



Global environmental sustainability strategy

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JCB
ROAD TO
ZERO

Foreword by Lord Bamford.



I am immensely proud of all that our business has achieved over the years, and the changes we have worked through to keep our business thriving. But in business you have to look forward and that means building on the innovations we've already delivered to realise new accomplishments.

At JCB we have a saying that "innovation is our lifeblood" – we thrive on meeting our challenges and moving on to the next. The need for new thinking never diminishes and at JCB we are now developing the machines which will support construction and agriculture in a zero carbon future. Despite the challenges of a global pandemic, our engineering teams have demonstrated how years of engine development can, with focus and determination, be put to work for a new future through the development of our hydrogen combustion engine.

Delivering product fit for the future is, of necessity, at the forefront of our Sustainability Strategy. However we must support these advances with

the same level of commitment to change in our manufacturing operations and our supply chain. Most importantly we must equip our people with the skills they will need as engineers and manufacturers in the future. Our track record of developing young people through apprenticeships and placements is something that will help shape our industry and our world in the future.

Over the past year we have seen many of the things we take for granted in our daily lives become less certain. Conversely the need to take urgent action to limit climate change has never been more clearly defined. It is of the utmost importance to my family and I that JCB delivers genuine and world-leading contributions to a sustainable future.

Our legacy for the future must be a resilient business with sustainable products and skilled people ready and able to flourish in the years to come.

Foreword by Graeme Macdonald.

2020 was an unprecedented year of challenge for JCB, as for so many others. At the beginning of that year we could not have foreseen what would happen to our business as a result of the global pandemic. Despite the setbacks and the adjustments we have had to make to our business over the past twelve months, we have emerged more focused on the future than ever. We have brought the strengths of our organisation to the fore during these challenging times and found our own ways to “build back better.”

And that focus on the future is exactly what is required. Notwithstanding the circumstances faced by our customers and wider society globally, the call for greater action on the climate and environmental crises has been unwavering. Never before has our support in delivering carbon reductions and responsible supply chains been so vital for our customers. And so in 2021 we find ourselves challenged with coupling firm ambition on carbon action with a growing business. Our order book has never been stronger and nor has the demand for solutions to the climate crisis.

Whilst we continue to face disruption in our supply chain and our operations in 2021, we have nonetheless continued to invest in the sustainable growth of our business. Our new factory in Vadodara will support streamlined logistics for our manufacturing business in India. In line with plans to increase our renewable energy capacity globally, 8MW of solar PV will come on line in India this year. Our investment in our manufacturing processes in the UK will make our production cleaner and more efficient.

Of course these are things that many organisations are committed to delivering. But what sets JCB apart is the investment we are making in developing products fit for a Net Zero future. Earlier this year we revealed our hydrogen combustion engine – a move which unlocks enormous potential for our industry and places our business in a low-carbon leadership position. Already this year we have demonstrated the possibilities of this technology to policymakers and influencers in our effort to ensure that all viable options for a genuinely low carbon and sustainable future are understood.

Our sustainability strategy sets out our direction along with some of the key timescales we are working towards. It is intended to be a ‘living’ document, very much alert to the emergence of new science, new innovations, new thinking and fresh knowledge. It sets out where we still need to do more work and where we need others to help to enable progress towards this goal.

Most importantly though it sets out how we believe we will contribute to creating a thriving net zero world.

Contents.

1.0	Scope	5
2.0	Context 2021	6
3.0	Our vision	7
4.0	Our approach	8
5.0	Sustainable innovation and engineering	10
6.0	Sustainable supply chain	13
7.0	Sustainable manufacturing	15
8.0	Sustainable manufacturing processes & facilities	17
9.0	Sustainable people	19
10.0	Nature	21
11.0	Our commitments and targets	22
12.0	Reporting and governance	24
13.0	Environmental sustainability priority workstreams summary	25
14.0	Social responsibility programmes	26

1.0 Scope.

There has never been a more urgent time to address climate change and the degradation of the natural environment. Around the world there is an increasing level of expectation that Leaders, Governments and Businesses will respond with the required level of effectiveness, speed and commitment to avoid further serious and irreversible damage to the planet on which we and millions of other species rely.

JCB Road to Zero is the name given to JCB's Strategy and Action Plans on sustainability which will see us seeking to deliver the necessary reductions in greenhouse gas emissions and resource use by the key milestone dates of 2030 and 2050, if not before.

This is JCB's first truly Global Environmental Sustainability Strategy. Its purpose is to set out a pathway by which JCB can deliver greenhouse gas emissions throughout its value chain in line with the requirements set out in the IPCC reports of 2018 and 2021 . At the same time, this pathway will ingrain more responsible resource consumption across our organisation and products; this in turn will protect biodiversity by limiting contributions to land use change and pollution arising from our value chain activities.

The principles set out in this strategy cover JCB's operations globally and its products and services.

2.0 Context.

In 2018 and 2019 we saw the publication of two seminal reports from the UN; the IPCC's Special Report on the Impacts of Global Warming above 1.5oC , and the IPBES Global Assessment of Biodiversity Report . These two reports set out very clearly the stark reality of the huge biodiversity loss that has occurred in recent decades, and the very limited time that we have to curb the impacts of climate change. The publication in 2021 of the IPCC's Sixth Report sets out even more clearly the impact that Climate Change is already having on our world and the need to drive emission cuts harder and faster to avoid further harmful change which would be irreversible for centuries.

In the UK dialogue on climate change, press coverage and public calls for more action have all been heightened and ultimately resulted in the UK Government declaring a Climate Emergency – a position which has been supported by business leaders around the world. In May 2019 the UK's Committee on Climate Change published its own report: Net Zero – The UK's Contribution to Stopping Climate Change.

