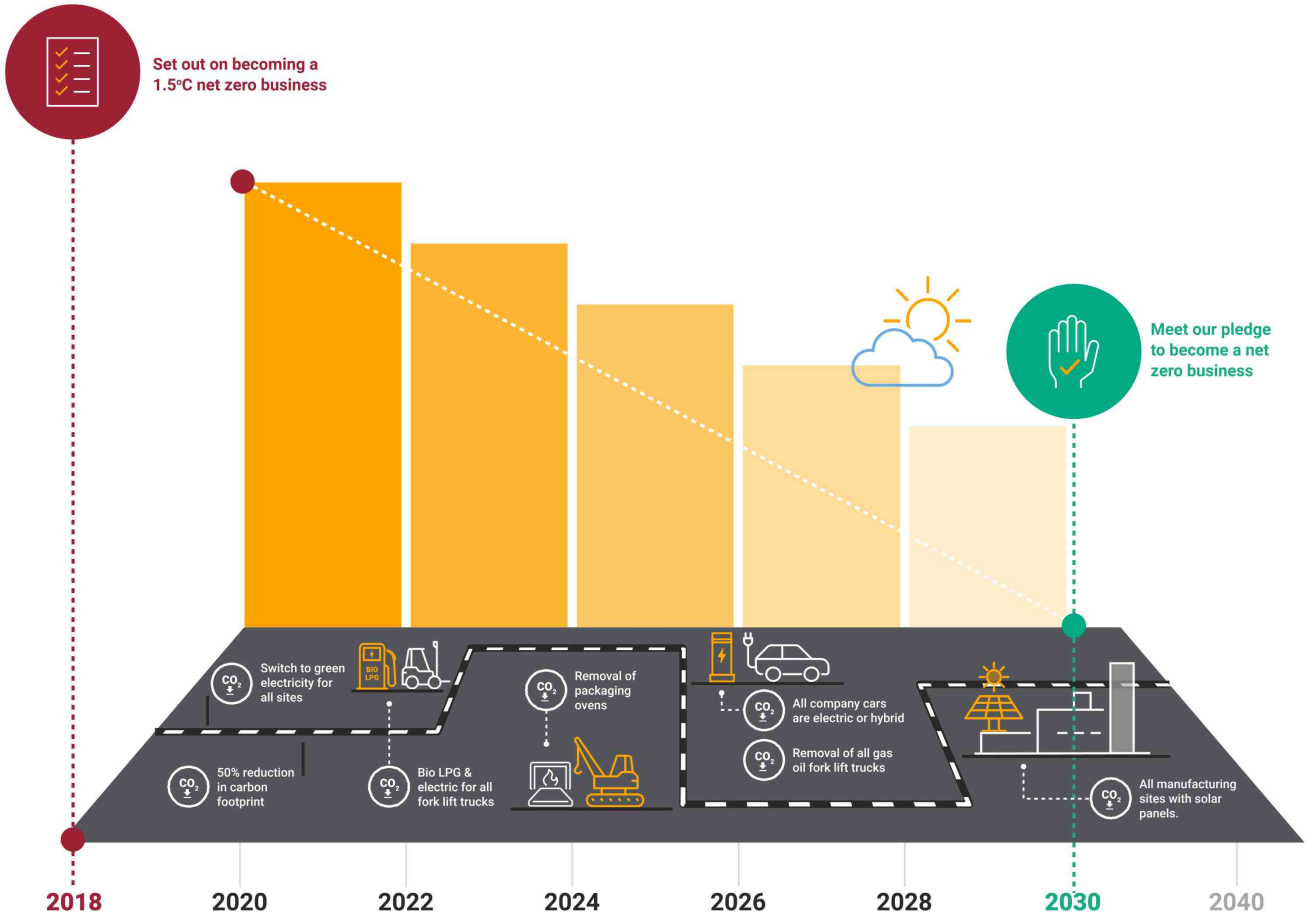
Roadmap to net zero by 2030

It's clear that climate change is already having an impact on our planet and on our lives. It's up to all of us to mitigate the risks and put in place the measures needed to adapt to the opportunities open to us.

Our roadmap to net zero is consistent with our science-based targets and a 1.5°C pathway. Our activities are based on our 2018 baseline and the significant steps we will be taking to reach net zero - including the removal of packaging ovens which will help with the reduction of plastic, engineering high emission fuels out of our processes, and the permanent removal of any residual emissions.

Our Journey to Net Zero

We pledge our commitment to become a net zero business by 2030.



Mitigation and adaptation

We're no longer at a point where we can prevent climate change - it's about mitigating the worst effects of climate change and adapting to a new world.

Working to net zero requires us to look at how our products contribute to a low carbon future. Our adaptation and mitigation strategy focuses on our products, our processes and our target to reach net zero by 2030.

As a business with over 130 years of experience, Marshalls is well placed to design, manufacture and source products that can adapt to climate change. We continue to invest heavily into research and development – and this includes sustainable product development.

Mitigation

Our mitigation strategy focuses on delivering our science-based targets for carbon emissions reduction and efficiency in our manufacturing processes. For products, it's about reduced carbon emissions and mix design.

Our concrete bricks provide an alternative to clay bricks and a viable way of meeting our UK new housing targets and climate change obligations. The carbon savings are significant, with 28% less carbon produced in the cradle to gate boundary of concrete bricks.

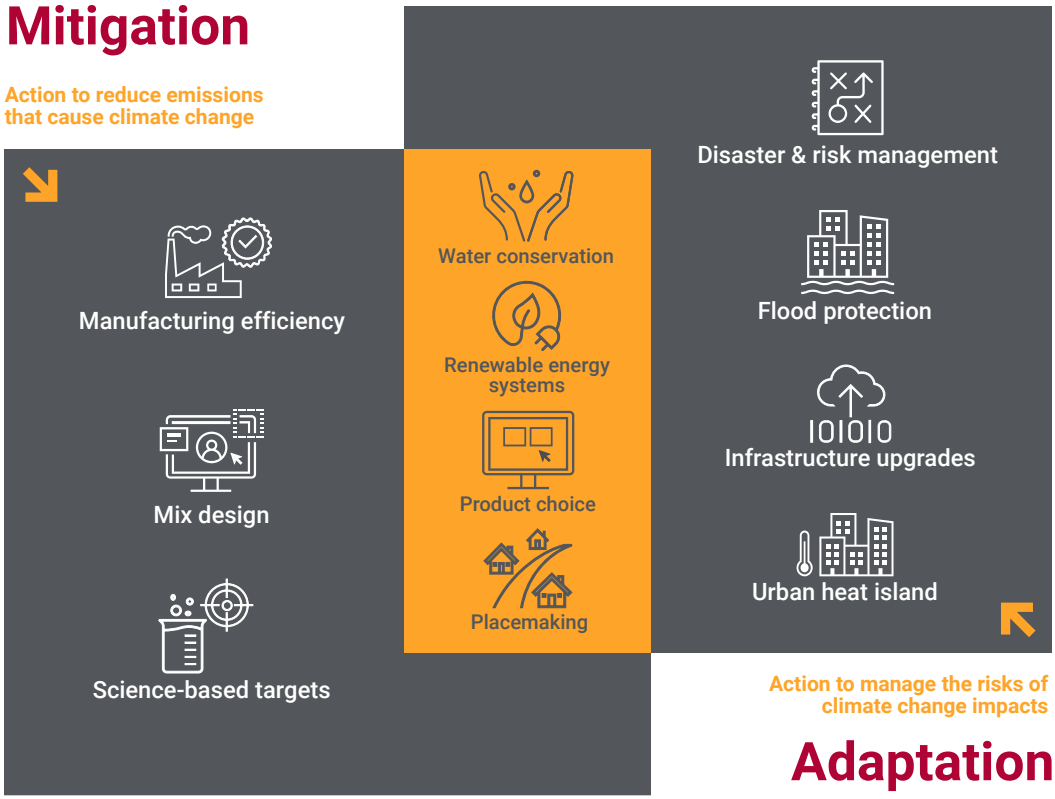
Our concrete pipeline systems are a lower carbon alternative to plastic pipes. With a proven life of over 120 years in normal groundwater conditions, our systems are manufactured from responsibly sourced materials and can be made using recycled aggregates and cement replacements.

All our concrete products are recyclable at the end of their life and our innovative product development ranges from exploring different cementitious mixes in our concrete products to 60% cement replacement in our block paving.

Adaptation

Flood protection and urban heat island (see page 15) form part of our adaptation strategy.

Our Sustainable Drainage Systems (SuDS) provide an alternative approach to traditional piped systems, by mitigating many of the adverse impacts of storm water run-off in terms of both volume and pollutants. Our range of permeable paving helps to alleviate flooding which is one of the acute physical risks from climate change.



Human rights and environmental due diligence

Acknowledging, understanding and acting upon the salient human rights risks within our business operations and supply chains is the foundation of our human rights programme. We go to great lengths to understand not only the challenges which our suppliers may face, but also the context within which our suppliers operate and in which more broadly our supply chains sit. We seek to know both from within our supplier operations – inside out – and also the context – outside in.

This approach has led us to be able to clearly identify risks and instances of modern slavery, and to work to rectify, and also to see the wider system change which is so badly needed in many high-risk geographies. It is clear that climate change and climate-induced migration will have an impact on human rights.

This is an area that we are watching very closely, working with partners and NGOs to fully understand the long term implications of climate change for our supply chains. For more information on our approach to risk assessment in our supply chains, download our End Modern Slavery Statement 2021 and Risk Analysis 2021.