By June 2019 the UK Government had committed to new legally binding targets for Net Zero emissions from the UK by 2050. This year (2021) the UK government increased its ambition on greenhouse gas emission reduction, setting out a target of 78% reduction in emissions by 2035. A range of policy documents are being released which gradually add more detail to the UK vision for a low carbon economy.

Outside of the UK, Brazil, China, India, Russia and the USA are amongst 197 countries which have signed the Paris Agreement on Climate Change. The Indian Government has announced a challenging target to generate 57% of its energy from renewable sources by 2027, and the Biden Presidency ushers in a new phase of US investment and engagement on climate action.

Globally our business faces legislative controls on energy use, pollutant releases and pressures on natural resources including water. Legislation and costs associated with negative environmental impacts are all expected to increase in coming years.

Increasingly competitors and customers in JCB's markets are committing to proactively address climate change. In order to compete in a Net Zero marketplace and to help our customers meet their own climate change and resource goals, JCB must also innovate and respond to environmental challenges. And it's not only customers and competitors who are setting a clear direction on climate change. Employees, investors, banks and Board members are all adding to the calls for businesses to take urgent action on climate and nature. Credible performance and genuine improvement in sustainability is now a key requisite for successful, future-fit businesses everywhere.

<https://www.ipcc.ch/sr15/>

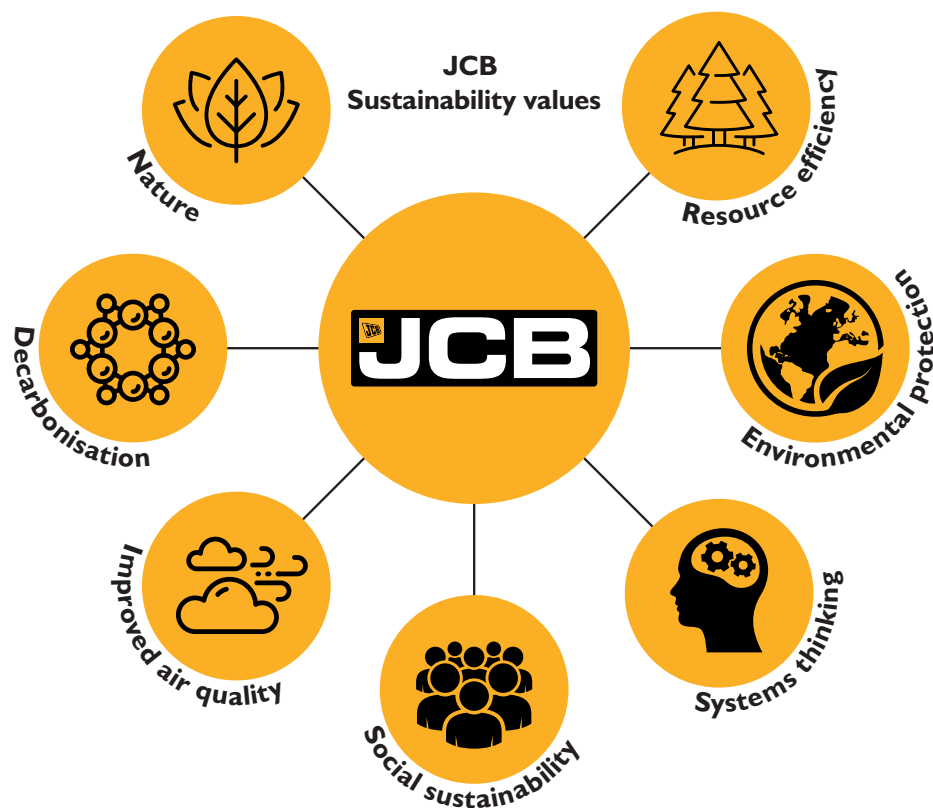
<https://www.un.org/sustainabledevelopment/blog/2019/05/nature-decline-unprecedented-report/>

<https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

3.0 Our vision.

Our vision for JCB is to deliver a profitable business and reputable brand, which delivers the following sustainability outcomes:

- Decarbonisation – making science-aligned reductions in the carbon emissions associated with our product, our supply chain and our operations
- Nature – No damage to nature as a result of our supply chain or operations and support for nature restoration
- Improved Air Quality – Products and manufacturing processes that do not lead to deteriorations in air quality
- Resource efficiency – Product design and operating processes that use all resources efficiently
- Environmental Protection – Products and operations that do not result in environmental pollution
- Social Sustainability – Operations and supply chains that are good for communities and other stakeholders
- Systems thinking – a business which thinks more holistically and makes decisions in the context of the climate and nature crises



4.0 Our approach.

This document sets out a strategic pathway designed to advance JCB's sustainability progress in line with current scientific, political and social imperatives on environmental protection and comes at a time when action to address climate change and the impacts of excessive resource use is more urgently required than ever before.

We have four over-arching objectives: reducing greenhouse gas emissions, reducing resource use, reducing waste (including single use plastics) and delivering organisational wide engagement with sustainability requirements. A fifth objective of nature protection and recovery is woven throughout our strategy, interlinking with the other four goals. Of course all of these elements interact with and are influenced by the others. However, for ease of reference this document is divided into our key work streams:

- Sustainable Innovation and Engineering
- Sustainable Supply Chain
- Sustainable Manufacturing
- Sustainable People

The Challenges

There are great opportunities at JCB for us to innovate and contribute to a more sustainable future. However, the inescapable truth is that to be really successful we need others to act with urgency and commitment too. The major changes required to deliver a Net Zero and nature positive future will take time to reach fruition. For example, renewable energy generation in India must be increased and clean hydrogen must be made available in the UK in order for JCB to meet some of our core goals quickly and cost effectively. We are committed to delivering on the opportunities available to us and to engaging with Government and pressing for clear policy and swift decision-making to help us on our journey.

Carbon Offset, Inset and Compensation

At JCB we do not believe that simply purchasing offsets in order to continue releasing carbon emissions is a credible way to address the climate emergency. Our commitment is to making tangible improvements in our own value chain – in other words inseting genuine carbon reductions. However, we recognise the need to reduce carbon emissions quickly and to take urgent action to restore nature. For this reason, where no alternative is available to reduce emissions right now, we will consider use of carbon compensation which also supports nature protection or restoration. We will only ever engage with credible and recognised schemes and we will only ever do so alongside a genuine campaign to directly reduce our impacts. In effect, Compensation measures would be a second lever that can be drawn on to accelerate progress towards global sustainability.

Materiality – What’s really important?

Sustainability covers many topics and touches each and every part of our business. With so much activity both within and outside of our business on this topic it is important that we have a clear programme of activity focused on our priority issues. Our own internal materiality assessment has identified decarbonisation of our product as our most material issue. Decarbonisation of our operations and managing supply chain impacts also score highly.

Decarbonisation

The most pressing and most material of all our sustainability impacts at present is our contribution to Climate Change, particularly through the use of our products. In order to help us prioritise our activity to address this issue, in 2019 we completed a Value Chain Carbon Assessment of our 2018 operations. We have used this work to identify our biggest areas of opportunity in terms of decarbonising our business.

The carbon footprint of our value chain is shown below. It is very clear that at present the vast majority of carbon emissions associated with our business reside in our Scope 3 impacts – and over 90% of those emissions are from use of our product. Our focus of activity therefore is on developing products which enable our customers to deliver their own targets on carbon reduction.

As well as creating a JCB business which can transition successfully to a low carbon world, we have a clear role to play in enabling others to do the same.

We are making significant investment in development and roll out of new technologies. However, there remains a risk that without rapid change, our carbon emissions could increase during the next few years due to growth, sourcing patterns, insufficient clean fuel infrastructure, and the time needed to bring new technologies to market.

We are currently developing our plans to understand whether we can bring alternative technologies to market more quickly.

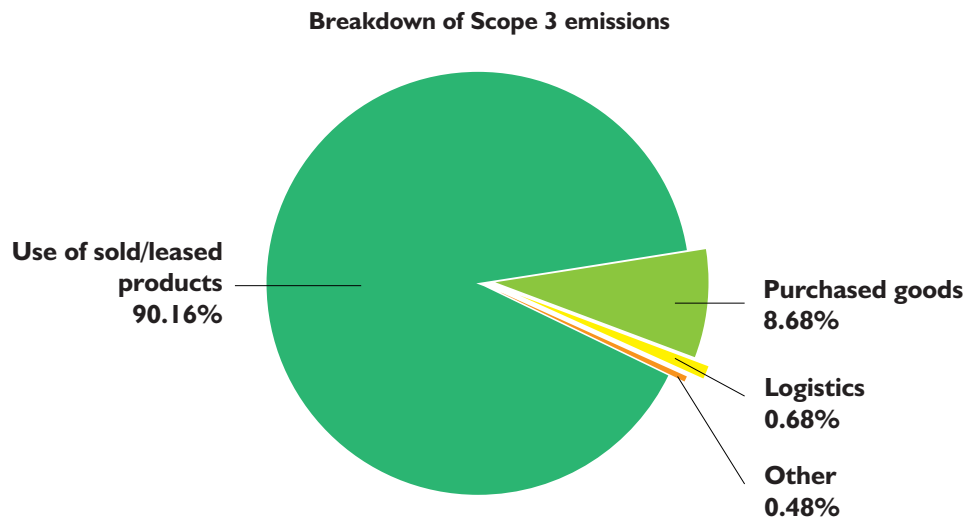
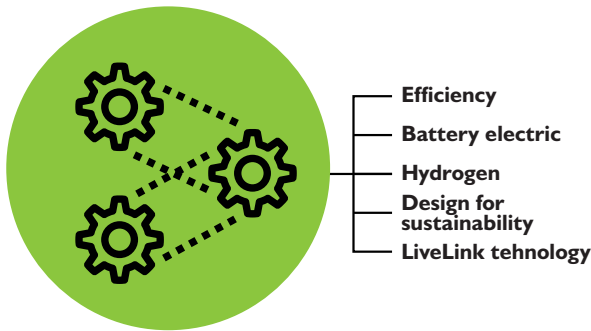


Figure 1: JCB's Scope 3 emissions in 2018

5.0 Sustainable Innovation & Engineering.



► **Priority Action: Decarbonisation**

JCB's Product range is currently primarily powered by diesel engines which generate a significant carbon footprint when the machine is in use.

JCB is making major investments in development of alternative-fuel products and in reducing emissions from our diesel engines. Our strategy to drive our products to Net Zero is three-fold.

Firstly we continue to drive the efficiency of our products across all product groups. The efficiency

of diesel fuelled products can help to reduce carbon emissions in the immediate future, but more importantly, improved efficiency enables down-powering of machines and unlocks the use of alternative propulsion. This helps to make the machines of the future more viable, lower cost and lower impact in terms of environmental impact.

Of course alternative fuels will not be available equally in all the territories JCB sells into and where diesel will remain the fuel choice out of necessity for the intermediate term, we can do more to reduce associated carbon emissions. This remains a priority.