Circularity

A traditional linear economy where we manufacture, use and throw away has begun to shift to a more circular concept. This is encouraging a closing of the circularity loop and moving towards a more holistic view of how we consume products.

We have already started to look at **design** with some of our products – Conservation X paving uses up to 45% recycled content (made from secondary materials) and our concrete block paving uses up to 60% cement replacement.

In **manufacture**, we harvest and recycle water and our carbon reduction initiatives have resulted in a 50% reduction in carbon footprint between 2008 and 2020.

Distribution and the way in which we get our products to customers has been an area of focus. Though there is a way to go in reducing the environmental impact of our vehicles, the majority of our fleet has been upgraded to Euro 6 standards and we utilise a transport system that ensures efficiency of deliveries.

In order to provide useful information for our customers at the **consumption** stage, we have been updating our carbon footprints and working on developing environmental product declarations which will also include water footprints.

We already ensure minimal waste goes to landfill however there are plenty of ways in which we can develop our approach to **re-use and recycling**.

Urban heat island

Urban development means that cities are hotter than neighbouring rural areas – sometimes by as much as 10°C. This urban heat island effect is only going to get more pronounced as climate change makes extreme temperatures hotter.

Problems

- Construction materials absorb heat during the day and release it during the night – so a city never cools down, getting increasingly hotter as the summer goes on. Dark surfaces absorb heat more than paler surfaces. Also, textured surfaces break up light radiation, making them less likely to absorb as much heat as flatter (or polished) surfaces.
- There's not enough tree canopy cover in cities. Trees absorb heat and provide shade. Increased green infrastructure would provide multiple additional benefits over and above heat island mitigation, including: increased habitat for wildlife, cleaner air, better mental health for residents and less surface water run-off.
- There's a lack of open water in urban areas which means that there's little opportunity for evapotranspiration, which would normally help to keep spaces cool.

Solutions

- We have begun to look at the Solar Reflective Index (SRI) of our products – this is the ability of a surface to reflect solar energy instead of absorbing it. This data will allow customers to make more informed choices by better understanding which of our materials would reduce the heat island effect.
- Develop products or systems which maintain water on (or near to) the surface. The evapotranspiration effect generated will create cooler spaces that people will want to spend more time in. They also encourage creative opportunities for stormwater storage, helping to solve another environmental adaptation challenge.
- Our large planters encourage the inclusion of green infrastructure. These features absorb less heat, provide shade and offer evapotranspiration benefits.

Glossary

Climate change terminology can be confusing, so we've added a glossary here taken from the Science Based Targets initiative and the Intergovernmental Panel on Climate Change (IPCC) websites.

Greenhouse gases (GHGs)
Gases that absorb and trap heat (i.e. infrared radiation) from the Sun in the Earth's atmosphere. Includes the following gases that are covered by the UNFCCC/Kyoto Protocol: carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF6) and nitrogen trifluoride (NF3). These gases are the direct cause of climate change.

1.5°C
Science has made it clear that we must limit global temperature rise to 1.5°C above pre-industrial levels. We are currently at 1.1°C and are on track for 2.7°C according to the UNDP's Emissions Gap Report 2021. Every fraction of a degree matters.

Net-zero
A state of balance between anthropogenic emissions and anthropogenic removals. In most cases, it is important to specify either net-zero CO2 emissions or net-zero GHG emissions, which also includes non-CO2 GHGs.

Note: Anthropogenic means resulting from or produced by human activities

Carbon neutral
Although often used interchangeably with 'net-zero', the two are not the same. In general, when companies claim carbon neutrality they are counterbalancing CO2 emissions with carbon offsets without necessarily having reduced emissions by an amount consistent with reaching net-zero at the global or sector level. This may conceal the need for deeper emissions reductions that are in line with what the science requires for the world to keep global warming to 1.5°C.

Scope 1
Direct GHG emissions occur from sources that are owned or controlled by the company, for example, emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc. or emissions from chemical production in owned or controlled process equipment.

Scope 2
Emissions from purchased electricity, heat, and steam for use in business operations. Scope 2 emissions physically occur at the facility where electricity is generated, and so would fall into the scope 1 category for the power generator.

Scope 3
Scope 3 is a reporting category that allows for the treatment of all other indirect emissions. Scope 3 emissions are a consequence of the activities of the company, but occur from sources not owned or controlled by the company – typically as a result of supplier or customer activities.

These can be up or down the value chain - for example, transport and distribution, or the disposal of goods or services after they reach the consumer. Some examples of Scope 3 activities are extraction and production of purchased materials; transportation of purchased fuels; and use of sold products and services.

For more information, visit https://sciencebasedtargets.org/blog/net-zero-jargon-buster-a-guide-to-common-terms and https://www.ipcc.ch/sr15/chapter/glossary/

All measures and data are correct as at 31 December 2021.

Marshalls

Marshalls plc

Landscape House, Premier Way,
Lowfields Business Park, Elland HX5 9HT