Secondly, we have introduced battery-electric machines across a range of our smaller products, which are suited to battery energy capacities. We do not believe that battery power is the solution for our larger machines; greater levels of power required by some mid-range and larger machines, and the amount of energy to perform a full shift, mean that battery technology is not a viable solution. We are also acutely aware of the potentially very significant environmental impacts associated with battery production and the extraction of the raw materials required, the ultimate disposal or recycling, and the impact of electricity generation in areas of the world where renewable energy is still in very limited supply.

A socially and environmentally sound supply chain for batteries which protects workers, land rights of indigenous peoples, the natural environment and biodiversity is essential. In the same way the infrastructure to manage waste batteries must be developed in line with this new dominant technology. An environmentally sound, closed-loop processing route for end of life batteries which allows precious materials to be recovered is a must.

The third but possibly most important strand of our product power strategy is hydrogen. In 2020 JCB revealed its fuel-cell excavator to showcase the work we have been doing on hydrogen. However the hydrogen internal combustion engine which we have developed this year is potentially the most exciting development in our product innovation in recent years. The hydrogen combustion engine will allow our advanced engine technology to be used for decades to come, but with the potential for zero carbon emissions in use due to the possibility of entirely renewable hydrogen fuel.

Of course there is more work to do but the unveiling of the hydrogen combustion engine, coupled with battery solutions means that JCB can potentially make all its products zero-emission capable. We now need Governments around the world to rapidly advance the availability of clean fuels and electricity in support of these developments.

There are other fuels available in the marketplace right now which can help to reduce carbon emissions from our products when in use. Hydrotreated Vegetable Oil or HVO is available now as a drop-in fuel for a wide range of JCB engines. However, whilst there may be a role for genuinely waste-derived fuels in the immediate future, JCB recognises the potential for land use and biodiversity issues to arise in the value chains for these fuels. For this reason we are keen to prioritise the development and availability of long term sustainability solutions for our customers – our electric and hydrogen fuelled products. Challenges remain on how we tackle fossil-fuel based lubricants and oils, essential to our machine operation.

Air Quality

Our focus over the last 15 years on development of our diesel engines has also seen significant improvements around air quality objectives. Engines today are as much as 98% less polluting than those manufactured in 2000 when one considers Particulate Matter and NOx. Indian engine legislation will bring engines in Indian machines up to the same standard as in Europe within the next two years.

Steel

Our machines are, by weight, primarily made of steel. Steel itself has a significant carbon footprint and relies upon the extraction of iron ore which can also create serious environmental damage. Steel manufacturing processes vary in their carbon impact depending on technology and fuels used, and shipping of steel long distances also attracts a significant carbon footprint.

For this reason our approach to how we source and use steel is evolving to consider potential for using reduced plate thicknesses, sourcing from lower-carbon manufacturing processes, sourcing as close to the point of use as possible, partnering on innovations in steel use and recovering scrap and end of life steel for re-processing back into manufacturing feedstock. We are working closely with our suppliers to understand how their own roadmaps for decarbonisation can help us achieve our goals.

Design for Sustainability and the Circular Economy

Propulsion is not the only opportunity that we have to reduce the impact of our business through innovation and engineering excellence. Materials and design are also critical work areas for improving the sustainability of our machines.

An opportunity exists to make significant improvements in the sustainability of our products through eco-design including, for example, design which optimises material use and specifies materials which can be readily recycled back into useful materials at end of first life.

Recovery of materials for further use is essential to protection of natural resources, reducing the loss of biodiversity and habitat, minimising pollution and the development of a Circular Economy. Incorporating

recycled materials into new parts is part of our cross-functional approach to plastic waste.

Design for ease of disassembly and identification and separation of materials is an area where we have more work to do and will need to collaborate with our suppliers. As our exploratory work in this area develops we will need to set standards around recycled content and goals for increasing high quality recycled content in our products.

Designing out hazardous substances in our materials is a long-term goal which requires ongoing action across both our engineering and supply chain teams.

Remanufacturing

It is possible to remanufacture a number of core parts and assemblies from our products and this has been done to a limited extent in the past supporting provision of lower carbon, lower cost but fully warrantied parts to customers. Enhancing our offering on remanufacturing is something we will review in line with our wider business objectives.

Measuring Impact - LiveLink Technology

Our LiveLink software supports our customers with the best possible running of their machines. It has also been critical in assessing product efficiency improvements and in calculating our Scope 3 carbon footprint. LiveLink data development has to develop in line with the new propulsion technologies in order to optimise efficient real world deployment of the machines. Increasing adoption of LiveLink and corresponding systems around the world will continue to drive better understanding of our product carbon emissions. It is also essential to assessing the impact of engineering changes that we make to reduce fuel consumption in the field.

6.0 Sustainable supply chain.



- Local sourcing
- Freight efficiencies
- Low carbon transport
- Supplier contracts
- Supplier assesment
- Waste reduction
- Nature protection

JCB's supply chain is second only to the product use phase in terms of climate impact. The social and environmental impacts associated with machine use are in the main related to air quality concerns and contribution to climate change. By contrast the social and environmental impacts which can arise in the supply chain through sourcing, purchasing and logistics activities can be both significant and highly diverse.

► **Priority Action: Decarbonisation, waste reduction, supply chain assesment**

Sourcing

Like many other companies, JCB's sourcing patterns have changed considerably in the last decade. Increasingly parts and fabrications for the UK are sourced from India, China, Korea and other Far East territories adding significantly to the carbon footprint associated with moving parts to our manufacturing facilities. Goods manufactured in geographies with higher carbon power generation grids attract a higher embedded carbon footprint. The same is likely to be true for steel fabrications sourced outside of the UK and parts of Europe due to dirtier production processes. Meanwhile parts and kits manufactured in the UK are also sent to the USA, Brazil and India and even moved between suppliers for various sub assembly processes.

JCB's sourcing strategy requires bold action if we are to significantly reduce our supply chain carbon impacts. Our approach must be one of localisation and dual sourcing for supply and manufacture of parts and assemblies as far as possible since low carbon fuels within the shipping, road and air freight sectors are unlikely to become widely available in the immediate future. Localisation also helps to protect security of supply and reduce costs and impacts of emergency freight in times of disruption.

Logistics

Of course localisation of supply is not always an option and other strategies must form part of our approach too. Optimising our freight movements and the adoption of energy efficient and alternative transport fuels are also essential to making short term and immediate improvements, as evidenced by our Joloda container optimisation project. Modal change, where we seek to move freight from more polluting modes of transport such as air or road freight onto less-polluting modes such as rail, is also part of our approach to decarbonising the movement of materials within our business.

The successful decarbonisation of logistics, whether domestic or international, relies in large part on the policies and infrastructure put in place by national governments. However there are still some improvement activities that we can influence. Our strategy around reducing impacts of our logistics activity is three-fold: improving utilisation of carriers across all modes, moving to lower carbon modes of freight and requiring our logistics providers to invest in low carbon transport.

JCB Supplier Contracts and Supplier Assessment

JCB's suppliers have a key role in helping us deliver our ambition on impact reduction. To help keep focus we are embedding carbon reduction and wider sustainability goals into our supplier contracts, beginning with some of our biggest impact suppliers. Assessing our supplier performance also means that we can ensure we are working with the best suppliers with the best approach to sustainability. Our supplier assessment tool is currently being enhanced to help us identify sustainability risks in our supply chain more easily. All suppliers are required to sign up to our Supplier Code of Conduct which sets out our expectations across social and environmental impacts and ethical business practices.

Packaging Use and Waste

Packaging waste represents a significant environmental impact, in particular waste wood and plastics which are typically received as low grade materials and are therefore of low value as recyclates. Provenance of timber packaging is also of great importance, especially for supplies from areas at risk of illegal deforestation.

To reduce the impact of single use packaging that is currently prevalent in our supply chain, JCB's strategy is to standardise packaging requirements and to introduce returnable packaging where viable. We are currently seeking solutions for our overseas suppliers but we are committed to reducing the amount of waste associated with supply of materials into our business globally. Whilst our returnable packaging strategy is implemented we continue to work with suppliers to reduce unnecessary packaging and to reduce the number of different plastics received at our sites. This will improve the quality of recyclable material recovered from our waste streams.

We already return some standard and bespoke packaging to suppliers for re-use; closing the loop of waste materials so that they can be used again in re-supply of packaging to our business is the next step.

Nature and Deforestation

Our supply chain is the main arena in which we can tackle nature loss and unsustainable use of natural resources. Our sustainability standard for packaging requires that timber related products must be FSC or PEFC certified. We are working to embed this standard across all forest-derived products within our operations.

New environmental and social 'hotspots' in the supply chain will no doubt emerge as our understanding grows and as new technologies such as battery-driven propulsion become more prevalent in our business. Our supply chain assessments will be essential in helping us identify and respond to these emerging issues over time.

7.0 Sustainable manufacturing Processes & Facilities.



- Renewable energy
- Resource efficiency
- Waste reduction
- Design for sustainability
- Manufacturing strategy

► **Priority Action: Renewable energy, Resource efficiency, Energy Efficiency**

Manufacturing Processes & Facilities

Our overall impact from our manufacturing facilities is small in comparison to the impacts of our materials use and product in-use impacts. However, every opportunity to make our business more sustainable is important to us. Furthermore our manufacturing facilities are the window to our world in many ways;

they are seen by many customers, by our communities, our regulators and of course, our employees. In many ways they are the showcase for our sustainability commitments. Our manufacturing strategy determines where fabrications and machines are made. We must ensure that we make decisions on manufacturing locations which meet commercial and market requirements but also align with our objectives on carbon reduction and environmental impact.

Decarbonising our heat requirements for both facilities and curing processes will be a major challenge up to the end of the 2020s and beyond. Even in the UK we recognise that further clarity on infrastructure is required before we can determine exactly how we will tackle our carbon emissions from heat demand. We have completed life cycle analysis of different coating processes where some of our biggest environmental impacts are situated. These will help us understand the impact and the opportunities to decarbonise our facilities – including heat – as we invest in new process equipment.

In the meantime we have chosen to focus on renewable electricity deployment as one of the key carbon reduction strategies for our facilities. All of our facilities are part of our renewable energy drive. In some locations renewable energy contracts are not available but we are pursuing increasing amounts of self-generation of electricity across our global footprint with 8MW of solar power coming on line in 2021 across two locations in India.

Energy and Water Management and Efficiency

There are also technologies and approaches which are available now and which can be used to help us achieve our goals on climate change through improved efficiency. Likewise water management can be improved in a similar way, through measuring and controlling use and by designing processes to utilise water multiple times before replenishing. Strong programmes around energy and water management and energy efficiency are the foundation of a more sustainable approach to energy use. We have already invested in a significant number of improvements around pumps and motors and lighting, but we are still keen to develop a stronger culture of energy and water management through education and training, awareness, communication, informed investment and leadership. Such programmes can engage all employees too – from those that control Building Management Systems and heat intensive processes to office staff and contractors.

Waste

Globally the world produces more than 2 billion tonnes of solid wastes every single year. At the same time global resource consumption topped 100 billion tonnes per annum for the first time ever in 2020. These figures are alarming and absolutely unsustainable. As in other areas of our business, waste reduction is a key part of our sustainable manufacturing strategy, and this includes unused or damaged materials, movement of wastes, liquids, sludges and solid wastes. At all stages of the manufacturing process waste must be minimised.

Our manufacturing teams contribute to the reduction of waste in critical areas such as steel use by driving up levels of steel sheet utilisation. Likewise, efficient coating processes utilised by trained operatives can reduce levels of paint waste and air pollution. Our strategy has incorporated waste recycling for many years and we must ensure a global standard of waste minimisation, separation, recycling and reporting to ensure that we can track levels of resource use and wastage across our business globally.

8.0 Sustainable service & aftermarket.



- Logistics
- Packaging
- Warehousing
- Innovation for customers

Our Aftermarket business is built on meeting customer needs for parts and service in rapid timescales. This creates a specific challenge within our business but also an opportunity to support the development of more sustainable product and service offerings and to address outbound packaging and logistics impacts.

► **Priority Action: Decarbonisation, packaging waste reduction**

Investing in energy efficiency, applying a sustainable packaging standard and identifying sustainable logistics services – the Aftermarket business is uniquely placed to develop services which enhance the life of the machine, reduce waste and add value. Our Service team have already made good progress on incorporating recycled content into parts packaging but further opportunity remains around this activity and ‘self-pack’ programmes with suppliers which eliminate the need to decant and re-pack parts.

In addition to drawing on the approaches which apply across the organisation globally – for example

Distribution Strategy

Logistics impacts are a significant part of our Service impacts on the environment. Our new facility in the Netherlands will make a significant contribution to avoiding emissions in delivery of our global service, but further assessment and alignment of our Service business with Carbon reduction goals is proposed.

Our longer term goal is to enhance our distribution strategy with further warehousing facilities in key locations. In addition to establishing our Netherlands facility we have also relocated into larger premises in Dubai, giving us the capability over time to transfer service for all of the Africa and Pacific region as well as the Middle East to this location. Logistics movements could be further reduced by utilising the Dubai facility to replenish and support our Singapore operation and South East Asian Dealers.

Once fully operational our Netherlands warehouse will receive all supplies direct from European suppliers removing the need for goods to be shipped into the UK for holding. This facility will provide aftermarket service parts to France, the Czech Republic, Benelux, Germany and Nordic countries, potentially expanding to cover other locations in the future.

We also have plans to review operations for the US with a view to further localising supply to our customers from 2023. Meanwhile our UK World Parts Centre will become a centre of excellence for our UK sourced parts.

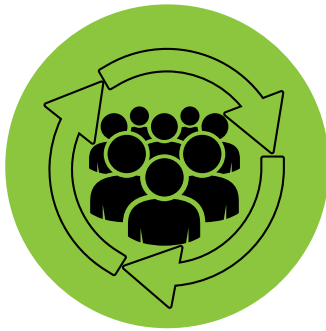
Consumer Products

Our Consumer Products business are guardians of the JCB brand across our range of tools, apparel, toys and gifts which are available globally. Just as with our machinery, we are keen to ensure that our ambition on sustainability extends across all of our consumer products. In common with JCB Service this part of our business has some very different sustainability challenges to the rest of our business, including the manufacture of clothing and electrical equipment.

We currently source goods from over 40 licensees and as such the vast majority of impacts from our Consumer Products business are Scope 3 emissions, largely located in our supply chain around the world. At present we are developing our programme of supplier assessment to help us identify which sustainability issues are most material to us in terms of our Consumer Products business, and how we can prioritise our activity in line with this to drive change in our supply chain. We're also learning from others in the brand licensing business how they are driving change in areas over which they have limited influence.

We expect to complete an initial assessment of our impacts and opportunities during 2022. This will allow us to engage with our licensees on the sustainability issues identified and develop plans for improvement. These might include reducing packaging, improving levels of recycled content in our packaging, encouraging our licensees to address their own Scope 1 and 2 emissions or incorporating more sustainable materials in our apparel and tools collections. Improving messaging around how to reduce impacts during use of products, for example washing clothing at lower temperatures, are other levers we can use to drive more responsible consumption.

9.0 Sustainable People.



- Training and coaching
- Communications
- Reporting
- Leadership
- Collaboration

► **Priority Action: Awareness, Engagement amongst stakeholders**

Over the past two years we have seen a huge growth in expectations around environmental sustainability. These have come from our customers, but also from our own people. As well as acting on climate change and environmental protection, we must share our progress and enable others to become more informed, increasingly able to take action and more comfortable that our organisation is setting out a climate and nature-conscious future.

Our reporting commitments and disclosure processes from 2023 onwards will ensure that our communications are comprehensive, accurate and widely available to all interested parties. Of course our Sales, Marketing, Press and Communications are inextricably linked with the delivery of our sustainability strategy. Our Sales team, for example, has a critical role to play in explaining the benefits of cleaner technology to our customers and making the transition to new technology an easy and painless process.

Over time the sustainability credentials required of our products will grow and expectations of our organisation's commitment to sustainability will likewise come under closer scrutiny. Our commitment is to deliver communications that are aligned both internally and externally with the need to demonstrate genuine commitment and progress across all facets of sustainable development.

Sustainability Champions

Sustainability Champions were appointed in all BUs and key functions in 2019 and have helped kick-start some real progress on sustainability across the business globally. The appointment of Sustainability Champions continues to be part of our strategic approach, extending the number of people capable of supporting Sustainability across the business. Awareness of climate change and other environment issues has increased significantly during the past 12 -18 months and this provides a unique opportunity to help more people become empowered to act on sustainability within the workplace and at home.

Systems Thinking and Skills for the Future

A change in mindset and approach is often required to embed sustainability in an organisation. Sustainability implications arise from everything we do, so a holistic and cross-functional approach to decision-making is essential. We need to coach our teams to overlay sustainability thinking on their daily tasks.

Training and skills development is key to empowering people to identify genuine opportunities to become more sustainable. Learning to identify root cause problems and to generate appropriate solutions is imperative for success and requires confidence and understanding. For these reasons, developing and rolling out a training programme which engages, enables and empowers teams and individuals at all levels of the organisation is a key foundation of our strategy. We have set a target to provide training in environmental sustainability to all employees by the end of 2023.

The importance of Partnerships

Collaboration is something of a buzzword in sustainability right now and there are ever-increasing examples of businesses coming together on common issues to find solutions and even implementing highly pragmatic approaches to the immediate need to cut fossil fuel use.

Goal 17 of the Sustainable Development Goals focuses on Partnerships for Sustainability because collaboration is the key to fast-tracking progress to sustainability; and what's more, it helps to reduce costs and resource burdens within individual organisations. JCB's key teams continue to actively seek opportunities to drive acceleration of sustainability programmes and innovations through collaboration, whether that be with suppliers, customers or across functions within our business.

10.0 Nature.

The IPBES (Inter-Governmental Science-Policy Platform on Biodiversity and Ecosystem Services) 2019 report on the startling decline of biodiversity sets out a stark future for human beings if we fail to act very quickly to reverse this alarming trend. With 60% of species lost since the 1970s, only transformative change will halt the current trend in losses.

Whilst biodiversity loss may seem far removed from our day to day business, there are steps that we can take as a business in our operations and in the design of our products to help conserve and restore nature.

The IPBES Report identifies the five biggest drivers of the decline in nature as being:

1. Changes of land and sea use
2. Direct exploitation of organisms
3. Climate Change
4. Pollution
5. Invasive Alien Species

Our work to decarbonise, to cut pollution and to become more resource-efficient will reduce our impacts on nature. We have also identified a number of specific approaches which can help to limit our impacts on biodiversity. These include using purchasing processes to specify use of certified materials only from high risk commodities (e.g. Timber, printed services, paper, wooden packaging).

We are also committed to critically assessing the impacts of the technologies we are using to reduce carbon emissions. Batteries and biomass-derived fuels and lubricants can have serious negative effects on the natural environment through pollution, extraction of resources and illegal deforestation. At JCB we are committed to transparency on the potential negative implications of these fuels and power sources and to taking action to address those impacts where they arise in our supply chain.

Science based targets

Increasingly businesses are aligning their goals around climate mitigation and adaptation with the findings of Climate scientists. The IPCC 2018 and 2021 reports clearly set out the timelines and levels of change needed to limit climate change to 1.5 degrees above present levels.

JCB has signalled its intent to join leading businesses in setting these essential targets by committing to the Science Based Targets Initiative Business Ambition for 1.5°C. We are currently developing our roadmap and Scope 3 targets and these will be published by 2023. In the meantime we are working on delivery of the following:

2030 Targets (vs 2018)

- Environmental Sustainability Training delivered to all employees by the end of 2023
- Scope 3 Target for 2030 confirmed and roadmap in place by 2023
- 50% reduction in GHG Emissions across Scope 1 and 2 by 2030
- 75% reduction in single use packaging waste by 2030
- Zero deforestation risk in our supply chain by 2030

Sustainable Development Goals

JCB is also using the UN's Sustainable Development Goals (SDGs) to frame its approach to Climate Change and other Sustainable Development issues. Whilst it may not be appropriate for JCB to respond to all of the goals at present, our 2030 Targets are very much aligned with the UN Sustainable Development Goals – most obviously SDGs 9 (Industry, Innovation and Infrastructure), 11 (Sustainable Communities and Cities), 12 (Responsible Consumption and Production), 13 (Climate Action), 14 (Life below Water), 15 (Life on Land) and 17 (Partnerships for the Goals) . Actions we take in delivering our Strategy and action plans will make valuable contributions to these particular goals as a minimum, but have the potential to reach across the SDG framework.

The benefit of the SDGs in helping to frame responses to sustainable development needs is that they are global in design and application. As a global company JCB can use the framework consistently across our businesses and our value chain. Furthermore, the framework is widely recognised by businesses, governments, financial institutions and communities around the world lending instant recognition to our Strategy and our contributions.

SUSTAINABLE DEVELOPMENT GOALS



Figure 3: The UN Sustainable Development Goals

Find out more about the SDGs here:

<https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

12.0 Reporting & Governance.

JCB's sustainability performance is overseen by the JCB Board and a Senior Team who meet regularly to review progress and agree direction.

JCB will release its first publicly available Sustainability report in 2023 and we are also preparing to comply with forthcoming requirements on Climate-Related Financial Disclosure.

Our Science Based Targets will be published by March 2023 at the latest.

13.0 Environmental Sustainability

Priority work streams

Engineering and Innovation	<ul style="list-style-type: none"> • Decarbonisation programmes: • Efficiency • Battery Technology • Hydrogen • Materials – Recycled content
Supply Chain	<ul style="list-style-type: none"> • Decarbonisation of logistics • Packaging Waste reduction • Supplier Assessment • Sourcing impacts – carbon • Sourcing impacts - Nature
Manufacturing and Facilities	<ul style="list-style-type: none"> • Renewable energy • Energy efficiency • Resource efficiency • Pollution reduction • Manufacturing strategy – carbon impacts
Service	<ul style="list-style-type: none"> • Decarbonisation of distribution • Packaging waste reduction
People	<ul style="list-style-type: none"> • Awareness • Engagement programmes
Reporting and Governance	<ul style="list-style-type: none"> • Sustainability Report 2023 • Prepare for Climate-related Disclosure • Communications Programmes

14.0 Social Responsibility Programmes.

Apprentices and Young People

JCB has offered Apprenticeships in the UK and USA for a number of years now with over 300 Apprentices taken on between 2017 and 2021. For our apprentices, the scheme offers the chance to gain valuable skills for employment, higher earning potential and improved life chances. Higher and degree apprenticeships allow apprentices to gain university-level qualifications while learning on the job and earning an income. Business Management and Engineering degree Apprenticeships are offered as well as technical and craft apprenticeships, and take between eighteen months and 5 years to complete depending on the level of training to be achieved. From offering just 4 Apprenticeship schemes when we started JCB now supports 25 different Apprenticeships across our new intake and our Apprentices who are now upskilling whilst in post.

In addition JCB supports a wide range of Graduate placements for degree students and offers a range of Graduate roles for those finishing University, completing our wide ranging support for young talent across our business.

India

JCB has supported the communities around our manufacturing centres for over twenty years.

In India, the Lady Bamford Charitable Trust (LBCT) began its journey by supporting a school in Ballabgarh, and has extended its reach to through three in-house foundations, covering nine of the Sustainable Development Goals and numerous communities across India including children, young adults, the differently abled, women, artists, rural artisans and farmers.

The Lady Bamford Charitable Trust is committed to supporting communities and the Indian government in achieving the objectives of Sustainable Development Goal 4 – Equality in Education. Underprivileged children are given the opportunity to access education through scholarship programmes and quality education is provided through access to digital learning, remedial support, teacher training and personal skills. To date approximately 15,000 children have benefited through the Trust across four locations – Faridabad in Haryana, Pune in Maharashtra, Jaipur in Rajasthan and Halol in Gujarat.

The LBCT has also supported delivery of the SDGs through agricultural programmes. In the village of Nanoli, Near Pune, Maharashtra farming is led by women but in the past the income earned has been relatively low in relation to the amount of time spent working on the land. With support from the local agriculture officer, and the LBCT a group of 12 women in the village have been able to engage with organic farming helping to ensure soil health and productivity and higher returns for the women farmers.

Together these women formed the 'Indrayani Farmers Group', the first ever women farmers group in the village, and went on to gain business and technical farming skills to help improve their businesses. Not only have the women increased their profits and developed more sustainable methods of farming their land, they have also been recognised at State Level by the Government of Maharashtra for their achievements.

Project Utpal in India was established to support the dyeing and block printing component of the handicrafts sector. The Project's objective is to enhance artisan income growth while enabling environmentally sensitive production processes and is currently working with 100 units of traditional dyers and block printers to improve their economic, social and environmental sustainability. Initiatives include recycling and water harvesting, business efficiency and skills and occupational health and safety support.

Brazil

Our team in Brazil continue to support numerous socially and environmentally beneficial programmes.

Like many of our teams globally, the team brought much-needed support to communities struggling with the COVID pandemic through delivery of food parcels and provision of blankets to homelessness and addiction recovery centres.

The soap factory established by the Lady Bamford Foundation in 2007 in Sorocaba continues to operate. The factory collects and processes waste oils from the surrounding area which are filtered, classified and either sold on or turned into soap products. The profits from the factory are used to support the running of a nursery for local children. Funds are used to provide uniforms, books and toys and to ensure that the nursery is maintained. During the COVID disruption, JCB teams have continued to support the children and their families with food and personal care packages.

Young people will also benefit from a new partnership which will commence in October 2021. JCB will be partnering with the Pescar Foundation to provide personal and professional development to young people from low income backgrounds. The Foundation has been helping 16 – 19 year olds develop skills for employment for 45 years with a focus on sustainable development and citizenship.

USA

The Lady Bamford Center was established in Savannah, GA in 2007 and provides education and social skills development to children from six weeks to five years of age. The Center offers priority admission to children from homeless and low-income families, as well as children with physical, mental or emotional challenges. Its interactive curriculum prepares young children for kindergarten and elementary school and at present it provides support to between 75 – 85 children at a time.

Annual fundraising activities by JCB staff contribute to the annual operating costs of the Center; recent events have included Mud Runs around the JCB Savannah facility and Golf Tournaments.

The Lady Bamford Charitable Trust supports projects in India which contribute to SDGs 1 (No Poverty), 3 (Health and Wellbeing), 4 (Quality Education), 5 (Gender Equality), 8 (Decent Work and Economic Growth), 10 (Reduced Inequality), 12 (Responsible Consumption and Production), 13 (Climate Change), 17 (Partnerships for the Goals)



UK

The NSPCC's Carole House in Staffordshire opened in 2014 to provide services to children who have suffered abuse or who are at risk of abuse, along with their families. The centre is the NSPCC's first Service Centre in Staffordshire and has helped the NSPCC bring together lots of smaller projects into one location. The Centre was paid for with £1Million raised by JCB Staff – a figure that was matched by JCB's Chairman Lord Bamford.

The Centre has eight therapeutic rooms, as well as play equipment, two art rooms and an outside space and provides services for children, parents and teachers to help them identify and respond to abusive behaviour. JCB staff in the UK continue to support the NSPCC with annual fundraising activities.



**Always looking
for a better way**